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JOHN S. KEMPER
VICE-PRESIDENT
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Docket Nos: 50-352
50-353

Mr. A. Schwencer, Chief
Licensing Branch No. 2
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, DC 20555

SEP 14 1984

Subject: Limerick Generating Station, Units 1 & 2
Information for Containment Systems Branch Regarding
Primary Containment Isolation Valves,
FSAR Table 6.2-17

Reference: D. R. Helwig (PECo) Telecon with F. Eltawila (NRC)
on September 10, 1984

Dear Mr. Schwencer:

Attached are draft changes to FSAR Table 6.2-17 regarding primary containment isolation provisions to ensure that valve isolation signal nomenclature is in agreement with the proposed Limerick Technical Specifications. This change was discussed in the referenced telecon.

The information contained on these draft FSAR changes will be incorporated into the FSAR, exactly as it appears on the attachments, in the revision scheduled for October, 1984.

Very truly yours,

V. L. Boyer
for JSK.

WJM/cmv/09128405

Attachment

Copy to: See Attached Service List

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Mr. Timothy R. S. Campbell	(w/o enclosure)

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TABLE 6.2-17

CONTAINMENT PENETRATION

CONTAINMENT PENETRATION NUMBER	LINE ISOLATED	FLUID	LINE SIZE (in.)	NRC GENERAL DESIGN CRITERION	ESF SYSTEM	ESSENTIAL SYSTEM	VALVE NUMBER	VALVE TYPE(1)	VALVE LOCATION	VALVE ARRANGEMENT(2)	TYPE C TEST	LE PI CO OU VA
X-3A-1	Instrumentation-main steam line D flow	Water/steam	1	55	-	-	F070D F073D	XFC XFC	Outside Outside	(40)	No	
X-3A-2	Instrumentation-Recirc pump seal pressure	Water	1	55	-	-	F003A	XFC	Outside	(40)	No	
X-3B	Instrument gas supply	Gas	1	56	No No	No No	1005B 129B	CK GB	Inside Outside	(22)	Yes	
X-3C-1	Instrumentation-HPCI steam flow	Steam	1	55	-	-	F024A	XFC	Outside	(40)	No	
X-3C-2	Instrumentation-HPCI steam flow	Steam	1	55	-	-	F024C	XFC	Outside	(40)	No	
X-3D-1	Instrumentation-main steam line A flow	Steam/water	1	55	-	-	F070A F073A	XFC XFC	Outside Outside	(40)	No	
X-3D-2	Instrument gas supply	Gas	1	56	No No	Yes Yes	1112 151B	CK GB	Inside Outside	(48)	Yes	
X-7A-D	Main steam	Steam	26	55	No No Yes	No No Yes	F022A-D F028A-D F001B,F. K,P 101B,F,K,P	GB GB GB	Inside Outside Outside	(1)	Yes	4'
X-8	Main steam drain	Steam/water mix	3	55	No No	No No	F016 F019	GT GT	Inside Outside	(33)	Yes	45'

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TABLE 6.2-17

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CONTAINMENT PENETRATION DATA

EVENT(2)	TYPE C TEST	LENGTH OF PIPE FROM CONT. TO OUTSIDE VALVES	PRIMARY METHOD OF ACTUATION(3)	SECONDARY METHOD OF ACTUATION	NORMAL VALVE POSITION(4)	SHUTDOWN VALVE POSITION	POST-ACCIDENT POSITION	POWER FAILURE VALVE POSITION	ISOLATION SIGNAL(5)	DIVERSE ISOLATION SIGNAL(12)	VALVE CLOSURE TIME(6)	POWER SOURCE(7)	REMARKS
0)	No	12"	Flow	-	0	0	0	-	-	-	-	-	
		12"	Flow	-	0	0	0	-	-	-	-	-	
0)	No	2'-3"	Flow	-	0	0	0	-	-	-	-	-	
2)	Yes	-	Flow	-	0	0	C	-	-	-	-	-	
		6"	Comp Air	Spring	0	0	C	C	C,H,S	Yes	4.4 sec	B	
0)	No	12"	Flow	-	0	0	0	-	-	-	-	-	
0)	No	12"	Flow	-	0	0	0	-	-	-	-	-	
0)	No	12"	Flow	-	0	0	0	-	-	-	-	-	
0)	No	12"	Flow	-	0	0	0	-	-	-	-	-	
0)	No	12"	Flow	-	0	0	0	-	-	-	-	-	
0)	Yes	-	Flow	-	0	0	C	-	-	-	-	-	
		7"	AC Motor	Manual	0	0	C	AS IS	M	NA	30 sec	D	
	Yes	-	Instr gas	Spring	0	C	C	C	C,D,E,F,P,Q	Yes	3 to 10 ⁺ sec	A/W	
		0"	Comp air	Spring	0	C	C	C	C,D,E,F,P,Q	Yes	3 to 10 ⁺ sec	B/X	
		4'-6"	AC motor	Manual	C	C	0	AS IS	EA	NA	30 sec	H	
	No	45'-8"	Flow	-	0	0	0	-	-	-	-	-	
	Yes	-	AC motor	Manual	C	0	C	AS IS	C,D,E,F,P,Q	Yes	30 sec	A	
		0"	AC motor	Manual	C	0	C	AS IS	C,D,E,F,P,Q	Yes	Standard	B	

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TABLE 6.2-17 (Cont'd)

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CONTAINMENT PENETRATION NUMBER	LINE ISOLATED	FLUID	LINE SIZE(in.)	NRC GENERAL DESIGN CRITERION	ESF SYSTEM	ESSENTIAL SYSTEM	VALVE NUMBER	VALVE TYPE(1)	VALVE LOCATION	VALVE ARRANGEMENT(2)	TYPE C TEST	LENGTH OF PIPE FROM CONT. TO OUTSIDE VALVES	PRIMARY METHOD OF ACTUATION
X-9A,B	Feedwater	Water	24	55	Yes	Yes	F010A	CK	Inside	(2)	Yes	-	Flow
					No	Yes	F010B	CK	Inside			-	Flow
					Yes	Yes	F074A	SLPACK	Outside			0"	Flow
					No	Yes	F074B	SLPACK	Outside			0"	Flow
					No	No	F032A,B	CK	Outside			22'-2"	Flow
					No	No	109A,B	GT	Outside			31'-6"	AC motor
					No	No	F039	SLPACK	Outside			29'-6"	Flow
					No	Yes	F013	GT	Outside			20'-1"	DC motor
					No	Yes	1036A,B	CK	Outside			2'-6"	Flow
					No	Yes	130A,B	GB	Outside			124'-6"	AC motor
					No	Yes	133A,B	GB	Outside			70'-1"	AC motor
					No	No	1016	GB	Outside			83'-2"	Manual
					Yes	Yes	F105	GT	Outside			22'-8"	AC Motor
X-10	Steam to RCIC turbine	Steam	3	55	No	Yes	F007	GB	Inside	(3)	Yes	-	AC motor
					No	Yes	F008	GB	Outside			0"	AC motor
					No	No	F076	GB	Outside			3'-3"	AC motor
X-11	Steam to HPCI turbine	Steam	1	55	No	Yes	F002	GB	Inside	(3)	Yes	-	AC motor
					No	Yes	F003	GB	Outside			0"	AC motor
					No	No	F100	GB	Outside			6'-9"	AC motor
X-12	RHR shutdown cooling supply	Water	20	55	No	No	F009	GT	Inside	(21)	Yes	-	AC motor
					No	No	F008	GT	Outside			17"	AC motor
					No	-	155	PSV	Inside			-	Water pres
X-13A&B	RHR shutdown cooling return	Water	12	55	No	No	F050A,B	TCK	Inside	(11)	Yes	-	Flow
					No	No	151A,B	GB	Inside			-	Inst gas
					No	No	F015A,B	GB	Outside			11"	AC motor
X-14	RMCU supply	Water	6	55	No	No	F001	GB	Inside	(20)	Yes	-	AC motor
					No	No	F004	GB	Outside			0"	AC motor
X-16A	CS discharge	Water	12	55	Yes	Yes	F006A	TCK	Inside	(11)	Yes	-	Flow
					Yes	Yes	F039A	GB	Inside			-	Inst gas
					Yes	Yes	F015	GT	Outside			0"	AC motor
X-16B	CS discharge	Water	12	55	Yes	Yes	F006B	TCK	Inside	(8)	Yes	-	Flow
					Yes	Yes	F039B	GB	Inside			-	Inst gas
					Yes	Yes	108	SLPACK	Outside			0"	Flow

Line
for info

TABLE 6.2-17 (Cont'd)

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VALVE ARRANGEMENT(2)	TYPE C TEST	LENGTH OF PIPE FROM CONT. TO OUTSIDE VALVES	PRIMARY METHOD OF ACTUATION(3)	SECONDARY METHOD OF ACTUATION	NORMAL VALVE POSITION(4)	SHUTDOWN VALVE POSITION	POST-ACCIDENT POSITION	POWER FAILURE VALVE POSITION	ISOLATION SIGNAL(5)	DIVERSE ISOLATION SIGNAL(12)	VALVE CLOSURE TIME(b)	POWER SOURCE(7)	REMARKS
(2)	Yes	-	Flow	-	O	C	O	-	-	-	-	-	
		-	Flow	-	O	C	O	-	-	-	-	-	
		0"	Flow	Spring	O	C	O	-	-	-	-	-	
		0"	Flow	Spring	O	C	O	-	-	-	-	-	(9)
		22'-2"	Flow	AC motor	O	C	O	AS IS	-	-	-	-	(9)
		31'-6"	AC motor	Manual	C	C	C	AS IS	RM	No	Standard	A	(13)
		29'-6"	Flow	Spring	O	O	C	-	-	-	-	A	
		20'-1"	DC motor	Manual	C	C	O	AS IS	LFCC	NA	15 sec	A	(9)
		2'-6"	Flow	-	C	C	O	-	-	-	-	-	
		124'-6"	AC motor	Manual	C	C	C	AS IS	RM	NA	30 sec	A, B	
		70'-1"	AC motor	Manual	C	C	O	AS IS	RM	NA	30 sec	A, B	
		83'-2"	Manual	-	C	C	C	C	-	-	-	-	
		22'-8"	AC Motor	Manual	C	C	O	AS IS	RM	NA	20 sec	B	
(3)	Yes	-	AC motor	Manual	O	C	O	AS IS	K,KA	NA	7.2* sec	C	
		0"	AC motor	Manual	O	C	O	AS IS	K,KA	NA	7.2* sec	A	
		3'-3"	AC motor	Manual	C	C	C	AS IS	K,KA	No	30 sec	A	(14)
(3)	Yes	-	AC motor	Manual	O	C	O	AS IS	L,LA	NA	12* sec	D	
		0"	AC motor	Manual	O	C	O	AS IS	L,LA	NA	12* sec	B	
		6'-9"	AC motor	Manual	C	C	C	AS IS	L,LA	No	30 sec	B	(14)
(21)	Yes	-	AC motor	Manual	C	O	C	AS IS	A,V	Yes	Standard	A	(15)
		17"	AC motor	Manual	C	O	C	AS IS	A,V	Yes	Standard	B	(15)
		-	Water press.	-	C	C	C	-	-	-	-	-	
(11)	Yes	-	Flow	Inst gas	C	O	O	-	A,V	-	-	A,B	
		-	Inst gas	Spring	C	C	C	C	A,V	Yes	4.4 sec	A	
		11"	AC motor	Manual	C	O	C	AS IS	A,V	Yes	29 sec	B	
(20)	Yes	-	AC motor	Manual	O	O	C	AS IS	B,J,Y	Yes	10* sec	A	
		0"	AC motor	Manual	O	O	C	AS IS	B,J,Y	Yes	10* sec	B	
(11)	Yes	-	Flow	Inst gas	C	C	O	-	-	-	-	A	(9)
		-	Inst gas	Spring	C	C	C	C	-	-	-	A	
		0"	AC motor	Manual	C	C	O	AS IS	RM	NA	12 sec	A	
(8)	Yes	-	Flow	Inst gas	C	C	O	-	-	-	-	B	(9)
		-	Inst gas	Spring	C	C	C	C	-	-	-	B	
		0"	Flow	Spring	C	C	O	C	-	-	-	B	(9)

