Consumers Power Company

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January 4, 1982

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Operating Reactors Branch No 5
Nuclear Reactor Regulation
US Nuclear Regulatory Commission
Washington, DC 20555

DOCKET 50-255 - LICENSE DPR-20
PALISADES PLANT - SEP TOPIC VI-4, CONTAINMENT ISOLATION SYSTEM

By letter dated June 9, 1981, the NRC transmitted a draft evaluation of Topic VI-4 for the Palisades Plant. Consumers Power Company's detailed comments on the staff evaluation were provided in a letter dated August 10, 1981. In early December, by a telephone conversation between SBrown, et.al., of the NRC and RAVincent, CPCo, several questions were raised concerning the information submitted in CPCo's August 10 letter. The following information is provided in response to those questions.

Attached is a revised table of containment penetrations which shows the isolation valve positions under various conditions and any automatic closure signals which are provided. This table has been modified to correct some apparent inconsistencies in previous versions, and to reflect changes in the plant which were made during the 1981 refueling outage. In addition, notes have been added to clearly define each of the symbols which appear in the table. This revised table should address most of the questions raised.

The other general question raised during the telephone conversation concerned the need for instrument or service air to maintain long term core cooling in a post-accident condition. The question was oriented toward the possible need to reposition containment isolation valves in this situation.

Post-accident long-term cooling has been discussed with the staff on numerous occasions over the past several years. The most recent CPCo actions were the installation of extensive modifications during the 1981 refueling outage, and the submission of the long-term cooling design report by CPCo letter of October 9, 1981.

With respect to the containment isolation valves, loss of instrument or service air will not jeopardize the ability of the plant to maintain long-term cooling. With respect to portions of other systems or piping needed for long-term cooling, some air-operated valves do exist which could affect preferred long-term cooling flow paths if air were lost (e.g. loss of air to CV-3025 and CV-3006 could prevent use of the shutdown cooling system flow path for long-term cooling following a postulated small break LOCA). Alternative methods exist, however, which in

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the aggregate provide a single failure proof means of assuring long-term cooling. For a more detailed discussion of the above, your attention is directed to CPCo letter of October 9, 1981. It whould be noted that long-term cooling is still an active issue under NRC review outside the SEP.

Robert A Vincent

Robert A Vincent
Senior Licensing Engineer

CC Administrator, Region III, USNRC
NRC Resident Inspector - Palisades

Attachments

TABLE 1

CONTAINMENT ISOLATION SYSTEM SEP REVIEW ITEMS
PLANT: PALISADES NDP UNIT #1

PENE-TRATION NO.	SYSTEM NAME AND SERVICE LINE SIZE	PENE CLASS NO.	VALVE IDENT. NUMBER	VALVE TYPE OR DESCRIPTION	LOCATION OC	LOCATION IC	POSITION NOR-MAL	POSITION SHUT DN	POSITION POST LOCA	POSITION PWR FAIL.	ESS-EN-TIAL	ACTUA-TION	REMARKS
1	Purge Air Supply (48"Ø)	A1	CV1807 CV1808 508VAS -	AO BUTF VLV AO BUTF VLV MAN GL TEST VLV TEST CONNECT	X X X X		NC NC LC CAP	O/C O/C C	C C C	C C -	N	CIS CIS -	Blank Flanged; Vent. Syst. Valves Presently Not Used in Modes 1-4
2	Main Stm Line (SGE50A) (36"Ø)	C1	CV0510 MOV0510A	POS CH'K VLV MO BYPASS VLV	X X		NO NC	C C	C C	C C	Y	LOW S/G PRESS RM	Loss of Air, CV-0510 Remains in Position Due to Cross Connections with High Press Air and Accumulators
3	Main Stm Line (SGE50B) (36"Ø)	C1	CV0501 MOV0501A	POS CH'K VLV MO BYPASS VLV	X X		NO NC	C C	C C	C C	Y	LOW S/G PRESS RM	Loss of Air, CV-0501 Remains in Position Due to Cross Connection with High Press Air and Accumulators
4	Purge Air Exhaust (48"Ø)	A1	CV1803 CV1805 CV1806 506VAS	AO BUTF VLV AO BUTF VLV AO BUTF VLV MAN GL TEST VLV	X X X X		NC NC NC LC	O/C O/C O/C C	C C C C	C C C -	N	CIS CIS CIS -	Blank Flanged; Vent. Syst. Valves Presently Not Used in Modes 1-4
4a	Purge Air Exhaust Sample Line (3"Ø)	A1	100VAS 101VAS 507VAS -	MAN GA VLV MAN GA VLV MAN GL TEST VLV TEST CONN /w CAP	X X X X		LC LC LC C	C C C	C C C	- - -	N	- -	
5	SIG (E50A) Bottom Blow Down (2"Ø)	C2	CV0767 CV0771 567MS -	AO ANGLE VLV AO ANGLE VLV MAN GL TEST VLV TEST CONN /w CAP	X X X X		NO NO LC C	C C C	C C C	C C -	N	CIS CIS -	
6	S/G (E50B) Bottom Blow Down (2"Ø)	C2	CV0768 CV0770 568MS -	AO ANGLE VLV AO ANGLE VLV MAN GL TEST TEST CONN /w CAP	X X X X		NO NO LC C	C C C	C C C	C C -	N	CIS CIS -	
7	Feedwater to S/G (E50A) (18"Ø)	C1 6" 18"	746FW N218R-704 N218R-702	MAN GL VLV CHECK VLV CHECK VLV	X X X		LC C O	C C O	C C C	- - -	N Y Y	- REV⌀P REV⌀P	 Aux FW Main FW

