WNP-2
SAFETY RELATED MECHANICAL EQUIPMENT LIST

SEISMIC QUALIFICATION INFORMATION

February 12, 1982

Washington Public Power Supply System
Richland, Washington 99352

Attachment 1

EQUIPMENT NO. LV	DESCRIPTION PLANT LOCATION	CONTRACT MFG	QID	QS	USE MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CIA-V-48 2	.75" GLOBE VALVE R 537 J.3/4.7	215 B350	361281	Q	2 0 P 76590-2							
HPCS-V-51+ 1	COMPOSITE FOR HPCS-V-51 C 554 240 D AZ	 V085	361745		2 0 DWG P2-3311-N-16							
RRC-V-16A 2	RRC PUMP SEAL PURGE INLE C	215 B350	361281	R	2 0 79290							
RRC-V-16B 2	RRC PUMP SEAL PURGE INLE C	215 B350	361281	R	2 0 79290							
SW-V-69B+ 1	18" GATE MO COMPOSITE B 435 C.5/2.0				4 3							
SW-V-70A+ 1	18" MO GATE COMPOSITE A 433 C.4/1.6				4 3							
CAC-EV-1A+ 1	COMPOSITE FOR AFTERCOOLER 1A R 573 M.5/5.6				1 0							
CAC-EV-1B+ 1	COMPOSITE FOR AFTERCOOLER 1B R 573 M.5/7.5				1 0							
CAC-FCV-1A 2	2.5" (EHC) FLOW CONTROL FROM X-99 R 575 M2/5.2	42A F130	133001	M	1 0 53A5659		0 1					N
CAC-FCV-1B 2	2.5" (EHC) FLOW CONTROL FROM X-97 R 564 J.6/6.7	42A F130	133001	M	1 0 53A5659		0 1					N
CAC-FCV-2A 2	2.5" (EHO) FLOW CONTROL TO X-96 R 560 M.1/7.7	42A F130	133004	M	1 0 AU6185		0 1					N
CAC-FCV-2B 2	2.5" (EHC) FLOW CONTROL TO X-98 R 558 M.5/6.6	42A F130	133004	M	1 0 AU6185		0 1					N
CAC-FCV-2B+ 1	COMPOSITE FOR CAC-FCV-2B R 558 M.5/6.6				1 0							
CAC-FCV-3A 2	2.5" (EHC) FLOW CONTROL FROM X-105 R 495 M.8/4.7	42A F130	133001	M	1 0 53A5659		0 1					N
CAC-FCV-3A+ 1	COMPOSITE FOR CAC-FCV-3A R 495 M.6/4.7				1 0							
CAC-FCV-3B 2	2.5" (EHC) FLOW CONTROL FROM X-104 R 496 J.0/7.4	42A F130	133001	M	1 0 53A5659		0 1					N
CAC-FCV-3B+ 1	COMPOSITE FOR CAC-FCV-3B R 496 J.0/4.7				1 0							
CAC-FCV-4A 2	2.5" (EHC) FLOW CONTROL TO X-102 R 495 N.4/6.0	42A F130	133001	M	1 0 53A5659-6		0					N
CAC-FCV-4A+ 1	COMPOSITE FOR CAC-FCV-4A R 495 N.4/6.0				1 0							
CAC-FCV-4B 2	2.5" (EHC) FLOW CONTROL TO X-103 R 495 N.4/6.0	42A F130	133001	M	1 0 53A5659		0					N
CAC-FCV 4B+ 1	COMPOSITE FOR CAC-FCV-4B R 495 N.4/6.0				1 0							
CAC-FCV-5A 2	1.0" GLOBE CAC-AW-1A S.W. INLET R 572 M.6/6.4	71 C678	133005	A	1 0 47	2 1						N
CAC-FCV 5A+ 1	COMPOSITE FOR CAC-FCV-5A R 572 M.6/6.4				1 0							
CAC-FCV-5B 2	1.0" GLOBE CAC-AW-1B S.W. INLET R 573 M.6/7.5	71 C678	133005	A	1 0 48	2 1					F	N
CAC-FCV 5B+	COMPOSITE FOR CAC-FCV-5B				1 0							

EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	TEST	MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
	1		R 573 M.6/7.5													
CAC-FCV-6A	2	2.0" EHC GLOBE CAC-FN-1A RECIRC.	R 572 M.6/6.4	71	C678	133005	A	1 0	2 1	50					F	N
CAC-FCV-6A+	1	COMPOSITE FOR CAC-FCV-6A	R 572 M.6/6.4					1 0								
CAC-FCV-6B	2	2.0" EHC GLOBE CAC-FN-1B RECIRC.	R 573 M.6/7.5	71	C678	133005	A	1 0	2 1	49					F	N
CAC-FCV-6B+	1	COMPOSITE FOR CAC-FCV-6B	R 573 M.6/7.5					1 0								
CAC-FN-1A	2	BLOWER 25 HP	R 572 M.5/6.6	71	A136	145021	A	1 0	2 1	01.14					F	N
CAC-FN-1B	2	BLOWER 25 HP	R 572 M.5/7.4	71	A136	145021	A	1 0	2 1	01.14					F	N
CAC-HR-1A+	1	COMPOSITE HYDROGEN RECOMBINER 1A	R 573 M.5/6.6				A	1 0								
CAC-HR-1B+	1	COMPOSITE HYDROGEN RECOMBINER 1B	R 573 M.6/7.5				A	1 0								
CAC-RV-63A	2	1" X 2" RELIEF CAC-EV-1A S.W.	R 573 M.5/6.6	71	L263	297003	Y	1 0	2 1	D300					F	N
CAC-RV-63B	2	1" X 2" RELIEF CAC-EV-1B S.W.	R 573 M.5/6.6	71	L263	297003	Y	1 0	2 1	D300					F	N
CAC-RV-65A	2	RELIEF CAC-EV-1A DISCH 1 1/2" X 3"	R 573 M.5/6.6	71	A415	297016	R	1 0	2 1	830SH153					F	N
CAC-RV-65B	2	RELIEF CAC-EV-1A DISCH 1 1/2" X 3"	R 573 M.5/6.6	71	A415	297016	R	1 0	2 1	830SH152					F	N
CAC-TCV-4A	2	2.0" GLOBE CAC-EV-1A SW IN (EHO)	R 572 M.6/6.4	71	C678	335005	A	1 0	2 1	46					F	N
CAC-TCV 4A+	1	COMPOSITE FOR CAC-TCV-4A	R 572 M6/6.4					1 0								
CAC-TCV-4B	2	2.0" GLOBE CAC-EV-1B S.W. INLET	R 573 M.6/7.5	71	C678		A	1 0	2 1						F	N
CAC-TCV-4B+	1	COMPOSITE FOR CAC-TCV-4B	R 573 M.6/7.5					1 0								
CAC-V-1A	2	2" SAUNDERS TO CAC-AV-1A (EHO)	R 572 M.6/6.4	71	I207	361943	A	1 0	2 1	NH-95C2670F3L2					F	N
CAC-V-1A+	1	COMPOSITE FOR CAC-V-1A	R 572 M.6/6.4					1 0								
CAC-V-1B	2	2" SAUNDERS TO CAC-AV-1B (EHO)	R 573 M.6/7.5	71	I207	361943	A	1 0	2 1	NH-95C2670F3L2					F	N
CAC-V-1B+	1	COMPOSITE FOR CAC-V-1B	R 573 M.6/7.5					1 0								
CAC-V-11	2	4.0" GATE CAC LINE TO (X-98)	R 556 M.4/6.4	41A	V085	361703	M	1 0		DWG P2-3311-N-7	0 1			58		N
CAC-V-11+	1	COMPOSITE FOR CAC-V-11	R 558 M.4/6.4					1 0								
CAC-V-13	2	4.0" GATE CAC LINE TO (X-103)	R 495 N.4/6.0	41A	V085	361703	B	1 0		DWG P2-3311-N-7	0 1			58		N
CAC-V-13+	1	COMPOSITE FOR CAC-V-13	R 495 N.4/6.0					1 0								

WASHINGTON PUBLIC POWER SUPPLY SYSTEM
SAFETY RELATED EQUIPMENT LIST FOR NRC-SQRT

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CAC-V-15	4.0" GATE CAC LINE FROM (X-97)	41A	361703	B	1 0		0 1			58		N