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TABLE 6.2-17 (Cont'd)

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CONTAINMENT PENETRATION NUMBER	LINE ISOLATED	FLUID	LINE SIZE(in.)	NRC GENERAL DESIGN CRITERION	ESF SYSTEM	ESSENTIAL SYSTEM	VALVE NUMBER	VALVE TYPE(1)	VALVE LOCATION	VALVE ARRANGEMENT(2)	TYPE C TEST	LENGTH OF PIPE FROM CONT. TO OUTSIDE VALVES	PRIMARY METHOD OF ACTUATION(3)
X-17	RPV head spray	Water	6	55	No No No	No - No	F022 122 F023	GT PSV GB	Inside Inside Outside	(21)	Yes	- - 0"	AC motor Water press AC motor
X-20A-1	Instrumen- tation- RPV level	Water	1	55	-	-	F045B	XFC	Outside	(37)	No	14"	Flow
X-20A-2	Instrumen- tation- LPCI B'dP	Water	1	55	-	-	102B	XFC	Outside	(40)	No	14"	Flow
X-20A-3	Instrumen- tation- LPCI O'dP	Water	1	55	-	-	103B	XFC	Outside	(40)	No	14"	Flow
X-20B-1	Instrumen- tation- RPV level	Water	1	55	-	-	F045C	XFC	Outside	(37)	No	2'-2"	Flow
X-20B-2	Instrumen- tation- LPCI C'dP	Water	1	55	-	-	102C	XFC	Outside	(40)	No	13"	Flow
X-21	Service air	Gas	3	56	No No	No No	1140 1139	GT GT	Inside Outside	(8)	Yes	- 0"	Manual Manual
X-22	Instrumen- tation - dry- well pressure	Gas	1	56	-	-	147C	GB	Outside	(41)	No	8"	AC motor
X-23	Recirc pump cooling water supply	Water	4	56	No No No	No No No	106 108 109	GT GT GT	Outside Outside Outside	(13)	Yes	0" 3'-11" 5'-2"	AC motor AC motor Manual
X-24	Recirc pump cooling water return	Water	4	56	No No No	No No No	107 111 110	GT GT GT	Outside Outside Outside	(13)	Yes	0" 3'-8" 5'-0"	AC motor AC Motor Manual

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TABLE 6.2-17 (Cont'd)

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VALVE ANGEMENT(2)	TYPE C TEST	LENGTH OF PIPE FROM CONT. TO OUTSIDE VALVES	PRIMARY METHOD OF ACTUATION(3)	SECONDARY METHOD OF ACTUATION	NORMAL VALVE POSITION(4)	SHUTDOWN VALVE POSITION	POST- ACCIDENT POSITION	POWER FAILURE VALVE POSITION	ISOLATION SIGNAL(5)	DIVERSE ISOLATION SIGNAL(12)	VALVE CLOSURE TIME(6)	POWER SOURCE(7)	REMARKS
(21)	Yes	- 0"	AC motor Water press. AC motor	Manual Manual	C C C	O C O	C C C	AS IS - AS IS	A,V - A,V	- Yes Yes	- Standard 90 sec	- A B	(15)
(37)	No	14"	Flow	-	O	O	O	-	-	-	-	-	
(40)	No	14"	Flow	-	O	O	O	-	-	-	-	-	
(40)	No	14"	Flow	-	O	O	O	-	-	-	-	-	
(37)	No	2'-2"	Flow	-	O	O	O	-	-	-	-	-	
(40)	No	13"	Flow	-	O	O	O	-	-	-	-	-	
(8)	Yes	- 0"	Manual Manual	- -	C C	C C	C C	- -	- -	- -	- -	- -	
(41)	No	8"	AC motor	Manual	O	O	O	AS IS	RM	-	30 sec	C	
(13)	Yes	0" 3'-11" 5'-2"	AC motor AC motor Manual	Manual Manual -	O O C	O O C	C C C	AS IS AS IS -	RM RM -	No No -	Standard Standard -	C D -	(16) (16)
(13)	Yes	0" 3'-8" 5'-0"	AC motor AC Motor Manual	Manual Manual -	O O C	O O C	C C C	AS IS AS IS -	RM RM -	No No -	Standard Standard -	C D -	(16) (16)

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TABLE 6.2-17 (Cont'd)

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CONTAINMENT PENETRATION NUMBER	LINE ISOLATED	FLUID	LINE SIZE (in.)	HRC GENERAL DESIGN CRITERION	ESF SYSTEM	ESSENTIAL SYSTEM	VALVE NUMBER	VALVE TYPE(1)	VALVE LOCATION	VALVE ARRANGEMENT(2)	TYPE C TEST	LENGTH OF PIPE FROM CONT. TO OUTSIDE VALVES	PRIMARY METHOD OF ACTUATION(3)
X-25	Drywell purge supply	Gas	24	56	No	No	135	BF	Outside	(5)	Yes	16'-7"	AC motor
					Yes	Yes	121	BF	Outside			3'-11"	Comp air
					No	No	123	BF	Outside			3'-4"	Comp air
					Yes	Yes	131	BF	Outside			60'-7"	Comp air
					Yes	Yes	163	BF	Outside			3'-8"	AC motor
X-26	Drywell purge exhaust	Gas	24	56	No	No	109	BF	Outside	(27)	Yes	42'-2"	AC motor
					Yes	Yes	115	BF	Outside			53'-7"	AC motor
					No	No	145	GB	Outside			66'-9"	AC coil
					No	No	111	GB	Outside			6'-6"	AC motor
					No	No	114	BF	Outside			45'-7"	Comp air
X-27A	Instrument gas supply	Gas	1	56	Yes	Yes	161	BF	Outside	(48)	Yes	4'-5"	AC motor
					No	No	117	GB	Outside			60'-3"	Comp air
					-	-	139	GB	Outside			35'-5"	AC Coil
					No	Yes	1128	CK	Inside			-	Flow
					No	Yes	151A	GB	Outside			7"	AC motor
X-27B - 1	Instrumentation-HPCI	Steam	1	55	-	-	F0248	XFC	Outside	(40)	No	12"	Flow
X-27B - 2	Instrumentation-HPCI Flow	Steam	1	55	-	-	F0240	XFC	Outside	(40)	No	12"	Flow
X-28A - 1	Recirc loop sample	Water	3/4	56	No	No	F019	GB	Inside	(9)	Yes	4'-3"	Instr gas
					No	No	F020	GB	Outside				Comp air
X-28A - 2	Drywell H ₂ /O ₂ sample	Gas	1	56	Yes	Yes	134	GB	Outside	(23)	Yes	20"	AC coil
					Yes	Yes	144	GB	Outside			3'-0"	AC coil
X-28A - 3	Drywell H ₂ /O ₂ sample	Gas	1	56	Yes	Yes	132	GB	Outside	(23)	Yes	20"	AC coil
					Yes	Yes	142	GB	Outside			3'-0"	AC coil
X-288	Drywell H ₂ /O ₂ sample	Gas	1	56	Yes	Yes	133	GB	Outside	(23)	Yes	17"	AC coil
					Yes	Yes	143	GB	Outside			2'-11"	AC coil
					Yes	Yes	195	GB	Outside			2'-11"	AC coil

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TABLE 6.2-17 (Cont'd)

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VALVE RANGEMENT(2)	TYPE C TEST	LENGTH OF PIPE FROM CONT. TO OUTSIDE VALVES	PRIMARY METHOD OF ACTUATION(3)	SECONDARY METHOD OF ACTUATION	NORMAL VALVE POSITION(4)	SHUTDOWN VALVE POSITION	POST- ACCIDENT POSITION	POWER FAILURE VALVE POSITION	ISOLATION SIGNAL(5)	DIVERSE ISOLATION SIGNAL(12)	VALVE CLOSURE TIME(6)	POWER SOURCE(7)	REMARKS
(5)	Yes	16'-7" 3'-11" 3'-4" 60'-7" 3'-8" 42'-2"	AC motor Comp air Comp air Comp air AC motor AC motor	Manual Spring Spring Spring Manual Manual	C C C C C C	0 C C C C C	C C C C 0 C	AS IS C C C AS IS AS IS	B,H,X,W,X U,S B,H,X,W,X U,S B,H,X,W,X U,S B,H,X,W,X U,S B,H,R,S B,H,X,W,X U,S	Yes NA Yes NA NA Yes	6** sec 5** sec 5** sec 5** sec 6 sec 6** sec	B A A A D B	(18) (18) (18) (18) (18) (18)
(27)	Yes	53'-7" 66'-9" 6'-6" 49'-7" 4'-5" 60'-3" 35'-5"	AC motor AC coil AC motor Comp air AC motor Comp air AC Coil	Manual - Manual Spring Manual Spring -	C 0 C C C C 0	0 0 C 0 C C 0	C 0 C C 0 C 0	AS IS C AS IS C AS IS C C	B,H,X,W,X U,S B,H,R,S B,H,X,W,X U,S B,H,X,W,X U,S B,H,R,S B,H,R,S RM	Yes NA Yes Yes NA Yes -	6** sec 2 sec 15** sec 5** sec 6 sec 5** sec 2 sec	A D B B C A A	(18) (18) (18) (18) (18) (18) (18)
(48)	Yes	- 7"	Flow AC motor	- Manual	0 0	0 0	C C	AS IS	- M	- NA	- 30 sec	- C	
(40)	No	12"	Flow	-	0	0	0	-	-	-	-	-	
(40)	No	12"	Flow	-	0	0	0	-	-	-	-	-	
(9)	Yes	- 4'-3"	Instr gas Comp air	Spring Spring	C C	C C	C C	C C	B,D B,D	Yes Yes	4.4 sec 4.4 sec	A B	(14) (14)
(23)	Yes	20" 3'-0"	AC coil AC coil	- -	0 0	0 0	0 0	C C	B,H,R,S B,H,R,S	NA NA	2 sec 2 sec	B D	
(23)	Yes	20" 3'-0"	AC coil AC coil	- -	0 0	0 0	0 0	C C	B,H,R,S B,H,R,S	NA NA	2 sec 2 sec	B D	
(23)	Yes	17" 2'-11" 2'-11"	AC coil AC coil AC coil	- - -	0 0 0	0 0 0	0 0 0	C C C	B,H,R,S B,H,R,S B,H,R,S	NA NA NA	2 sec 2 sec 2 sec	A D C	