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8	Feedwater to S/G (E50B)	C1 18"	747FW	MAN GL DRAIN VLV	X		LC	C	C	-	N	-	
			N218R-701	CHECK VLV	X		O	O	C	-	Y	REV▵P	Main FW
			N218R-703	CHECK VLV	X		C	C	C	-	Y	REV▵P	Aux FW
9	Spare	-											
10	Service Air (2"Ø)	A2	122CAS	MAN GA VLV	X		LC	O/C	C	-	N	-	
			401CAS	CHECK VLV	X		C	O/C	C	-		REV▵P	
			142CA	MAN GL TEST VLV	X		LC	C	C	-			
			T	TEST CONN /w CAP	X		C						
11	Condensate to Shield Cooling Surge Tank (1½"Ø)	C2	CV0939	AO GA VLV	X		NO	O	C	C	N	CIS	
			401CDS	CHECK VLV	X		O	O/C	C	-		REV▵P	
			536CDS	MAN GL TEST VLV	X		LC	C	C	-		-	
			536ACD	MAN GL TEST VLV	X		LC	C	C	-		-	
			T	TEST CONN /w CAP	X		C						
12	Service Water Supply (16"Ø)	X	CV0847	AC BUTF VLV	X		NO	O	O	O	Y	MAN	
			CV0869	AC BUTF VLV		X	NO	O	O	O	Y	MAN	
			CV0865	AC BUTF VLV		X	NO	O	O	O	Y	MAN	
			CV0862	AC BUTF VLV		X	NO	O	O	O	Y	MAN	
			CV0870	AC BUTF VLV		X	NO	O	O	O	Y	MAN	
			571SWS	MAN GA VLV		X	LC	C	C	-	N	-	
			570SW	MAN GA VLV		X	LC	C	C	-	N	-	
			508SW	MAN GA VLV		X	LC	C	C	-	N	-	
			560SW	MAN GA VLV		X	LC	C	C	-	N	-	
			266SW	MAN GA VLV		X	LC	C	C	-	N	-	
			265SW	MAN GA VLV		X	LC	C	C	-	N	-	
13	Service Water Return (16"Ø)	X	CV0824	AC BUTF VLV	X		NO	O	O	O	Y	MAN	
			572SWS	MAIN GA TEST VLV	X		LC	C	C	-	N	-	
			CV0867	AC BUTF VLV		X	NC	C	O	O	Y	SIS	SIS Trips Normal Fan Which in Turn Opens Valve
			CV0843	AO GL VLV		X	NO	O	O	C	N	TC	
			CV0864	AC BUTF VLV		X	NC	C	O	O	Y	SIS	
			CV0863	AO GL VLV		X	NO	O	O	C	N	TC	
			CV0861	AC BUTF VLV		X	NC	C	O	O	Y	SIS	
			CV0838	AO GL VLV		X	NO	O	O	C	N	TC	
			CV0873	AC BUTF VLV		X	NC	C	O	O	Y	SIS	
			CV0872	AO GL VLV		X	NO	O	O	I	N	TC	