2	R 564 J.6/6.8	V085			DWG P2-3311-N-7							
CAC-V-15+	COMPOSITE FOR CAC-V-15				1 0							
1	R 564 J.6/6.7											
CAC-V-17	4.0" GATE CAC LINE FROM (X-104)	41A	361703	B	1 0		0 1			58		N
2	R 496 J.0/7.4	V085			DWG P2-3311-N-7							
CAC-V-17+	COMPOSITE FOR CAC-V-17				1 0							
1	R 496 J.0/7.4											
CAC-V-2	4.0" GATE CAC LINE TO (X-96)	41A	361703	A	1 0		0 1			58		N
2	R 560 L.2/7.1	V085			DWG P2-3311-N-7							
CAC-V-2+	COMPOSITE FOR CAC-V-2				1 0							
1	R 560 L.2/7.1											
CAC-V-2A	2.0" SAUNDERS (EHO)	71	361944	A	1 0	2 1					F	N
2	R 572 M.6/6.4	I207			NH-91C2070F3L2							
CAC-V-2A+	COMPOSITE FOR CAC-V-2A				1 0							
1	R 572 M.6/6.4											
CAC-V-2B	2.0" SAUNDERS (EHO)	71	361944	A	1 0	2 1					F	N
2	R 573 M.6/7.5	I207			NH-91C2070F3L2							
CAC-V-2B+	COMPOSITE FOR CAC-V-2B				1 0							
1	R 573 M.6/7.5											
CAC-V-3A	0.75" GLOBE CAC-MS-1A DRAIN	71	361945	A	1 0	2 1					F	N
2	R 572 M.6/6.4	I207			NH-95C1670F3L3							
CAC-V-3A+	COMPOSITE FOR CAC-V-3A				1 0							
1	R 572 M.6/6.4											
CAC-V-3B	0.75" GLOBE CAC-MS-1B DRAIN	71	361945	A	1 0	2 1					F	N
2	R 573 M.6/7.5	I207			NH-95C1670F3L3							
CAC-V-3B+	COMPOSITE FOR CAC-V-3B				1 0							
1	R 573 M6/7.5											
CAC-V-4	4.0" GATE CAC LINE TO (X-102)	41A	361703	B	1 0		0 1			58		N
2	R 491 M.9/8.7	V085			DWG P2-3311-N-7							
CAC-V-6	4.0" GATE CAC LINE FROM (X-99)	41A	361703	B	1 0		0 1			58		N
2	R 574 L.7/5.5	V085			DWG P2-3311-N-7							
CAC-V-6+	COMPOSITE FOR CAC-V-6				1 0							
1	R 574 L.7/5.5											
CAC-V-8	4.0" GATE CAC LINE FROM (X-105)	41A	361703	B	1 0							
2	R 492 M.7/4.7	V085			DWG P2-3311-N-7							
CAC-V-8+	COMPOSITE FOR CAC-V-8				1 0							
1	R 492 M.7/4.5											
CEP-AO-1A	AIR OPERATOR FOR CEP-V-1A	68		R	3 3							
2	R 560 J.4/5.4	M322			A83B							
CEP-AO-1B	AIR OPERATOR FOR CEP-V-1B	68		R	3 3							
2	R 558 J.4/5.3	M322			A38B							
CEP-AO-2A	AIR OPERATOR FOR CEP-V-2A		018001	R	3 3							
2	R 558 J.4/5.4	M322			A83B							
CEP-AO-2B	AIR OPERATOR FOR CEP-V-2B	68		R	3 3							
2	R 558 J.4/5.3	M322			A38B							
CEP-AO-3A	AIR OPERATOR FOR CEP-V-3A	68	018001	R	3 3							
2	R 497 H.5/5.4	M322			A83B							
CEP-AO-3B	AIR OPERATOR FOR CEP-V-3B	68	018009	R	3 3							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 495 H.5/5.7	I206			DWG V502L119A							