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TABLE 6.2-17 (Cont'd)

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CONTAINMENT PENETRATION NUMBER	LINE ISOLATED	FLUID	LINE SIZE (in.)	NRC GENERAL DESIGN CRITERION	ESF SYSTEM	ESSENTIAL SYSTEM	VALVE NUMBER	VALVE TYPE(1)	VALVE LOCATION	VALVE ARRANGEMENT(2)	TYPE C TEST	LENGTH OF PIPE FROM CONT. TO OUTSIDE VALVES	PRIMARY METHOD OF ACTUATION
X-29A	Instrumen- tation- RPV flange leakage	Water	1 1/2	55	-	-	F009	XFC	Outside	(37)	No	12"	Flow
X-29B	Instrumen- tation- CS WP	Water	1	55	-	-	F018A	XFC	Outside	(40)	No	12"	Flow
X-30A	Instrumen- tation- main steam line D flow	Water	1	55	-	-	F071D F072D	XFC XFC	Outside Outside	(40)	No	12" 12"	Flow Flow
X-30B-1	Instrumen- tation - dry- well pressure	Gas	1	56	-	-	147A	GB	Outside	(41)	No	7"	AC motor
X-30B-2	Instrumen- tation- main steam line C flow	Water	1	55	-	-	F071C F072C	XFC XFC	Outside Outside	(40)	No	12" 12"	Flow Flow
X-31A,B	Instrumen- tation- jet pump flow	Water	1	55	-	-	F059B,F,H F059D F051B F053B	XFC XFC XFC XFC	Outside Outside Outside Outside	(37)	No	12" 4'-7" 3'-4" 12"	Flow Flow Flow Flow
X-32A,B	Instrumen- tation- jet pump flow	Water	1	55	-	-	F059M,S,U F051D F053D F059P	XFC XFC XFC XFC	Outside Outside Outside Outside	(37)	No	12" 3'-4" 12" 4'-6"	Flow Flow Flow Flow
X-33A-1	Instrumen- tation- pressure above core plate	Water	1	55	-	-	F055 F076	XFC XFC	Outside Outside	(37)	No	2'-5" 4'-2"	Flow Flow

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TABLE 6.2-17 (Cont'd)

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VALVE ARRANGEMENT(2)	TYPE C TEST	LENGTH OF PIPE FROM CONT. TO OUTSIDE VALVES	PRIMARY METHOD OF ACTUATION(3)	SECONDARY METHOD OF ACTUATION	NORMAL VALVE POSITION(4)	SHUTDOWN VALVE POSITION	POST- ACCIDENT POSITION	POWER FAILURE VALVE POSITION	ISOLATION SIGNAL(5)	DIVERSE ISOLATION SIGNAL(12)	VALVE CLOSURE TIME(6)	POWER SOURCE(7)	REMARKS
(37)	No	12"	Flow	-	0	0	0	-	-	-	-	-	
(40)	No	12"	Flow	-	0	0	0	-	-	-	-	-	
(40)	No	12"	Flow	-	0	0	0	-	-	-	-	-	
(40)	No	12"	Flow	-	0	0	0	-	-	-	-	-	
(41)	No	7"	AC Motor	Manual	0	0	0	AS IS	RM	-	30 sec	A	
(40)	No	12"	Flow	-	0	0	0	-	-	-	-	-	
(40)	No	12"	Flow	-	0	0	0	-	-	-	-	-	
(37)	No	12" 4'-7"	Flow	-	0	0	0	-	-	-	-	-	
(37)	No	3'-4"	Flow	-	0	0	0	-	-	-	-	-	
(37)	No	12"	Flow	-	0	0	0	-	-	-	-	-	
(37)	No	3'-4"	Flow	-	0	0	0	-	-	-	-	-	
(37)	No	12"	Flow	-	0	0	0	-	-	-	-	-	
(37)	No	4'-6"	Flow	-	0	0	0	-	-	-	-	-	
(37)	No	2'-5"	Flow	-	0	0	0	-	-	-	-	-	
(37)	No	4'-2"	Flow	-	0	0	0	-	-	-	-	-	

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TABLE 6.2-17 (Cont'd)

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left half

CONTAINMENT PENETRATION NUMBER	LINE ISOLATED	FLUID	LINE SIZE (in.)	NRC GENERAL DESIGN CRITERION	ESF SYSTEM	ESSENTIAL SYSTEM	VALVE NUMBER	VALVE TYPE (1)	VALVE LOCATION	VALVE ARRANGEMENT (2)	TYPE C TEST	LENGTH OF PIPE FROM CONT. TO OUTSIDE VALVES	PRIMARY METHOD OF ACTUATION (3)
X-33A-2	Instrumen- tation- pressure below core plate	Water	1	55	-	-	F061	XFC	Outside	(37)	No	12"	Flow
X-33B	Instrumen- tation- RCIC steam flow	Water	1	55	-	-	F044A,C	XFC	Outside	(40)	No	12"	Flow
X-34A	Instrumen- tation- main steam line C flow	Water	1	55	-	-	F070C F073C	XFC XFC	Outside Outside	(40)	No	12" 12"	Flow Flow
X-34B-1	Instrumen- tation - recirc flow	Water	1	55	-	-	F009C F009D F010C F010D	CK CK CK CK	Outside Outside Outside Outside	(40) (40)	No No	18" 2'-9" 2'-9" 3'-6"	Flow Flow Flow Flow
X-34B-2	Instrumen- tation - recirc flow	Water	1	55	-	-							
X-35A	TIP purge	Gas	1	56	No No	No No	131 1056	GB CK	Outside Inside	(46)	Yes	0"	Comp air Flow
X-35C-6	TIP drives	Gas	3/8	56	No No	No No	140A-E 141A-E	XP BL	Outside Outside	(6)	Yes	16" 8"	Explosion AC coil
X-37A-D	CRD insert	Water	1	55	Yes Yes	Yes Yes	- -	BLCK HCU	Inside Outside	(47)	No	- -	- -
X-38A-D	CRD withdraw	Water	3/4	55	Yes Yes Yes Yes	Yes Yes Yes Yes	- F180 F181 F010 F011	HCU GB GB GB GB	Outside Outside Outside Outside Outside	(47)	No Yes	- Later Later Later Later	- Comp air Comp air Comp air Comp air
X-39A,B	Containment spray	Water	16	56	Yes Yes	Yes Yes	F021A,B F016A,B	GT GT	Outside Outside	(25)	Yes	12" 8'-10"	AC motor AC motor
X-40A	Instrumen- tation - jet pump flow	Water	1	55	- -	- -	F059L,R F059N	XFC XFC	Outside Outside	(37)	No	12" 4'-7"	Flow Flow

make into separate
entries

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TABLE 6.2-17 (Cont'd)

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VALVE RANGEMENT(2)	TYPE C TEST	LENGTH OF PIPE FROM CONT. TO OUTSIDE VALVES	PRIMARY METHOD OF ACTUATION(3)	SECONDARY METHOD OF ACTUATION	NORMAL VALVE POSITION(4)	SHUTDOWN VALVE POSITION	POST-ACCIDENT POSITION	POWER FAILURE VALVE POSITION	ISOLATION SIGNAL(5)	DIVERSE ISOLATION SIGNAL(12)	VALVE CLOSURE TIME(6)	POWER SOURCE(7)	REMARKS
(37)	No	12"	Flow	-	0	0	0	-	-	-	-	-	
(40)	No	12"	Flow	-	0	0	0	-	-	-	-	-	
(40)	No	12" 12"	Flow Flow	- -	0 0	0 0	0 0	- -	- -	- -	- -	- -	
(40)	No	18" 2'-9" 2'-9" 3'-6"	Flow Flow Flow Flow	- - - -	0 0 0 0	0 0 0 0	0 0 0 0	- - - -	- - - -	- - - -	- - - -	- - - -	
(46)	Yes	0"	Comp air Flow	Spring -	0 0	C C	C C	C C	B,H,S	Yes	4.4 sec	B	
(6)	Yes	16" 8"	Explosion AC coil	- Spring	0 C	0 C	0 C	AS IS C	RM B,H	- Yes	-	N N	(10) (10)
(47)	No	-	-	-	-	-	-	-	-	-	-	-	(11) (11)
(47)	No	-	-	-	-	-	-	-	-	-	-	-	(11)
(47)	Yes	Later Later Later Later	Comp air Comp air Comp air Comp air	Spring Spring Spring Spring	0 0 0 0	0 0 0 0	C C C C	C C C C	- - - -	NA NA NA NA	Later Later Later Later	N N N N	(11) (11) (11) (11)
(25)	Yes	12" 8'-10"	AC motor AC motor	Manual Manual	C C	C C	C C	AS IS AS IS	RM RM	NA NA	Standard Standard	A,B A,B	
(37)	No	12" 4'-7"	Flow Flow	- -	0 0	0 0	0 0	- -	- -	- -	- -	- -	

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TABLE 6.2-17 (Cont'd)