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14	Component Cooling Water in (10"Ø)	C2	CV0910 257-0910CC 507CC -	AC BUTF VLV CHECK VLV MAN GL TEST VLV TEST CONN /w CAP	X X X X		NO O LC C	NO O LC	C C C	O - -	N	SIS REV^P -	Auto Reopen on SIS Reset
15	Component Cooling Water Out (10"Ø)	C2	CV0911 CV0940 508CC - -	AC BUTF/HD OP AC BUTF/HD OP MAN GL TEST VLV TEST CONN /w CAP TEST CONN /w CAP	X X X X X		NO NO LC C C	O O C	C C C	AI AI -	N	SIS SIS	Auto Reopen on SIS Reset CV-0911 & 0940 has Accumula[illegible] for Loss of Air
16	SIG (E50A) Surface Blow Down (2"Ø)	C1	CV0739	AO ANGLE VLV	X		O	O/C	C	C	N	CIS	
17	Containment Pressure Instrumentation (4-½"Ø)	N/A	1802 1802A 1802B 1802C 1804 1804A 1804B 1804C 1812 1812A 1812B 1812C 1814 1814A 1814B 1814C		X X X X X X X X X X X X X X X X		LO LO LC LC LO LO LC LC LO LC LO LC LO LC LC LC	O O C C O O C C O C O C O C C C	O O C C O O C C O C O C O C C C	- - - - - - - - - - - - - - - -	Y		PS-1802 (SIS & CIS Initiation) PS-1802A (SIS & CIS Initiation) PS-1804 (SIS & CIS Initiation) P-S-1804 (SIS & CIS Initiation) PT-1812 PT-1812A PT-1814
17a	Containment Sump Level Instrumentation		1814E 618B-DRW 1814F 1814G TEST /wCAP		X X X X X		LO C LC LC CAP	O C C C	O C C C	- - - -	N		

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18 & 18a	Fuel Transfer Tube (36"Ø)	A2	- - -	MAN GA VLV 36" FLANGE 4" FLANGE	X	 X X	NC	C C C	C C C	- - -	N		Blind Flg w/ 2 O-Ring Seals Inside Ctmt
19	Personnel Lock Outer Door Inner Door	X	P5A - - 	MAN GL TEST VLV PRESS GAGE PRESS TUBE PRESS EQUAL VLV PRESS TUBE PRESS TUBE			LC C CAP NC CAP CAP	O/C	LC	-			
20	Spare			PRESS EQUAL VLV			NC						
21	Hydrogen Monitoring Return Line (½"Ø)		SV-2415A SV-2415B MV-WGS731 CAP		X X X X		C C	C C C	O/C O/C C	C C			
21a	Hydrogen Monitoring Supply Line (½"Ø)		SV-2413A SV-2413B MV-WGS730 CAP		X X X X		C C CAP	C C C	O/C O/C C	C C			
22	Redundant High Pressure Safety Injection (6"Ø)	X	MO3068 3250 MO3066 3251 MO3064 3252 MO3062 3253 RV3264 MO3072 CV3018 CV3036 3265 3265A	MO GL VLV CH'K VLV MO GL VLV CH'K VLV MO GL VLV CH'K VLV MO GL VLV CH'K VLV RELIEF VLV MO GA VLV AO GA VLV AC GA VLV MAN GL VLV MAN GL VLV	 X X X X X	X X X X X X X X X 	NC C NC C NC C NC C C NC NC NO NO NO	C C C C C C C C C C C C O O	O O O O O O O O C O/C O/C O O O	AI - AI - AI - AI - - AI C O - -	Y	SIS SIS SIS SIS SIS SIS SIS SIS 	ESF Related " PI-0375