CEP-AO-4A	AIR OPERATOR FOR CEP-V-4A	68	018001	R	3 3							
2	R 497 H.5/5.4	M322			A83B							
CEP-AO-4B	AIR OPERATOR FOR CEP-V-4B	68	018010	R	3 3							
2	R 498 H.5/5.4	I206			CAT 502JGE62EAZ0/							
CEP-V-1A	30.0" BFLY(AO) DRYWELL EXHAUST	68	361104	M	2 3						P	
2	R 558 J.4/5.4	B250			DWG A-206763							
CEP-V-1A+	COMPOSITE FOR VALVE CEP-V-1A	68			2 3							
1	R 558 J.4/5.4											
CEP-V-1B	2" GATE CEP-V-1A BYPASS	68	361402	N	2 3		0 1					Y
2	R 558 J.4/5.3	I208			DWG 502L-119A							
CEP-V-1B+	COMPOSITE FOR VALVE CEP-V-1B+				2 3							
1	R 558 J.4/5.3											
CEP-V-2A	30.0" BLFY DRYWELL EXHAUST(AO)	68	361104	M	2 3						P	
2	R 558 J.4/5.4	B250			DWG A-206763							
CEP-V-2A+	COMPOSITE FOR VALVE CEP-V-2A	68			2 3							
1	R 558 J.4/5.4											
CEP-V-2B	2" GATE CEP-V-2A BYPASS	68	361402	N	2 3		0 1					Y
2	R 558 J.4/5.3	I208			DWG V-502L-119A							
CEP-V-2B+	COMPOSITE FOR VALVE CEP-V-2B	68			2 3							
1	R 558 J.4/5.3											
CEP-V-3A	24.0" BLFY SUPP. CHAMBER EXHAUST	68	361106	M	2 3		0 1				P	N
2	R 495 H.5/5.4	B250.			DWG A-206764							
CEP-V-3A+	COMPOSITE FOR VALVE CEP-V-3A	68			2 3							
1	R 495 H.5/5.4											
CEP-V-3B	2.0" GATE CEP-V-3A BYPASS	68	361402	T	2 3		0 1					N
2	R 495 H.7/5.6	I208			DWG V502L119A							
CEP-V-3B+	COMPOSITE FOR VALVE CEP-V-3B	68			2 3							
1	R 475 H.7/5.6											
CEP-V-4A	24.0" BFLY SUPP.CHAMBER EXHAUST	68	361106	M	2 3		0 1				P	N
2	R 495 H.5/5.4	B250			DWG A-206764							
CEP-V-4A+	COMPOSITE FOR VALVE CEP-V-4A	68			2 3							
1	R 495 H.6/5.7											
CEP-V-4B	2.0" GATE CEP-V-4A BYPASS	68	361402	T	2 3		0 1					N
2	R 495 H.5/5.7	I208			V-502L-119A							
CEP-V-4B+	COMPOSITE FOR VALVE CEP-V-4B	68			2 3							
1	R 495 H.5/5.7											
CIA-V-20.	.75"GLB.(MO)OUTERMOST ISOLATION	215	361201	M	1 3		0 1			36	P	N
2	R 540 J.5/7.1	B350			DWG 3040CAB3-001							
CIA-V-20+	COMPOSITE FOR CIA-V-20.				1 3							
1	R 540 J.5/7.1											
CIA-V-30A	.5"(MC) GLB. N2 OUTER ISOL (X-89B)	215	361203	N	1 3		0 1			49	P	N
2	R 540 J.5/4.3	B350			DWE 82110.							
CIA-V-30A+		215			1 3							
1	R 540 J.5/4.3											
CIA-V-30B	.5"(MC) GLB N2 OUTER ISOL (X-91)	215	361203	N	1 3		0 1			49	P	N
2	R 540 M.5/7.0	8350			DWG 82110							
CIA-V-30B+		215			1 3							
1	R 540 M.5/7.0											

WASHINGTON PUBLIC POWER SUPPLY SYSTEM
SAFETY RELATED EQUIPMENT LIST FOR NRC-SORT DATE 02/10/82 PAGE 5

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRA-AD-1A1	CRA-FC-1A DISCHARGE	216		R	3 3							
2	C 520 60 D AZ R19	P295										
CRA-AD-1A1+					3 3							