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CONTAINMENT PENETRATION NUMBER	LINE ISOLATED	FLUID	LINE SIZE (in.)	NRC GENERAL DESIGN CRITERION	ESF SYSTEM	ESSENTIAL SYSTEM	VALVE NUMBER	VALVE TYPE(1)	VALVE LOCATION	VALVE ARRANGEMENT(2)	TYPE C TEST	LENGTH OF PIPE FROM CONT. TO OUTSIDE VALVES	PRIMARY METHOD OF ACTUATION(3)
X-40B	Instrumentation - jet pump flow	Water	1	55	-	-	F059G F051A F053A	XFC XFC XFC	Outside Outside Outside	(37)	No	12" 3'-4" 12"	Flow Flow Flow
X-40C	Instrumentation - jet pump flow	Water	1	55	-	-	F059A,E F059C	XFC XFC	Outside Outside	(37)	No	12" 4'-7"	Flow Flow
X-40D - 1	Instrumentation - pressure below core plate	Water	1	55	-	-	F057	XFC	Outside	(37)	No	12"	Flow
X-40D - 2	Instrumentation - RMCU flow	Water	1	55	-	-	170 171	XFC XFC	Outside Outside	(37)	No	Later Later	Flow Flow
X-40E	Instrumentation - drywell pressure	Gas	1	56	-	-	1470	GB	Outside	(41)	No	12"	AC motor
X-40F - 1	Instrumentation - RCIC steam flow	Steam	1	55	-	-	F0448,D	XFC	Outside	(40)	No	12"	Flow
X-40F - 2	Instrument gas suction	Gas	1	56	No No	No No	101 102	GB GB	Inside Outside	(4)	Yes	- 8"	AC motor Comp Air
X-40G - 1	ILRT data acquisition	Gas	3/4	56	No No	No No	1057 1058	GB GB	Outside Outside	(31)	Yes	7" 23"	Manual Manual
X-40G - 2	ILRT data acquisition	Gas	3/4	56	No No	No No	1071 1070	GB GB	Outside Outside	(31)	Yes	7" 2'-10"	Manual Manual
X-40H - 1	Instrument gas supply	Gas	1	56	No No	No No	1005A 129A	CK GB	Inside Outside	(22)	Yes	- 13"	Flow Comp air

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left half

TABLE 6.2-17 (Cont'd)

CONTAINMENT PENETRATION NUMBER	LINE ISOLATED	FLUID	LINE SIZE (in.)	NRC GENERAL DESIGN CRITERION	ESF SYSTEM	ESSENTIAL SYSTEM	VALVE NUMBER	VALVE TYPE(1)	VALVE LOCATION	VALVE ARRANGEMENT(2)	TYPE C TEST	LENGTH OF PIPE FROM CONT. TO OUTSIDE VALVES	PRIMARY METHOD OF ACTUATION(3)
X-40H-2	Instrumen- tation- recirc pump cooler	Water	1	56	-	-	156B 157B	XFC XFC	Outside Outside	(44)	No	12" 12"	Flow Flow
X-41-1	Instrumen- tation - RMCU flow	Water	1	55	-	-	102A 102B	XFC XFC	Outside Outside	(40)	No	2'-5" 13"	Flow Flow
X-41-2	Instrumen- tation - LPCI <i>A'dP</i>	Water	1	55	-	-	103A	XFC	Outside	(40)	No	13"	Flow
X-42	Standby liquid control	Sodium Benta- borate solution	2	55	Yes Yes	Yes Yes	F007 F008A	CK SCX	Inside Outside	(10)	Yes	- 0"	Flow Flow
X-43A	Instrumen- tation - recirc loop A WP	Water	1	55	-	-	F040A,C	XFC	Outside	(40)	No	2'-3"	Flow
X-43B	Main steam sample	Steam	3/4	55	No No	No No	F084 F085	GB GB	Inside Outside	(9)	Yes	- 2'-5"	Inst gas Comp air
X-44	Alternate RMCU return	Water	4	55	No No No	No No -	1017 1016 112	GB GB PSV	Inside Outside Outside	(14)	Yes	- 20" 7'-5"	Manual Manual Water Pres
X-45A-D	LPCI	Water	12	55	Yes Yes Yes	Yes Yes Yes	142A,B,C,D F041A,B, C,D F017A,B, C,D	GB TCX GT	Inside Inside Outside	(11)	Yes	- - 0"	Inst gas Flow AC motor

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TABLE 6.2-17 (Cont'd)

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VALVE MANAGEMENT(2)	TYPE C TEST	LENGTH OF PIPE FROM CONT. TO OUTSIDE VALVES	PRIMARY METHOD OF ACTUATION(3)	SECONDARY METHOD OF ACTUATION	NORMAL VALVE POSITION(4)	SHUTDOWN VALVE POSITION	POST- ACCIDENT POSITION	POWER FAILURE VALVE POSITION	ISOLATION SIGNAL(5)	DIVERSE ISOLATION SIGNAL(12)	VALVE CLOSURE TIME(6)	POWER SOURCE(7)	REMARKS
(37)	No	12" 3'-4"	Flow Flow Flow	-	0	0	0	-	-	-	-	-	
(37)	No	12" 6'-7"	Flow Flow	-	0	0	0	-	-	-	-	-	
(37)	No	12"	Flow	-	0	0	0	-	-	-	-	-	
(37)	No	Later Later	Flow Flow	-	0	0	0	-	-	-	-	-	
(41)	No	12"	AC motor	Manual	0	0	0	AS IS	RM	-	30 sec	D	
(40)	No	12"	Flow	-	0	0	-	-	-	-	-	-	
(4)	Yes	8"	AC motor Comp Air	Manual Spring	0	0	C	AS IS	C, H, S C, H, S	Yes Yes	30 sec 4.4 sec	A B	
(31)	Yes	7" 23"	Manual Manual	-	C	C	C	-	-	-	-	-	
(21)	Yes	7" 2'-10"	Manual Manual	-	C	C	C	-	-	-	-	-	
(22)	Yes	13"	Flow Comp air	Spring	0	0	C	C	C, H, S	Yes	4.4 sec	A	

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TABLE 6.2-17 (Cont'd)

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(Page 8 of 20)

VALVE ANGEMENT(2)	TYPE C TEST	LENGTH OF PIPE FROM CONT. TO OUTSIDE VALVES	PRIMARY METHOD OF ACTUATION(3)	SECONDARY METHOD OF ACTUATION	NORMAL VALVE POSITION(4)	SHUTDOWN VALVE POSITION	POST- ACCIDENT POSITION	POWER FAILURE VALVE POSITION	ISOLATION SIGNAL(5)	DIVERSE ISOLATION SIGNAL(12)	VALVE CLOSURE TIME(6)	POWER SOURCE(7)	REMARKS
(44)	No	12" 12"	Flow Flow	- -	O O	O O	O O	- -	- -	- -	- -	- -	
(40)	No	2'-5" 13"	Flow Flow	- -	O O	O O	O O	- -	- -	- -	- -	- -	
(40)	No	13"	Flow	-	O	O	O	-	-	-	-	-	
(10)	Yes	- 0"	Flow Flow	- AC motor	C O	C O	C O	- -	- RM	- NA	- Standard	- A	
(40)	No	2'-3"	Flow	-	O	O	O	-	-	-	-	-	
(9)	Yes	- 2'-6"	Inst gas Comp air	Spring Spring	C C	C C	C C	C C	B,D B,D	- -	- -	- -	
(14)	Yes	- 20" 7'-6"	Manual Manual Water Pressure	- - -	C C C	O O C	C C C	- - -	- - -	- -	- -	- -	
(11)	Yes	- - 0"	Inst gas Flow AC motor	Spring Inst gas Manual	C C C	C C C	C O O	C - AS IS	- - RM	- -	4.4 sec - 24 sec	A,B,C,D A,B,C,D A,B,C,D	

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This change
is incorporated
into LDCN
FS-743

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TABLE 6.2-17 (Cont'd)

CONTAINMENT PENETRATION NUMBER	LINE ISOLATED	FLUID	LINE SIZE (in.)	MRC GENERAL DESIGN CRITERION	ESF SYSTEM	ESSENTIAL SYSTEM	VALVE NUMBER	VALVE TYPE (1)	VALVE LOCATION	VALVE ARRANGEMENT (2)	TYPE C TEST	LENGTH OF PIPE FROM CONT. TO OUTSIDE VALVES	PRIMARY METHOD OF ACTUATION (3)
X-47	Instrumen- tation - RMCU flow	Water	1	55	-	-	102D	XFC	Outside	(40)	No	11"	Flow
X-43A - 1	Instrumen- tation - RPV level	Water	1	55	-	-	F065B F047B	XFC XFC	Outside Outside	(37)	No	2'-6" 21"	Flow Flow
X-48A - 2	Instrumen- tation - core spray WP	Water	1	55	-	-	F018B	XFC	Outside	(40)	No	12"	Flow
X-48B	Instrumen- tation - RPV level	Water	1	55	-	-	F065A F047A	XFC XFC	Outside Outside	(37)	No	21" 2'-6"	Flow Flow
X-49A,B	Instrumen- tation - main steam line A&B flow	Water/ Steam	1	55	-	-	F071A,B F072A,B	XFC XFC	Outside Outside	(40)	No	12" 12"	Flow Flow
X-50A - 1	Instrumen- tation - dry- well pressure	Gas	1	56	-	-	147B	GB	Outside	(41)	No	7"	AC motor
X-50A - 2	Instrumen- tation - recirc flow	Water	1	55	-	-	F011A F011B	XFC XFC	Outside Outside	(40) (40)	No No	2'-9" 18"	Flow Flow
X-50A - 3	Instrumen- tation - recirc flow	Water	1	55	-	-	F012A F012B	XFC XFC	Outside Outside	(40) (40)	No No	2'-9" 18"	Flow Flow
X-50B	Instrumen- tation - recirc pump seal pressure	Water	1	55	-	-	F004A	XFC	Outside	(45)	No	4'-11"	Flow
X-50B	Instrumen- tation - recirc pump cooler flow	Water	1	56	-	-	156A 157A	XFC XFC	Outside Outside	(44)	No	22" 20"	Flow Flow

Make into two
separate entries

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TABLE 6.2-17 (Cont'd)