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23	High Pressure Safety Injection	X	MO3007	MO GL VLV		X	NC	C	O	AI	Y	SIS	
			3104	CH'K VLV		X	C	C	O	-		SIS	ESF Related
			MO3009	MO GL VLV		X	NC	C	O	AI		SIS	Actuation Signal Initiated
			3119	CH'K VLV		X	C	C	O	-		SIS	By Chp or Per/Owp (≥1593Psia)
			MO3011	MO GL VLV		X	NC	C	O	AI		SIS	Actuation Signal Initiated
			3134	CH'K VLV		X	C	C	O	-		SIS	By Chp or Per/Owp (≥1593Psia)
			MO3013	MO GL VLV		X	NC	C	O	AI		SIS	Actuation Signal Initiated By Chp or Per/Owp (≥1593Psia)
			3149	CH'K VLV		X	C	C	O	-			
			RV3165	RELIEF VLV		X	C	C	C	-			
			CV3059	AC GA VLV	X		NO	O	O	O			
			CV3037	AO GA VLV	X		NC	O	O/C	O			
			3337	MAN GL TEST VLV	X		O						SX-3337
			3337A	MAN GL TEST VLV	X		O	C	O				SX-3337
			3180	MAN GL VLV	X		NO	O	O	-			PT-0318
			3180A	MAN GL VLV	X		NO	O	O	-			PT-0318
24	Spare	-											
25	Clean Waste Receiver Tank Vent to Stack (2"Ø)	C2	CV1064	AO GL VLV	X		NO	O	C	C	N	CIS	
			CV1065	AO GL VLV	X		NO	O	C	C		CIS	
			512CRW	MAN GL TEST VLV	X		LC	C	C	-			
			-	TEST CONN /W CAP	X		C						
			647CRW	MAN GL VLV	X		NO	O	O	-			PT-1065
			1358	DRAIN CONN/W CAP	X		C						
26	Nitrogen to Quench Tank	C2	CV1358	AO GA VLV	X		NC	C	C	C	N	CIS	
			400N2	CHECK VLV	X		C	C	C	-			
			581N2	MAN GA TEST VLV	X		LC	C	C	-			
			-	TEST CONNECT			C						
27	Int Leak Rate Test Fill Line (6"Ø)	A2	MOV-P1	MO BUTF VLV	X		NC	C	C	C	N	MAN	Flanged w/Gasket
			604 VAS	MAN GL VLV	X		LC	C	C	-			Inside Containment
			605 VAS	MAN GL VLV	X		LC	C	C	-			Flanged w/Gasket
			-	TEST CONN /W CAP	X		C						Inside Containment

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PENE-TRATION NO.	SYSTEM NAME AND SERVICE LINE SIZE	PENE CLASS NO.	VALVE IDENT. NUMBER	VALVE TYPE OR DESCRIPTION	LOCATION		POSITION				ESS-EN-TIAL	ACTUA-TION	REMARKS
					OC	IC	NOR-MAL	SHUT DN	POST LOCA	PWR FAIL.			
28	Containment Air Sample Line (½"Ø)		140 VAS		X		LO	O	O	-	N		
			141 VAS		X		LC	C	C	-			
			142 VAS		X		LC	C	C	-			
			510 VAS		X		LC	C	C	-			
			-	TEST CAP	X		C						
29	Capped Spare	-	-	PIPE FLANGE		X	C				N		
			-	PIPE END /W CAP	X		C						
30	Containment Spray	X	CV3001	AC GL VLV	X		NC	C	O	O	Y	CHP	ESF Related
			3258	MAN GATE VLV	X		LO	O	O	-			Auto Open On Chp
			3226	CHECK VLV	X		C	C	O	-			
			3344ES	GLOBE VLV	X		LC	C	C	-			
			-	TEST CONN /W CAP	X		C						
			3227ES	GLOBE VLV	X		LC	C	C	-			
31	Containment Spray	X	CV3002	AC GL VLV	X		NC	C	O	O	Y	CHP	ESF Related
			3259	MAN GA VLV	X		LO	O	O	-			Auto Open on Chp
			3216	CHECK VLV	X		C	C	O	-			
			3217ES	MAN GL VLV	X		LC	C	C	-			
			3346ES	M GL TEST VLV	X		LC	C	C	-			
			-	TEST CONN /W CAP	X		C						
32	Low Pressure Safety Injection (12"Ø)	X	MO3008	MO GL VLV		X	NC	C	O.	AI	Y	SIS	ESF Related
			3103ES	CHECK VLV		X	C	C	O	-		SIS	
			MO3010	MO GL VLV		X	NC	C	O	AI		SIS	
			3118ES	CHECK VLV		X	C	C	O	-		SIS	
			MO3012	MO GL VLV		X	NC	C	O	AI		SIS	
			3133ES	CHECK VLV		X	C	C	O	-		SIS	
			MO3014	MO GL VLV		X	NC	C	O	N		SIS	
			3148ES	CHECK VLV		X	C	C	O	-		SIS	
			3163ES	MAN GA VLV	X		LC	C	C	-			
			3196	MAN GA VLV	X		NO	O	O	-			
			3197	MAN GA VLV	X		NO	O	O	-			
			CV3006	AC GL VLV	X		NO	O	O	O		MAN	
			CV3025	AO GL VLV	X		NC	O	O/C	C		MAN	
			3336	MAN GA VLV	X		C	C	C	-			
			3108ES	MAN GA VLV		X	O	O	O	-			FT-0307
			3107ES	MAN GA VLV		X	O	O	O	-			FT-0307