1	C 520 60 D AZ R19											
CRA-AD-1A2	CRA-FC-1A2 DISCHARGE	216		R	3 3							
2	C 516 60 D AZ R19	P295										
CRA-AD-1A2+					3 3							
1	C 516 60 D AZ R19											
CRA-AD-1B1	CRA-FC-1B DESCHARGE	216		R	3 3							
2	C 514 200 D AZ R19	P295										
CRA-AD-1B1+					3 3							
1	C 514 200 D AZ R19											
CRA-AD-1B2	AIR DAMPER (EHC) TO CRA-FC-1B	216		R	3 3							
2	C 509 210 D AZ R18	P295										
CRA-AD-1B2+					3 3							
1	C 509 210 D AZ R18											
CRA-AD-1C1	CRA-FC-1C DISCHARGE	216		R	3 3							
2	C 520 290 D AZ R21	P295										
CRA-AD-1C1+					3 3							
1	C 520 290 D AZ R21											
CRA-AD-1C2	CRA-FC-1C DISCHARGE	216		R	3 3							
2	C 515 290 D AZ R21	P295										
CRA-AD-1C2+					3 3							
1	C 515 290 D AZ R21											
CRA-AD-2A	CRA-FC-2A DISCHARGE	216	011002	R	3 3						D	
2	C 556 345 D AZ R22	P295			NH95							
CRA-AD-2A+					3 3							
1	C 556 345 D AZ R22											
CRA-AD-2B	CRA-FC-2B DISCHARGE	216	011002	R	3 3						D	
2	C 556 200 D AZ R22	P295			NH95							
CRA-AD-2B+	COMPOSITE OF CRA-AD-2B				3 3							
1	C 556 200 D AZ R22											
CRA-CC-1A	FOR CRA-FC-1A COOLING COIL	67	037001	M	3 3		0 1			21		Y
2	C 501 64 D AZ R30	C780										
CRA-CC-1B	FOR CRA-FC-1B COOL. COIL	67	037001	M	3 3		0 1			21		Y
2	C 501 184 D AZ R30	C780										
CRA-CC-1C	FOR CRA-FC-1C COOL. COIL	67	037001	M	3 3		0 1			21		Y
2	C 501 273 D AZ R30	C780										
CRA-CC-2A	FOR CRA-FC-2A COOL. COIL	67	037001	M	3 3		0 1			21		Y
2	C 545 0 D AZ R23	C780										
CRA-CC-2B	FOR CRA-FC-2B COOL. COIL	67	037001	M	3 3		0 1			21		Y
2	C 541 217 D AZ R23	C780										
CRA-FC-1A	LOWER LEVEL FAN COIL UNIT	67	130004	M	3 3		0 1			21	F	Y
2	C 501 64 D AZ R30	P295			AX-560							
CRA-FC-1A+	LOWER LEVEL FAN COIL UNIT				3 3							
1	C 501 64 D AZ R30											
CRA-FC-1B	LOWER LEVEL FAN COIL UNIT	67	130004	M	3 3		0 1			21	F	Y
2	C 501 184 D AZ R30	P295			AX-560							
CRA-FC-1B+	LOWER LEVEL FAN COIL UNIT				3 3							

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1	C 501 184 C AZ R30												
CRA-FC-1C	LOWER LEVEL FAN COIL UNIT	67		130004	M	3 3		0 1			21	F	Y
2	C 501 273 D AZ R30		P295			AX+560							
CRA-FC-1C+	LOWER LEVEL FAN COIL UNIT					3 3							
1	C 501 273 C AZ R30												
CRA-FC-2A	UPPER LEVEL FAN COIL UNIT	67		130004	M	3 3		0 1			21		Y
2	C 545 0 D AZ R23		P295			AX+560							
CRA-FC-2A+	UPPER LEVEL FAN COIL UNIT					3 3							
1	C 545 0 D AZ R23												
CRA-FC-2B	UPPER LEVEL FAN COIL UNIT	67		130004	M	3 3		0 1			21		Y
2	C 541 217 D AZ R23		P295			AX+560							