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VALVE ARRANGEMENT(2)	TYPE C TEST	LENGTH OF PIPE FROM CONT. TO OUTSIDE VALVES	PRIMARY METHOD OF ACTUATION(3)	SECONDARY METHOD OF ACTUATION	NORMAL VALVE POSITION(4)	SHUTDOWN VALVE POSITION	POST- ACCIDENT POSITION	POWER FAILURE VALVE POSITION	ISOLATION SIGNAL(5)	DIVERSE ISOLATION SIGNAL(12)	VALVE CLOSURE TIME(6)	POWER SOURCE(7)	REMARKS
(40)	No	11"	Flow	-	0	0	0	-	-	-	-	-	
(37)	No	2'-6" 21"	Flow Flow	-	0 0	0 0	0 0	-	-	-	-	-	
(40)	No	12"	Flow	-	0	0	0	-	-	-	-	-	
(37)	No	21" 2'-6"	Flow Flow	-	0 0	0 0	0 0	-	-	-	-	-	
(40)	No	12" 12"	Flow Flow	-	0 0	0 0	0 0	-	-	-	-	-	
(41)	No	7"	AC motor	Manual	0	0	0	AS IS	RM	-	30 sec	B	
(40)	No	2'-9" 18" 2'-9" 18"	Flow Flow Flow Flow	-	0 0 0 0	0 0 0 0	0 0 0 0	-	-	-	-	-	
(45)	No	4'-11"	Flow	-	0	0	0	-	-	-	-	-	
(44)	No	22" 20"	Flow Flow	-	0 0	0 0	0 0	-	-	-	-	-	

Place on same line

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TABLE 6.2-17 (Cont'd)

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Make Into Two Separate Entries

CONTAINMENT PENETRATION NUMBER	LINE ISOLATED	FLUID	LINE SIZE (in.)	NRC GENERAL DESIGN CRITERION	ESF SYSTEM	ESSENTIAL SYSTEM	VALVE NUMBER	VALVE TYPE(1)	VALVE LOCATION	VALVE ARRANGEMENT(2)	TYPE C TEST	LENGTH OF PIPE FROM CONT. TO OUTSIDE VALVES	PRIMARY METHOD OF ACTUATION(3)
X-51A	Instrumentation - recirc line flow	Water	1	55	-	-	F009A,8 F010A,8	XFC XFC	Outside Outside	(40)	No	18" 18"	Flow Flow
X-51B	Instrumentation - jet pump flow	Water	1	55	-	-	F059T F051C F053C	XFC XFC XFC	Outside Outside Outside	(37)	No	12" 3'-4" 12"	Flow Flow Flow
X-52A	Instrumentation - main steam line B flow	Water	1	55	-	-	F070B F073B	XFC XFC	Outside Outside	(40)	No	12" 12"	Flow Flow
X-52B-1	Instrumentation - recirc line flow	Water	1	55	-	-	F011C F011D F012C F012D	XFC XFC XFC XFC	Outside Outside Outside Outside	(40)	No	2'-9" 18" 2'-3" 18"	Flow Flow Flow Flow
X-52B-2	Instrumentation - recirc line flow	Water	1	55	-	-							
X-53	Chilled water supply "A"	Water	8	56	No No No	No No No	128 120A 125A	GT GT GT	Outside Outside Outside	(13)	Yes	0" 63'-10" 63'-10"	AC motor AC motor AC motor
X-54	Chilled water return "A"	Water	8	56	No No No	No No No	129 121A 124A	GT GT GT	Outside Outside Outside	(13)	Yes	0" 67'-0" 67'-0"	AC motor AC motor AC motor
X-55	Chilled water supply "B"	Water	8	56	No No No	No No No	122 120B 125B	GT GT GT	Outside Outside Outside	(13)	Yes	0" 46'-10" 46'-10"	AC motor AC motor AC motor
X-56	Chilled water return "B"	Water	8	56	No No No	No No No	123 121B 124B	GT GT GT	Outside Outside Outside	(13)	Yes	0" 37'-2" 37'-2"	AC motor AC motor AC motor
X-57	Instrumentation - RMCU flow	Water	1	55	-	-	102C	XFC	Outside	(40)	No	11"	Flow
X-58A	Instrumentation - recirc loop B	Water	1	55	-	-	F040B	XFC	Outside	(40)	No	14"	Flow

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TABLE 6.2-17 (Cont'd)

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VALVE ARRANGEMENT(2)	TYPE C TEST	LENGTH OF PIPE FROM CONT. TO OUTSIDE VALVES	PRIMARY METHOD OF ACTUATION(3)	SECONDARY METHOD OF ACTUATION	NORMAL VALVE POSITION(4)	SHUTDOWN VALVE POSITION	POST- ACCIDENT POSITION	POWER FAILURE VALVE POSITION	ISOLATION SIGNAL(5)	DIVERSE ISOLATION SIGNAL(12)	VALVE CLOSURE TIME(6)	POWER SOURCE(7)	REMARKS
(40)	No	18" 18"	Flow Flow	- -	0 0	0 0	0 0	- -	- -	- -	- -	- -	
(37)	No	12" 3'-4" 12"	Flow Flow Flow	- - -	0 0 0	0 0 0	0 0 0	- - -	- - -	- - -	- - -	- - -	
(40)	No	12" 12"	Flow Flow	- -	0 0	0 0	0 0	- -	- -	- -	- -	- -	
(40)	No	2'-9" 18" 2'-3" 18"	Flow Flow Flow Flow	- - - -	0 0 0 0	0 0 0 0	0 0 0 0	- - - -	- - - -	- - - -	- - - -	- - - -	
(13)	Yes	0" 63'-10" 63'-10"	AC motor AC motor AC motor	Manual Manual Manual	0 0 C	0 0 C	C C C	AS IS AS IS AS IS	C,H RM RM	Yes No No	Standard Standard Standard	B A A	(16) (16)
(13)	Yes	0" 67'-0" 67'-0"	AC motor AC motor AC motor	Manual Manual Manual	0 0 C	0 0 C	C C C	AS IS AS IS AS IS	C,H RM RM	Yes No No	Standard Standard Standard	B A A	(16) (16) (16)
(13)	Yes	0" 46'-10" 46'-10"	AC motor AC motor AC motor	Manual Manual Manual	C 0 C	C 0 C	C C C	AS IS AS IS AS IS	C,H RM RM	Yes No No	Standard Standard Standard	B A A	(16) (16) (16)
(13)	Yes	0" 37'-2" 37'-2"	AC motor AC motor AC motor	Manual Manual Manual	C 0 C	C 0 C	C C C	AS IS AS IS AS IS	C,H RM RM	Yes No No	Standard Standard Standard	B A A	(16) (16) (16)
(40)	No	11"	Flow	-	0	0	0	-	-	-	-	-	
(40)	No	14"	Flow	-	0	0	0	-	-	-	-	-	

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side

TABLE 6.2-17 (Cont'd)

X-61-2	Recirc pump seal purge	Water	1	56	No	No	1004B 103B	CK XFC	Inside Outside	(45)	Yes	- 20"	Flow Flow
CONTAINMENT PENETRATION NUMBER	LINE ISOLATED	FLUID	LINE SIZE (in.)	NRC GENERAL DESIGN CRITERION	ESF SYSTEM	ESSENTIAL SYSTEM	VALVE NUMBER	VALVE TYPE (1)	VALVE LOCATION	VALVE ARRANGEMENT (2)	TYPE C TEST	LENGTH OF PIPE FROM CONT. TO OUTSIDE VALVES	PRIMARY METHOD OF ACTUATION (3)
X-61-1	Recirc pump seal purge	Water	1	56	No	No	1004A 103A	CK XFC	Inside Outside	(45)	Yes	- 20"	Flow Flow
X-62	H ₂ /O ₂ sample return; drywell purge makeup	Gas	1	56	Yes No Yes Yes Yes	Yes No Yes Yes Yes	150 116 159 190 191	GB GB GB GB GB	Outside Outside Outside Outside Outside	(12)	Yes	3'-3" 6'-6" 15'-9" Later Later	AC coil AC motor AC coil AC coil AC coil
X-63-1	Instrumentation-recirc loop <i>18' dP</i>	Water	1	55	-	-	F0400	XFC	Outside	(40)	No	3'-4"	Flow
X-63-2	Instrumentation-recirc pump seal pressure	Water	1	55	-	-	F0048 F0038	XFC XFC	Outside Outside	(45)	No	12" 12"	Flow Flow
X-65A,B	Instrumentation-RPV pressure	Water	1	55	-	-	F0438 F049A	XFC XFC	Outside Outside	(37)	No	14" 14"	Flow Flow
X-66A-1	Instrumentation-RPV level	Water	1	55	-	-	F0450	XFC	Outside	(37)	No	13"	Flow
X-66A-2	Instrumentation-LPCI <i>18' dP</i>	Water	1	55	-	-	102D 103D	XFC XFC	Outside Outside	(40)	No	13" 13"	Flow Flow
X-66B-1	Instrumentation-RPV level	Water	1	55	-	-	F045A	XFC	Outside	(37)	No	14"	Flow
X-66B-2	Instrumentation-LPCI <i>18' dP</i>	Water	1	55	-	-	102A 103C	XFC XFC	Outside Outside	(40)	No	12"	Flow
X-67A	Instrumentation-RPV level; RPV pressure	Water	1	55	-	-	F041 F043A F049B	XFC XFC XFC	Outside Outside Outside	(37)	No	11" 12" 13"	Flow Flow Flow

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INSERT new pens X-67-B-1 & X-67-B-2 from attached sheet.

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TABLE 6.2-17 (Cont'd)

(45)	Yes	20"	Flow Flow	-	0	C 0	C 0	-	-	-	-	-	-
VALVE RANGEMENT(2)	TYPE C TEST	LENGTH OF PIPE FROM CONT. TO OUTSIDE VALVES	PRIMARY METHOD OF ACTUATION(3)	SECONDARY METHOD OF ACTUATION	NORMAL VALVE POSITION(4)	SHUTDOWN VALVE POSITION	POST- ACCIDENT POSITION	POWER FAILURE VALVE POSITION	ISOLATION SIGNAL(5)	DIVERSE ISOLATION SIGNAL(12)	VALVE CLOSURE TIME(6)	POWER SOURCE(7)	REMARKS
(45)	Yes	20"	Flow Flow	-	0	C 0	C 0	-	-	-	-	-	
(12)	Yes	3'-3" 6'-6" 15'-9" Later Later	AC coil AC motor AC coil AC coil AC coil	- Manual	0 C 0 0 0	0 C 0 0 0	0 C 0 0 0	C AS IS C C C	B,H,R B,H,R B,H,R B,H,R B,H,R	NA Yes NA NA NA	2 sec 30** sec 2 sec 2 sec 2 sec	B D D C A	
(40)	No	3'-4"	Flow	-	0	0	0	-	-	-	-	-	
(45)	No	12" 12"	Flow Flow	-	0 0	0 0	0 0	-	-	-	-	-	
(37)	No	14" 14"	Flow Flow	-	0 0	0 0	0 0	-	-	-	-	-	
(37)	No	13"	Flow	-	0	0	0	-	-	-	-	-	
(40)	No	13" 13"	Flow Flow	-	0 0	0 0	0 0	-	-	-	-	-	
(37)	No	14"	Flow	-	0	0	0	-	-	-	-	-	
(40)	No	12"	Flow	-	0	0	0	-	-	-	-	-	
(37)	No	13"	Flow	-	0	0	0	-	-	-	-	-	
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(37)	No	13"	Flow Flow Flow	-	0	0	0	-	-	-	-	-	