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32 cont.	Low Pressure Safety Injection		1155PC	MAN GA VLV		X	C	C	C	-	Y		
			3123ES	MAN GA VLV		X	O	O	O	-			FT-0309
			3122ES	MAN GA VLV		X	O	O	O	-			FT-0309
			1156PC	MAN GA VLV		X	C	C	C	-			
			3138ES	MAN GA VLV		X	O	O	O	-			FT-0311
			3137ES	MAN GA VLV		X	O	O	O	-			FT-0311
			1157PC	MAN GA VLV		X	C	C	C	-			
			3153ES	MAN GA VLV		X	O	O	O	-			FT-0314
			3152ES	MAN GA VLV		X	O	O	O	-			FT-0314
			1158PC	MAN GA VLV		X	C	C	C	-			
			RV-3162	RELIEF		X	C	C	C	-			
33	Safety Injection Tank Drain (2"Ø)	C3	3234ES	MAN GA VLV	X		LC	C	C	-	N		
			3237ES	MAN GA VLV	X		LC	C	C	-			
			3348ES	MAN GL TEST VLV	X		LC	C	C	-			
			-	TEST CONN /W CAP	X		C						
			3227ES	MAN GL VLV	X		LC	C	C	-			
			3236ES	MAN GA VLV	X		LC	C	C	-			
			3235ES	M SAMPL LINE GAV	X		LC	C	C	-			
			3217ES	MAN GL VLV	X		LC	C	C	-			
34	Spare	-											
35	Shutdown Cooling Return (14"Ø)	B2	MOV3016	MO GA VLV		X	ELC	O	O/C	C	N	MAN	Manual Control
			MOV3015	MO GA VLV		X	ELC	O	O/C	C			
			RV3164	RELIEF VLV		X	NC	C	C	-			
			RV0401	RELIEF VLV		X	NC	C	C	-			
			3204ES	MAN GL VLV	X		LC	C	C	-			
			3205	MAN GA VLV	X		LC	C	C	-			
			-	PIPE FLANGE	X		C	C	C	-			
			MO-3190	MO GA VLV	X		ELC	O	O	AI			
			MO-3199	MO GL VLV	X		ELC	O	O	AI			
			3163	MAN GA VLV	X		C	C	C	-			
36	Letdown To Purification Ion Exchanger (1½"Ø)	B1	CV2009	AO GL VLV	X		NO	O	C	C	N	CIS	
			2320CVC	MAN GL TEST VLV	X		LC	C	C	-			
			-	TEST CONN /W CAP	X		C						
			2010CVC	MAN GA VLV	X		NO	O	O	-			