CRA-FC-2B+	UPPER LEVEL FAN COIL UNIT					3 3							
1	C 541 217 D AZ R23												
CRA-FL-1A	CONST PERIOD ONLY FILTER CRA-FC-1A	67			M	3 3		0 1			21		Y
2	C 501 K2/4.8		P295										
CRA-FL-1B	CONST PERIOD ONLY FILTER CRA-FC-1B	67			M	3 3		0 1			21		Y
2	C 501 M5/6		P295										
CRA-FL-1C	CONST PERIOD ONLY FILTER CRA-FC-1C	67			M	3 3		0 1			21		Y
2	C 501 K8/7.7		P295										
CRA-FL-2A	CONST PERIOD ONLY FILTER CRA-FC-2A	67			M	3 3		0 1			21+		Y
2	C 541 K/6.1		P295										
CRA-FL-2B	CONST PERIOD ONLY FILTER CRA-FC-2B	67			M	3 3		0 1			21+		Y
2	C 541 L8/6.6		P295										
CRA-FN-1A1	PRI CONT FAN MC-7B ALL	67		145015	M	3 3		0 1			40	F	Y
2	C 506 62 D AZ R30		J127			36-26 1/2-1170							
CRA-FN-1A2	PRI CONT FAN MC-7B ALL	67		145015	M	3 3	1 1	0 1			64	F	Y
2	C 506 66 D AZ R30		J127			36-26 1/2-1770/1170							
CRA-FN-1B1	PRI CONT FAN MC-8B ALL	67		145015	M	3 3		0 1			40	F	Y
2	C 506 182 D AZ R30		J127			36-26 1/2-1170							
CRA-FN-1B2	PRI CONT FAN MC-8B ALL	67		145015	M	3 3	1 1	0 1			64	F	Y
2	C 506 186 D AZ R30		J127			36-26 1/2-1770/1170							
CRA-FN-1C1	PRI CONT FAN MC-8B ALL	67		145015	M	3 3		0 1			40	F	Y
2	C 506 271 D AZ R30		J127			36-26 1/2-1170							
CRA-FN-1C2	PRI CONT FAN MC-8B ALL	67		145015	M	3 3	1 1	0 1			64		Y
2	C 506 275 D AZ R30		J127			36-26 1/2-1770/1170							
CRA-FN-2A1	PRI CONT FAN MC-7B ALL	67		145019	M	3 3		0 1			52		N
2	C 551 358 C AZ R23		J127			38-261/2-1770							
CRA-FN-2A2	PRI CONT FAN MC-8B ALL	67		145020	M	3 3		0 1			77		Y
2	C 551 2 D AZ R23		J127			23 1/4-17 1/2-3450							
CRA-FN-2B1	PRI CONT FAN MC-8B ALL	67		145019	M	3 3		0 1			52		N
2	C 547 215 C AZ R23		J127			38-261/2-1770							
CRA-FN-2B2	PRI CONT FAN MC 8B ALL	67		145020	M	3 3		0 1			92		Y
2	C 547 219 D AZ R23		J127			23 1/4-17 1/2-3450							
CRA-FN-3A	LOWER LEVEL RECIRC. FAN MC-7B	22A		145001	M	3 3		0 1				F	Y
2	C 534 50 D AZ R17		J127			500722-112							
CRA-FN-3A+						3 3							
1	C 534 50 D AZ R17												
CRA-FN-3B	LOWER LEVEL RECIRC. FAN MC-8B	22A		145001	M	3 3		0 1				F	Y
2	C 534 140 C AZ R17		J127			500722-112							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRA-FN-3B+					3 3							
1	C 534 140 D AZ R17											
CRA-FN-3C	LOWER LEVEL RECIRC. FAN MC-8B	22A	145001	M	3 3		0 1				F	Y
2	C 534 60 D AZ R17	J127			500722-112							
CRA-FN-3C+					3 3							
1	C 534 60 D AZ R17											
CRA-FN-4A	RETURN AIR FAN MC-7B	22A	145002	C E	3 3		0 1			71	F	Y
2	C 572 330 D AZ R17	J127			500722-113							
CRA-FN-4A+					3 3							
1	C 572 330 D AZ R17											
CRA-FN-4B	RETURN AIR FAN MC-8B	22A	145002	C E	3 3		0 1			71	F	Y