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Insert at bottom of Pg 11 of 20

CONTAINMENT PENETRATION NUMBER	LINE ISOLATED	FLUID	LINE SIZE (in.)	NRC GENERAL DESIGN CRITERION	ESF SYSTEM	ESSENTIAL SYSTEM	VALVE NUMBER	VALVE TYPE (1)	VALVE LOCATION	VALVE ARRANGEMENT (2)	TYPE C TEST
--------------------------------------	------------------	-------	--------------------	------------------------------------	---------------	---------------------	-----------------	-------------------	-------------------	--------------------------	----------------

X-678-1	Instrument - Water atom, RPV Pressure		1	SS	-	-	F043A	XFC	Outside	(37)	No
---------	---	--	---	----	---	---	-------	-----	---------	------	----

X-678-2	Instrument Water atom, RPV Level		1	SS	-	-	F041	XFC	Outside	(37)	No
---------	--	--	---	----	---	---	------	-----	---------	------	----

LEI-GTH OF
PIPE FROM
CONT. TO
OUTSIDE
VALVES

PRIMARY METHOD OF ACTUATION (3)	SECONDARY METHOD OF ACTUATION (4)	NORMAL VALVE POSITION (5)	SHUTDOWN VALVE POSITION	POST- ACCIDENT POSITION	POWER FAILURE VALVE POSITION	DIVERSE ISOLATION SIGNAL (8)	ISOLATION SIGNAL (9)	VALVE CLOSURE TIME (6)	POWER SOURCE (7)	REMARKS
---------------------------------------	---	---------------------------------	-------------------------------	-------------------------------	---------------------------------------	------------------------------------	-------------------------	------------------------------	---------------------	---------

12"	Flow	-	0	0	-	-	-	-	-	
-----	------	---	---	---	---	---	---	---	---	--

11"	Flow	-	0	0	-	-	-	-	-	
-----	------	---	---	---	---	---	---	---	---	--

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TABLE 6.2-17 (Cont'd)

CONTAINMENT PENETRATION NUMBER	LINE ISOLATED	FLUID	LINE SIZE (in.)	NRC GENERAL DESIGN CRITERION	ESF SYSTEM	ESSENTIAL SYSTEM	VALVE NUMBER	VALVE TYPE(1)	VALVE LOCATION	VALVE ARRANGEMENT(2)	TYPE C TEST	LENGTH OF PIPE FROM CONT. TO OUTSIDE VALVES	PRIMARY METHOD OF ACTUATION
X-102A	Instrumentation - Jet Pump Flow	Water	1	55	-	-	185A	XFC	Outside	(37)	No	Later	Flow
X-107	Instrumentation - Jet Pump Flow	Water	1	55	-	-	185B	XFC	Outside	(37)	No	Later	Flow
X-116	Standby liquid control	Sodium pentaborate solution	2	55	Yes Yes	Yes Yes	F007 F006B	CK SCK	Inside Outside	(10)	Yes	0"	Flow Flow
X-117B-1	Drywell radiation sampling supply and return	Gas	1	56	No No	No No	190-A,B 190-C,D	GB GB	Outside Outside	(23) (23)	Yes Yes	9'-4" 10'-2"	AC coil AC coil
X-117B-2	Drywell radiation sampling supply & return	Gas	1	56	No	No	109	BF	Outside	(7)	Yes	42'-9"	AC motor
X-201A	Suppression pool purge supply	Gas	20	56	No	No	147	BF	Outside			17'-5"	AC motor
					No	No	124	BF	Outside			13'-5"	Comp air
					Yes	Yes	131	BF	Outside			7'-9"	Comp air
					Yes	Yes	164	BF	Outside			8'-2"	AC motor
					Yes	Yes	121	BF	Outside			69'-11"	Comp air
X-202	Suppression pool purge exhaust	Gas	18	56	Yes Yes Yes No No No	No Yes Yes No No No	112 185 162 105 104 118	BF GB BF GB BF BF	Outside Outside Outside Outside Outside Outside	(15)	Yes	18'-6" 24'-6" 3'-10" 6'-10" 4'-0" 32'-11"	AC motor AC coil AC motor AC motor Comp air Comp air
X-203A-D	RHR pump suction	Water	24	56	Yes Yes Yes	Yes - -	F004A,B, C,D F030A,B F030C,D	GT PSV PSV	Outside Outside Outside	(16)	Yes	0"	AC motor
X-204A,B	RHR pump test and min flow	Water	18	56	Yes	Yes	125A,B	GT	Outside	(36)	Yes	0"	AC motor
X-205A,B	Suppression pool spray	Water	6	56	Yes	Yes	F027A,B	GB	Outside	(43)	Yes	0"	AC motor

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TABLE 6.2-17 (Cont'd)

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VALVE IDENTIFICATION(2)	TYPE C TEST	LENGTH OF PIPE FROM CONT. TO OUTSIDE VALVES	PRIMARY METHOD OF ACTUATION(3)	SECONDARY METHOD OF ACTUATION	NORMAL VALVE POSITION(4)	SHUTDOWN VALVE POSITION	POST-ACCIDENT POSITION	POWER FAILURE VALVE POSITION	ISOLATION SIGNAL(5)	DIVERSE ISOLATION SIGNAL(12)	VALVE CLOSURE TIME(6)	POWER SOURCE(7)	REMARKS
(37)	No	Later	Flow	-	0	0	0	-	-	-	-	-	
(37)	No	Later	Flow	-	0	0	0	-	-	-	-	-	
(10)	Yes	0"	Flow Flow	AC Motor	C 0	C 0	C 0	AS IS	RM	NA	Standard	B	
(23)	Yes	9'-4"	AC coil	-	0	C	C	C	B, H, R, S	Yes	2 sec	C, B	
(25)	Yes	10'-2"	AC coil	-	0	C	C	C	B, H, R, S	Yes	2 sec	C, B	
(7)	Yes	42'-9"	AC motor	Manual	C	C	C	AS IS	B, H, R, W, X, U, S	Yes	6** sec	B	(18)
		17'-5"	AC motor	Manual	C	C	C	AS IS	B, H, R, W, X, U, S	Yes	6** sec	B	(18)
		13'-5"	Comp air	Spring	C	C	C	C	B, H, R, W, X, U, S	Yes	5** sec	A	(18)
		7'-9"	Comp air	Spring	C	C	C	C	B, H, R, W, X, U, S	Yes	5** sec	A	(18)
		8'-2"	AC motor	Manual	C	C	C	AS IS	B, H, R, S	NA	6 sec	D	(18)
		69'-11"	Comp air	Spring	C	C	C	C	B, H, R, W, X, U, S	NA	5** sec	A	(18)
(15)	Yes	18'-6"	AC motor	Manual	C	0	0	AS IS	B, H, R, W, X, U, S	NA	6** sec	A	(18)
		24'-6"	AC coil	-	0	0	0	C	B, H, R, S	NA	2 sec	C	(18)
		3'-10"	AC motor	Manual	C	C	C	AS IS	B, H, R, S	NA	6 sec	C	(18)
		6'-10"	AC motor	Manual	C	C	C	AS IS	B, H, R, S	NA	6 sec	C	(18)
		4'-0"	Comp air	Spring	C	0	C	C	B, H, R, W, X, U, S	Yes	15** sec	B	(18)
		32'-11"	Comp air	Spring	C	C	C	C	B, H, R, W, X, U, S	Yes	5** sec	B	(18)
(16)	Yes	0"	AC motor	Manual	0	0	0	AS IS	RM	NA	Standard	A, B, C, D	
		46'-6"	Water press.	-	C	C	C	-	-	-	-	-	
		35'-6"	Water press.	-	C	C	C	-	-	-	-	-	
36)	Yes	0"	AC motor	Manual	0	0	0	AS IS	RM	NA	Standard	A, B	
43)	Yes	0"	AC motor	Manual	C	C	C	AS IS	C, S	NA	30 sec	A, B	

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TABLE 6.2-17 (Cont'd)

CONTAINMENT PENETRATION NUMBER	LINE ISOLATED	FLUID	LINE SIZE (in.)	NRC GENERAL DESIGN CRITERION	ESF SYSTEM	ESSENTIAL SYSTEM	VALVE NUMBER	VALVE TYPE (1)	VALVE LOCATION	VALVE ARRANGEMENT (2)	TYPE C TEST	LENGTH OF PIPE FROM CONT. TO OUTSIDE VALVES	PRIMARY METHOD OF ACTUATION
X-206A-D	CS pump suction	Water	16	56	Yes	Yes	F001A,B, C,D	GT	Outside	(42)	Yes	0"	AC motor
X-207A,B	CS pump test and flush	Water	10	56	Yes	No	F015A,B	GB	Outside	(24)	Yes	0"	AC motor
X-208B	CS pump min flow	Water	4	56	Yes	Yes	F031B	GB	Outside	(24)	Yes	0"	AC motor
X-209	HPCI pump suction	Water	16	56	Yes	Yes	F042	GT	Outside	(42)	Yes	0"	DC motor
X-210	HPCI turbine exhaust	Water	12	56	Yes	Yes	F072	GT	Outside	(24)	Yes	0"	DC motor
X-212	HPCI pump test and flush	Water	4	56	Yes	No	F071	GT	Outside	(24)	Yes	0"	DC motor
X-214	RCIC pump suction	Water	6	56	Yes	Yes	F031	GT	Outside	(42)	Yes	0"	DC motor
X-215	RCIC turbine exhaust	Water	8	56	Yes	Yes	F060	GT	Outside	(24)	Yes	0"	DC motor
X-216	RCIC min flow	Water	2	56	Yes	Yes	F019	GB	Outside	(24)	Yes	0"	DC motor
X-217	RCIC vacuum pump disch	Air	2	56	No No	No No	F002 F028	SCK CK	Outside Outside	(34)	Yes	0" 80'-6"	Flow Flow
X-218	Instrument gas supply	Air	1	56	No No	No No	1001 135	CK GB	Inside Outside	(22)	Yes	3"	Flow Comp air
X219A,B	Instrumen- tation - suppression pool level	Water	2	56	- -	- -	120 121	GB GB	Outside Outside	(38)	No	0" 0"	AC motor AC motor