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PENE-TRATION NO.	SYSTEM NAME AND SERVICE LINE SIZE	PENE CLASS NO.	VALVE IDENT. NUMBER	VALVE TYPE OR DESCRIPTION	LOCATION OC	LOCATION IC	POSITION NOR-MAL	POSITION SHUT DN	POSITION POST LOCA	POSITION PWR FAIL.	ESS-EN-TIAL	ACTUA-TION	REMARKS
36 cont.	Letdown To Purification Ion Exchanger (1½"Ø)	B1	2148A	MAN GA VLV	X		NO	O	O	-	N		
			CV2012	AO GL VLV	X		NO	O	O/C	C			
			2149A	MAN GA VLV	X		NO	O	O	-			
			CV2122	AO GL VLV	X		NC	C	C	C			
37	Primary System Drain Pump Recirc (1½"Ø)	C2	CV1001	AO GL VLV	X		NC	C	C	C	N	CIS	
			403CRW	CHECK VLV	X		C	C	C	C			
			503CRW	MAN GL TEST VLV	X		LC	C	C	-			
			-	TEST CONN /W CAP	X		C						
38	Condensate Return From Steam Heating Units (2"Ø)	C2	CV1501	AO GA VLV	X		NC	O/C	C	C	N	CIS	
			CV1502	AO GA VLV	X		NC	O/C	C	C			
			502VA	MAN GL TEST VLV	X		LC	C	C	-			
			-	VENT CONN /W CAP	X		C						
			-	TEST CONN /W CAP	X		C						
39	Containment Heating System (4"Ø)	X	CV1503	AO GA VLV	X		NC	C	C	C	N	CIS	Check Valve Replaced w/Blank Flange When At Power
			-	CHECK VLV	X								
			503VA	MAN GL TEST VLV	X		LC	C	C	-			
			-	TEST CONN /W CAP	X		C						
			-	VENT CONN /W CAP	X		C						
40	Pri-Cooling System Sample Line (½"Ø)	B1	CV1910	AO GL VLV	X		O/C	O/C	C	C	N	CIS	
			CV1911	AO GL VLV	X		O/C	O/C	C	C			
			1170A	MAN GL TEST VLV	X		LC	C	C	-			
			1170B	MAN GL TEST VLV	X		LC	C	C	-			
				TEST CONN /W CAP	X		C						
40a	Hydrogen Monitoring Return Line (Degasifier Room) (½"Ø)		SV-2414A	SOLENOID	X		C	C	O/C	C	N	MAN	
			SV-2414B	SOLENOID	X		C	C	O/C	C		MAN	
			729WGS	MAN GL VLV	X		C	C	C	-			
			-	TEST CONN /W CAP	X		C						
40b	Hydrogen Monitor Supply Line (Degasifier Room) ½"Ø		SV-2412A	SOLENOID	X		C	C	O/C	C			
			SV-2412B	SOLENOID	X		C	C	O/C	C			
			728WGS	MAN GL VLV	X		C	C	C				
			-	TEST CONN /W CAP	X		C						

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PENE-TRATION NO.	SYSTEM NAME AND SERVICE LINE SIZE	PENE CLASS NO.	VALVE IDENT. NUMBER	VALVE TYPE OR DESCRIPTION	LOCATION OC	LOCATION IC	POSITION NOR-MAL	POSITION SHUT DN	POSITION POST LOCA	POSITION PWR FAIL.	ESS-EN-TIAL	ACTUA-TION	REMARKS
41	Degassifier Pump Discharge (3"Ø)	C2	CV1004 407CRW 506CRW -	AO GL VLV CHECK VLV MAN GL TEST VLV TEST CONN /W CAP	X X X X		NO O LC C	O O C	C C C	C - -	N	CIS	
42	Demineralized Water To Quench Tank (2"Ø)	C2	CV0155 V0155B 1126PC -	AO GL VLV CHECK VLV MAN GL TEST VLV TEST CONN /W CAP	X X X X		NC C LC C	C C C	C C C	C - -	N	CIS	
43	Spare												
44	Controlled Bleed Off From RCP'S (3/4"Ø)	C2	CV2083 2084 2083 2083A -	AO GL VLV MAN GL VLV MAN GA TEST VLV MAN GA TEST VLV TEST CONN /W CAP	X X X X X		NO NO LC LC C	O O C C	C O C C	C - - -	N	CIS	
45	Charging Pump Discharge (2"Ø)	B1	2110 CV2111	CHECK VLV AC GL VLV (W/ HD OPERATOR)	X X		O NO	O O	O O	 O	Y	- MAN	
46	Containment Vent Header (4"Ø)	C2	CV1101 CV1102 511WGS -	AO GL VLV AO GL VLV MAN GL TEST VLV TEST CONN /W CAP	X X X X		NO NO LC C	O O C	C C C	C C -	N	CIS	
47	Primary System Drain Tank Pump Suction	C2	CV1002 CV1007 502CRW -	AO GL VLV AO GL VLV MAN GL TEST VLV TEST CONN /W CAP	X X X X		NO NO LC C	O O C	C C C	C C -	N	CIS	
48	Containment Pressure Instrumentation (4-½"Ø Lines)	X	V-1801 V-1801A V-1801B V-1801C V-1803 V-1803A	MAN GA VLV MAN GA VLV MAN GA VLV MAN GA VLV MAN GA VLV MAN GA VLV	X X X X X X		LO LO LC LC LO LO	O O C C O O	O O C C O O	- - - - - -			PS-1801 (SIS & CIS Initiation) PS-1801A (SIS & CIS Initiation) PS-1803 (SIS & CIS Initiation) PS-1803A (SIS & CIS Initiation)