TABLE 6.2-17 (Cont'd)

CONTAINMENT PENETRATION NUMBER	LINE ISOLATED	FLUID	LINE SIZE (in.)	NRC GENERAL DESIGN CRITERION	ESF SYSTEM	ESSENTIAL SYSTEM	VALVE NUMBER	VALVE TYPE(1)	VALVE LOCATION	VALVE ARRANGEMENT(2)	TYPE C TEST	LENGTH OF PIPE FROM CONT. TO OUTSIDE VALVES	PRIMARY METHOD OF ACTUATION(3)
X-206A-D	CS pump suction	Water	16	56	Yes	Yes	F001A,B, C,D	GT	Outside	(42)	Yes	0"	AC motor
X-207A,B	CS pump test and flush	Water	10	56	Yes	No	F015A,B	GB	Outside	(24)	Yes	0"	AC motor
X-208B	CS pump min flow	Water	4	56	Yes	Yes	F031B	GB	Outside	(24)	Yes	0"	AC motor
X-209	HPCI pump suction	Water	16	56	Yes	Yes	F042	GT	Outside	(42)	Yes	0"	DC motor
X-210	HPCI turbine exhaust	Water	12	56	Yes	Yes	F072	GT	Outside	(24)	Yes	0"	DC motor
X-212	HPCI pump test and flush	Water	4	56	Yes	No	F071	GT	Outside	(24)	Yes	0"	DC motor
X-214	RCIC pump suction	Water	6	56	Yes	Yes	F031	GT	Outside	(42)	Yes	0"	DC motor
X-215	RCIC turbine exhaust	Water	8	56	Yes	Yes	F060	GT	Outside	(24)	Yes	0"	DC motor
X-216	RCIC min flow	Water	2	56	Yes	Yes	F019	GB	Outside	(24)	Yes	0"	DC motor
X-217	RCIC vacuum pump disch	Air	2	56	No No	No No	F002 F028	SCK CK	Outside Outside	(34)	Yes	0" 80'-6"	Flow Flow
X-218	Instrument gas supply	Air	1	56	No No	No No	1001 135	CK GB	Inside Outside	(22)	Yes	- 3"	Flow Comp air
X219A,B	Instrumen- tation - suppression pool level	Water	2	56	- -	- -	120 121	GB GB	Outside Outside	(38)	No	0" 0"	AC motor AC motor

TABLE 6.2-17 (Cont'd)

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VALVE ARRANGEMENT(2)	TYPE C TEST	LENGTH OF PIPE FROM CONT. TO OUTSIDE VALVES	PRIMARY METHOD OF ACTUATION(3)	SECONDARY METHOD OF ACTUATION	NORMAL VALVE POSITION(4)	SHUTDOWN VALVE POSITION	POST- ACCIDENT POSITION	POWER FAILURE VALVE POSITION	ISOLATION SIGNAL(5)	DIVERSE ISOLATION SIGNAL(12)	VALVE CLOSURE TIME(6)	POWER SOURCE(7)	REMARKS
(42)	Yes	0"	AC motor	Manual	O	O	O	AS IS	RM	NA	Standard	A,B,C,D	
(24)	Yes	0"	AC motor	Manual	C	C	C	AS IS	C,G	Yes	15 sec	A,B	
(24)	Yes	0"	AC motor	Manual	O	C	C	AS IS	LFCH	NA	30 sec	B	
(42)	Yes	0"	DC motor	Manual	O	O	O	AS IS	L,LA	NA	Standard	B	
(24)	Yes	0"	DC motor	Manual	O	O	O	AS IS	RM	NA	Standard	B	
(24)	Yes	0"	DC motor	Manual	C	C	C	AS IS	B,H	Yes	Standard	B	
(42)	Yes	0"	DC motor	Manual	C	C	O	AS IS	RM	NA	Standard	A	
(24)	Yes	0"	DC motor	Manual	O	O	O	AS IS	RM	NA	Standard	A	
(24)	Yes	0"	DC motor	Manual	C	C	C	AS IS	LFRC	NA	5 sec	A	
(34)	Yes	0" 80'-6"	Flow Flow	DC motor -	O C	O C	O C	- -	RM -	No -	Standard -	A -	(14)
(22)	Yes	- 3"	Flow Comp air	- Manual	O O	O O	C C	- -	S C,H,S	- Yes	- 4.4 sec	- B	
(38)	No	0" 0"	AC motor AC motor	Manual Manual	O O	O O	O O	AS IS AS IS	RM RM	- -	30 sec 30 sec	B B	

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TABLE 6.2-17 (Cont'd)

CONTAINMENT PENETRATION NUMBER	LINE ISOLATED	FLUID	LINE SIZE (in.)	MRC GENERAL DESIGN CRITERION	ESF SYSTEM	ESSENTIAL SYSTEM	VALVE NUMBER	VALVE TYPE(1)	VALVE LOCATION	VALVE ARRANGEMENT(2)	TYPE C TEST	LENGTH OF PIPE FROM CONT. TO OUTSIDE VALVES	PRIMARY METHOD OF ACTUATION(3)
X-220A	H ₂ /O ₂ sample return; wetwell purge makeup	Air	2	56	Yes	Yes	190	GB	Outside	(12)	Yes	10'-5"	AC coil
					Yes	Yes	191	GB	Outside			8'-5"	AC coil
					Yes	Yes	150	GB	Outside			14'-8"	AC motor
					Yes	Yes	159	GB	Outside			Later	AC coil
X-220B	Instrumentation - suppression pool pressure	Air	2	56	-	-	101	GB	Outside	(39)	No	0"	AC coil
X-221A	Wetwell H ₂ /O ₂ sample	Air	1	56	Yes	Yes	181	GB	Outside	(29)	Yes	2'-2"	AC coil
					Yes	Yes	141	GB	Outside			3'-11"	AC coil
					Yes	Yes	184	GB	Outside			3'-11"	AC coil
X-221B	Wetwell H ₂ /O ₂ sample	Air	1	56	Yes	Yes	183	GB	Outside	(23)	Yes	2'-5"	AC coil
					Yes	Yes	186	GB	Outside			3'-5"	AC coil
X-225	RHR vacuum relief	Air	6	56	Yes	No	130	GT	Outside	(30)	Yes	0"	AC motor
					No	No	131	GT	Outside			15'-8"	AC motor
X-226A,B	RHR min flow	Water	4	56	Yes	Yes	105A,B	GT	Outside	(35)	Yes	0"	AC motor
X-227	ILRT data acquisition	Air	3/4	56	No	No	1073	GB	Outside	(31)	Yes	18"	Manual
					No	No	1074	GB	Outside			2'-9"	Manual
X-228D	HPCI vacuum relief	Air	4	56	Yes	Yes	F095	GT	Outside	(17)	Yes	0"	AC motor
					Yes	Yes	F093	GT	Outside			12'-6"	AC motor
X-230B	Instrumentation - drywell sumps	Water	1-1/2	56	-	-	102	GB	Outside	(32)	No	3'-0"	AC motor
					-	-	112	GB	Outside			5"	AC motor
					-	-	132	GB	Outside			4"	AC motor
X-231A,B	Drywell sump drains	Water	4	56	No	No	110	GT	Outside	(28)	Yes	0"	Comp air
					No	No	130	GT	Outside			0"	Comp air
					No	No	111	GT	Outside			3'-5"	Comp air
					No	No	131	GT	Outside			3'-5"	Comp air

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TABLE 6.2-17 (Cont'd)

VALVE NUMBER(2)	TYPE C TEST	LENGTH OF PIPE FROM CONT. TO OUTSIDE VALVES	PRIMARY METHOD OF ACTUATION(3)	SECONDARY METHOD OF ACTUATION	NORMAL VALVE POSITION(4)	SHUTDOWN VALVE POSITION	POST- ACCIDENT POSITION	POWER FAILURE VALVE POSITION	ISOLATION SIGNAL(5)	DIVERSE ISOLATION SIGNAL(12)	VALVE CLOSURE TIME(6)	POWER SOURCE(7)	REMARKS
(12)	Yes	10'-5" 8'-5" 14'-8" Later Later	AC coil AC coil AC motor AC coil AC coil	- - Manual - -	O O C O O	O O C O O	O O C O O	C C AS IS C C	B,H,R,S B,H,R,S B,H,R,S B,H,R,S B,H,R,S	NA NA NA NA NA	2 sec 2 sec 30** sec 2 sec 2 sec	C A D B D	
(39)	No	0"	AC coil	-	O	O	O	C	RM	-	2 sec	A	
(29)	Yes	2'-2" 3'-11" 3'-11"	AC coil AC coil AC coil	- - -	O O O	O O O	O O O	C C C	B,H,R,S B,H,R,S B,H,R,S	NA NA NA	2 sec 2 sec 2 sec	B D C	
(23)	Yes	2'-5" 3'-5"	AC coil AC coil	- -	O O	O O	O O	C C	B,H,R,S B,H,R,S	NA NA	2 sec 2 sec	A C	
(30)	Yes	0" 15'-8"	AC motor AC motor	Manual Manual	O O	O O	C C	AS IS AS IS	B,H B,H	Yes Yes	Standard Standard	A B	
(35)	Yes	0"	AC motor	Manual	O	O	O	AS IS	RM	NA	Standard	C,U	
(31)	Yes	18" 2'-9"	Manual Manual	- -	C C	C C	C C	- -	- -	- -	- -	- -	
(17)	Yes	0" 12'-6"	AC motor AC motor	Manual Manual	O O	O O	C C	AS IS AS IS	H,LA H,LA	NA NA	Standard Standard	D A	(17)
(32)	No	3'-0" 4" 4"	AC motor AC motor AC motor	Manual Manual Manual	O O O	O O O	O O O	AS IS AS IS AS IS	RM RM RM	- - -	30 sec 30 sec 30 sec	A A A	
(28)	Yes	0" 0" 3'-5" 3'-5"	Comp air Comp air Comp air Comp air	Spring Spring Spring Spring	C C C C	C C C C	C C C C	C C C C	B,H B,H B,H B,H	Yes Yes Yes Yes	10 sec 10 sec 20 sec 20 sec	A A B B	

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TABLE 6.2-17 (Cont'd)

CONTAINMENT PENETRATION NUMBER	LINE ISOLATED	FLUID	LINE SIZE (in.)	NRC GENERAL DESIGN CRITERION	ESF SYSTEM	ESSENTIAL SYSTEM	VALVE NUMBER	VALVE TYPE(1)	VALVE LOCATION	VALVE ARRANGEMENT(2)	TYPE C TEST	LENGTH OF PIPE FROM CONT. TO OUTSIDE VALVES	PRIMARY METHOD OF ACTUATION
X-237	Suppression pool clean-up pump suction; level instrumentation	Water	6	56	No	No	127	GT	Outside	(26)	Yes	12"	AC motor
					No	No	128	GT	Outside			15'-11"	AC motor
					No	-	127	PSV	Outside		No	12"	Water pres
					-	-	H139	GB	Outside			3'-7"	AC motor
					-	-	S139	GB	Outside			4'-11"	AC cell
X-238	RHR relief valve discharge	Water	10	56	Yes	-	106B	PSV	Outside	(18)	Yes	38'-4"	Water pres
					Yes	No	F104B	GB	Outside			34'-10"	AC motor
					Yes	-	F055B	PSV	Outside			36'-3"	Water pres
					Yes	-	101B	PSV	Outside			32'-5"	Water pres
X-239	RHR relief valve discharge	Water	10	56	Yes	-	101A	PSV	Outside	(18)	Yes	31'-10"	Water pres
					Yes	-	F055A	PSV	Outside			28'-2"	Water pres
					Yes	-	106A	PSV	Outside			47'-0"	Water pres
					Yes	No	F103A	GB	Outside			36'-3"	AC motor
X-240	RHR relief valve discharge	Water	6	56	Yes	-	F097	PSV	Outside	(19)	Yes	39'-10"	Water pres
X-241	RCIC vacuum relief	Water	3	56	Yes	Yes	F084	GT	Outside	(17)	Yes	0"	AC motor
					Yes	Yes	F080	GT	Outside			5'-6"	AC motor
X-235	CS pump min flow	Water	4	56	Yes	Yes	F031A	GB	Outside	(24)	Yes	0"	AC motor
X-236	HPCI pump min flow	Water	4	56	Yes	Yes	F012	GB	Outside	(24)	Yes	0"	DC motor

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TABLE 6.2-17 (Cont'd)

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VALVE ARRANGEMENT(2)	TYPE C TEST	LENGTH OF PIPE FROM CONT. TO OUTSIDE VALVES	PRIMARY METHOD OF ACTUATION(3)	SECONDARY METHOD OF ACTUATION	NORMAL VALVE POSITION(4)	SHUTDOWN VALVE POSITION	POST- ACCIDENT POSITION	POWER FAILURE VALVE POSITION	ISOLATION SIGNAL(5)	DIVERSE ISOLATION SIGNAL(12)	VALVE CLOSURE TIME(6)	POWER SOURCE(7)	REMARKS
(26)	Yes	12"	AC motor	Manual	O	O	C	AS IS	B,H	Yes	Standard	A	
		15'-11"	AC motor	Manual	O	O	C	AS IS	B,H	Yes	Standard	C	
	No	3'-7"	Water press.	-	C	C	C	-	-	-	-	-	
	No	4'-11"	AC motor	Manual	O	O	O	AS IS	RM	-	30 sec	B	
			AC coil	-	O	O	O	C	RM	-	2 sec	A	
(18)	Yes	38'-4"	Water press.	-	C	C	C	-	-	-	-	-	
		34'-10"	AC motor	Manual	C	C	C	AS IS	C,G	Yes	12 sec	B	
		36'-3"	Water press.	-	C	C	C	-	-	-	-	-	
		32'-5"	Water press.	-	C	C	C	-	-	-	-	-	
(18)	Yes	31'-10"	Water press.	-	C	C	C	-	-	-	-	-	
		28'-2"	Water press.	-	C	C	C	-	-	-	-	-	
		47'-0"	Water press.	-	C	C	C	-	-	-	-	-	
		36'-3"	AC motor	Manual	C	C	C	AS IS	C,G	Yes	12 sec	A	
(19)	Yes	39'-10"	Water press.	-	C	C	C	-	-	-	-	-	
(17)	Yes	0"	AC motor	Manual	O	O	C	AS IS	H,KA	NA	25 sec.	A	(17)
		5'-6"	AC motor	Manual	O	O	C	AS IS	H,KA	NA	25 sec.	B	(17)
			Manual		O	C	C	AS IS	LFCH	NA	30sec	A	
			Manual		C	C	C	AS IS	LFHP	NA	10sec	B	

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TABLE 6.2-17 (Cont'd)

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info
only

(1) Valve Type:

Ball
 Butterfly
 Check
 Gate
 Globe
 Pressure relief
 Stop check
 Testable check
 Spring load piston-
 actuated check
 Explosive (shear)
 Excess flow check
 Ball check
 Hydraulic control unit

BL
 BF
 CK
 GT
 GB
 PSV
 SCK
 TCK
 SLPACK

 XP
 XPC
 BLCK
 HCU

(2) See Figure 6.2-36. Numbers in this column refer to details in the figure.

(3) AC motor operated valves required for isolation functions are powered from the ac standby power buses. DC operated isolation valves are powered from the station batteries.

(4) Normal valve position (open or closed) is the position during normal power operation of the reactor.

(5) Isolation Signal Codes

<u>Signal</u>	<u>Description</u>
A*	Reactor vessel level 3 trip (a scram occurs at this level also)
B*	Reactor vessel level 2 trip
C*	Reactor vessel level 1 trip (main steam line isolation occurs at this level)
D*	High radiation in main steam lines and vicinity

TABLE 6.2-17 (Cont'd)

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E*	Main steam line high flow
EA	Main steam line high pressure, high steam line leakage flow, low MSIV-LCS dilution air flow
F*	High temperature in main steam tunnel or in vicinity of main steam lines in turbine enclosure
G*	High drywell pressure and low reactor vessel pressure
H*	High drywell pressure
J*	Line break in RWCU system (high differential flow, high-temperature or high differential temperature in RWCU compartments)
K*	Break in RCIC steam line (high-temperature in pipe routing area, high temperature or high differential temperature in RCIC compartment, high steam flow), or high RCIC turbine exhaust diaphragm pressure
KA	Low RCIC steam supply pressure
L*	Break in HPCI steam line (high-temperature in pipe routing area, high temperature or high differential temperature in HPCI compartment, or high steam flow), or high HPCI turbine exhaust diaphragm pressure.
LA	Low HPCI steam supply pressure
LFHP	With HPCI pumps running, opens on low flow in associated pipe, closes when flow is above set point
LFRC	With RCIC pump running, opens on low flow in associated pipe, closes when flow is above set point
LFCH	With CS pump running, opens on low flow in associated pipe, closes when flow is above set point
LFCC	Steam supply valve fully closed or RCIC turbine stop valve fully closed

1A to only

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Note: This change
is incorporated in
LDCN # FS-714.

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TABLE 6.2-17 (Cont'd)

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The closure times for isolation valves in lines in which high-energy line breaks could occur are identified with a single asterisk. The closure times for isolation valves in lines which provide an open path from the containment to the environs are identified with a double asterisk.

(7) Power Source

Electrical Separation Source:

- A - Class IE electrical channel
- B - Class IE electrical channel
- C - Class IE electrical channel
- D - Class IE electrical channel
- W - Reactor protection system (RPS)
electrical separation channel
- X - RPS electrical separation channel
- Y - RPS electrical separation channel
- Z - RPS electrical separation channel
- N - Non-class IE

Closure times for the valves identified by a single or double asterisk are considered maximum closure times. Closure times for all other valves are nominal times.

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For explanation of Electrical Separation Channels, refer to Section 8.1.

- (8) The main steam isolation valve leakage control system (MSIV-LCS) valve will be manually opened following a LOCA. The signals that close the valve are main steamline high pressure, excessive leakage through the the inboard MSIV, or insufficient dilution air flow.
- (9) The spring-loaded piston, which is actuated by an isolation signal or a loss of power, will not close this valve against normal flow on loss of power from the normal direction.
- (10) The TIP drive guide tubes provide a path for the flexible drive cable of the TIP probes. The drive cable is automatically retracted on an isolation signal. When the drive cable is fully retracted, the ball valve closes. The shear valve is provided to isolate the guide tubes by cutting the cable if the drive cable cannot be withdrawn.

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~~With RHR pump running, opening on low flow in associated pipe, closes when flow is above set point~~

- M* Low differential pressure between the instrument gas line and the primary containment
- P* Low main steam line pressure at inlet to turbine (RUN mode only)
- Q* Low condenser vacuum and turbine stop valve in bypass mode or more than 90% open
- R* High radioactivity in ~~ventilation system~~ refueling floor ventilation exhaust ducts
- S* High radiation in the reactor enclosure
- T* Low differential pressure between the outside atmosphere and ~~either the containment or~~ refueling area.
- U* Low differential pressure between the outside atmosphere and the reactor enclosure
- V* High reactor pressure (shutdown cooling mode only)
- W* North stack effluent high radiation
- Y Standby liquid control system actuated or redundant reactivity control system actuated
- RM* Remote manual switch from control room (all power-operated isolation valves are capable of being operated remote-manually from the control room)

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

- (6) The standard minimum closing rate for automatic isolation gate valves is based on a nominal line size of 12 inches. Using the standard closing rate, a 12-inch line is isolated in 60 seconds. Conversion to closing time can be made on this basis using the actual size of the line in which the gate valve is installed.

TABLE 6.2-17 (Cont'd)

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- (11) The control rod drive (CRD) insert and withdraw lines can be isolated by solenoid valves outside containment. Air operated scram inlet and outlet valves are also provided. Leakage may occur through the scram outlet valves. A low leakage flowrate will be treated by the clean radwaste system. Excessive leakage will result in either automatic scram or operator initiated scram. When scram is complete, the scram discharge volume system is automatically isolated by the redundant vent and drain valves.
- (12) Only non-essential systems require diverse signals for automatic isolation. Therefore, this column is not applicable, (NA), for essential systems.
- (13) These valves are sealed closed whenever the reactor is critical and reactor pressure is greater than 600 psig. The valves are expected to be opened only in the following instances:
- a. Flushing of the condensate and feedwater systems during plant startup.
 - b. Reactor pressure vessel hydrostatic testing, which is conducted following each refueling outage prior to commencing plant startup.
- (14) Diverse isolation signals are not sensed as discussed in Section 6.2.4.3.1.
- (15) These valves are normally closed, will be open only during reactor shutdown, are interlocked to open only on low reactor pressure, and connect to a closed system outside containment. Therefore, closure times less than 60 seconds are not required.
- (16) Diverse, automatic isolation logic to be added by the end of the first refueling outage.
- (17) Both isolation signals required for valve closure
- (18) Isolation capability upon refueling floor high radiation (signal R in Note 5) will be added by the end of the first refueling outage

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