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48 cont.	Containment Pressure Instrumentation (4-½"Ø Lines)	X	V-1803B	MAN GA VLV	X		LC	C	C	-			
			V-1803C	MAN GA VLV	X		LC	C	C	-			
			V-1805	MAN GA VLV	X		LO	O	O	-			PT-1805
			V-1805A	MAN GA VLV	X		LC	C	C	-			
			V-1805B	MAN GA VLV	X		LO	O	O	-			PT-0105A
			V-1805C	MAN GA VLV	X		LC	C	C	-			
			V-1815	MAN GA VLV	X		LO	O	O	-			PT-1815
			V-1815A	MAN GA VLV	X		LC	C	C	-			
			V-1815B	MAN GA VLV	X		LC	C	C	-			
			V-1815C	MAN GA VLV	X		LC	C	C	-			
49	Clean Waste Receiver Tank Circulation Pump Suction (3"Ø)	C2	CV1038	AO GL VLV	X		NO	O	C	C	N	AUTO BY CIS	
			CV1036	AO GL VLV	X		NO	O	C	C			
			513CRW	MAN GL TEST VLV	X		LC	C	C	-			
			-	TEST CONN /W CAP	X		C						
			514CRW	MAN DRAIN VLV	X		LC	C	C	-			
50	Emergency Access Inside Ctmt	X	-	PRES EQUAL VLV		X	NC				N		
			-	PRESS TUBE		X	CAP						
				PRESS TUBE		X	CAP						
	Outside Ctmt		-	PRESS EQUAL VLV	X		NC						
			-	PRESS GAGE	X		C						
			-	PRESS TUBE	X								
			P6VA	MAN G TEST VLV	X		LC						
			-	TEST CONN /W CAP	X		C						
				O-RING TEST CONN	X		C						
51	Equipment Door	X	-	O-RING TEST CONNECT /W CAP		X	C						¼" Tube Between The Seals Capped
52	Containment Sump Drain to Sump Tank	A1	CV1103	AO GL VLV	X		NC	C	C	C	N	SIS	
			CV1104	AO GL VLV	X		NC	C	C	C		CHR	
			500DRW	MAN GL TEST VLV	X		LC	C	C	-			
			-	TEST CONN VLV	X		C						

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52a	Containment Sump Level Instrumentation (3/8"Ø)		618DRW	MAN GA VLV	X		LO	O	O	-			
			618FDRW	MAN GA VLV	X		LC	C	C	-			
			618HDRW	MAN GA VLV	X		LC	C	C	-			
			618EDRW	MAN GA VLV	X		LC	C	C	-			
			618GDRW	MAN GA VLV	X		LC	C	C	-			
			618ADRW	MAN GA VLV	X		LO	O	O	-			LT-0382
			618BDRW	MAN GA VLV	X		LC	C	C	-			
			618CDRW	MAN GA VLV	X		LC	C	C	-			
			618DDRW	MAN GA VLV	X		LC	C	C	-			
			-	3 TEST CONN/WCAP	X		C						
52b	Containment Sump Level Instrumentation		619DRW	MAN GA VLV	X		LO	O	O	-			
			619FDRW	MAN GA VLV	X		LC	C	C	-			
			619HDRW	MAN GA VLV	X		LC	C	C	-			
			619EDRW	MAN GA VLV	X		LC	C	C	-			
			619GDRW	MAN GA VLV	X		LC	C	C	-			
			619ADRW	MAN GA VLV	X		LO	O	O	-			LT-0383
			619BDRW	MAN GA VLV	X		LC	C	C	-			
			619CDRW	MAN GA VLV	X		LC	C	C	-			
			619DDRW	MAN GA VLV	X		LC	C	C	-			
			-	3 TEST CONN/WCAP	X		C						
53	Containment Spray Pump Suction	X	CV3029	AIR OP VLV	X		NC	C	O	AI	Y	SIRWT	Post Loca Open On Sirw LL
			3182ES	MAN GL TEST VLV	X		LC	C	C	-		LL	
			-	TEST CONN /W CAP	X		C						
54	Containment Spray Pump Suction	X	CV3030	AIR OP VLV	X		NC	C	O	AI	Y	SIRWT	Post Loca Open On Sirw LL
			3167ES	MAN TEST VLV	X		LC	C	C	-		LL	
			-	TEST CONN /W CAP	X		C						
55	SIG (E50B) Surface Blowdown (2"Ø)	C1	CV0738	AO VLV W/ HAND OPERATOR	X		O	O/C	C	C	N	CIS	
56	Containment Sump Level Instrumentation		606A-VAS		X		LO	O	O	-			LT-0383
			619B-DRW		X		C	C	C	-			
			606B-VAS		X		LC	C	C	-			
			606C-VAS		X		LC	C	C	-			
			-	TEST CONN /W CAP	X		C						
57	Spare	-											

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58	Spare	-											
59	Spare	-											
60	Spare	-											
61	Spare	-											
62	Spare	-											
63	Spare	-											
64	Reactor Cavity Fill & Recirc (6"Ø)	A2	121SFP	MAN GA VLV		X	LC	C	C	-			
			120SFP	MAN GA VLV	X		LC	C	C	-			
			514SFP	MAN GL TEST VLV	X		LC	C	C	-			
			-	TEST CONN /W CAP	X		C						
65	Instrument Air (2"Ø)	A2	CV1211	AC GL VLV	X		NO	O	O	-	N	MAN	
			400CAS	CHECK VLV	X		O	O	O	-			
			612CAS	MAN GL TEST VLV	X		LC	C	C	-			
			-	TEST CONN /W CAP	X		C						
			611CAS	MAN GA VLV	X		NO	O	O	-			PS1220
66	ILRT Instrument Line (1½"Ø)	X	601VAS	MAN GA VLV		X	LC	C	C	-	N		
			L6VAS	MAN GA VLV	X		LC	C	C	-			
			603VAS	MAN GL TEST VLV	X		LC	C	C	-			
			-	TEST CONN /W CAP	X		C						
			602VA	MAN GL TEST VLV	X		LC	C	C	-			
			-	TEST CONN /W CAP	X		C						
67	Clean Waste Receiver Tank Pump Recirc (3"Ø)	C2	CV1037	AO GL VLV	X		NO	O	C	C	N	CIS	
			410-CRW	CHECK VLV	X		O	O	C	-			
			515CRW	MAN GL TEST VLV	X		LC	C	C	-			
			-	TEST CONN /W CAP	X		C						

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68	Air Supply To Air Room (12"Ø)	A1	CV1813 CV1814 505VAS -	AO BUTF VLV AO BUTF VLV MAN GL TEST VLV TEST CONN /W CAP	X X X X		LC LC LC C	O/C O/C C	C C C	C C -	N	CIS	Air Supply To CV-1813 & CV-1814 Is Also Tested Under LLRT
69	Clean Waste Receiver Tank Pump Suction (4"Ø)	C2	CV1045 CV1044 518CRW -	AO GL VLV AO GL VLV MAN GL TEST VLV TEST CONN /W CAP	X X X X		NO NO LC C	O O C	C C C	C C -	N	CIS	
70	Spare	-											
71	Spare	-											
72	Reactor Refueling Cavity Drain (8"Ø)	A2	117SFP 118SFP 515SFP -	MAN GA VALVE MAN GA VALVE MAN GL TEST VLV TEST CONN /W CAP	 X X X	X	LC LC LC C	C C C	C C C	- - -	N		
73	Capped Spare	-	- - 509VAS -	PIPE FLANGE PIPE END /W CAP MAN GL TEST VLV TEST CONN /W CAP	 X X X	X	BC C LC C	C C C C	C C C C	- - - -	N		

TABLE 1 NOTES

1. Valve Type or Description - AO means air-to-open and AC means air-to-close.

2. Normal Position - NO - Normally open
   NC - Normally closed
   BC - Bolted Closed (e.g. flange)
   LO - Locked Open
   LC - Locked Closed
   ELO - Electrically Locked Open (key lock switch)
   ELC - Electrically Locked Closed (key lock switch)

3. Shutdown Position - Assumes normal shutdown with the plant on shutdown cooling.

4. Power Failure Position - Position shown is for either loss of power or loss of air unless otherwise noted.

5. Actuation - Signal which automatically causes valve to reposition unless otherwise specified. Symbols are:

   CIS - Containment Isolation Signal
   SIS - Safety Injection Signal
   CHP - Containment High Pressure Signal
   CHR - Containment High Radiation Signal
   MAN - Remotely actuated by Manual Operator action