2	C 572 206 D AZ R17	J127			500722-113							
CRA-FN-4B+					3 3							
1	C 572 206 D AZ R17											
CRA-FN-5A	UPPER LEVEL RECIRC. FAN MC-7B	22A	145001	M	3 3		0 1				F	Y
2	C 572 180 D AZ R17	J127			1388009-8							
CRA-FN-5A+	COMPOSITE OF CRA-FN-5A				3 3							
1	C 572 180 D AZ R17											
CRA-FN-5B	UPPER LEVEL RECIRC. FAN MC-8B	22A	145001	M	3 3		0 1				F	Y
2	C 572 20 D AZ R17	J127			1388009-8							
CRA-FN-5B+	COMPOSITE OF CRA-FN-5B				3 3							
1	C 572 20 D AZ R17											
CRA-FN-5C	UPPER LEVEL RECIRC. FAN MC-7B	22A	145001	M	3 3		0 1				F	Y
2	C 572 270 D AZ R17	J127			1388009-8							
CRA-FN-5C+	COMPOSITE OF CRA-FN-5C				3 3							
1	C 572 270 D AZ R17											
CRA-FN-5D	UPPER LEVEL RECIRC. FAN MC-8B	22A	145001	M	3 3		0 1				F	Y
2	C 572 90 D AZ R17	J127			1388009-8							
CRA-FN-5D+	COMPOSITE OF CRA-FN-5D				3 3							
1	C 572 90 D AZ R17											
CRD-AO-10		02C12			1 3							
2	R 543 J.1/5.1	G072			M394B							
CRD-AO-11		02C12			2 3							
2	R 523 J.1/4.9	G072			M229B							
CRD-AO-126/0219	AIR OP CRD-V-126/0219 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/0223	AIR OP CRD-V-126/0223 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/0227	AIR OP CRD-V-126/0227 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/0231	AIR OP CRD-V-126/0231 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/0235	AIR OP CRD-V-126/0235 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AO-126/0239	AIR OP CRD-V-126/0239 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AO-126/0243	AIR OP CRD-V-126/0243 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AO-126/0615	AIR OP CRD-V-126/0615 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/0619	AIR OP CRD-V-126/0619 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/0623	AIR OP CRD-V-126/0623 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/0627	AIR OP CRD-V-126/0627 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/0631	AIR OP CRD-V-126/0631 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/0635	AIR OP CRD-V-126/0635 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/0639	AIR OP CRD-V-126/0639 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/0643	AIR OP CRD-V-126/0643 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/0647	AIR OP CRD-V-126/0647 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/1011	AIR OP CRD-V-126/1011 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/1015	AIR OP CRD-V-126/1015 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/1019	AIR OP CRD-V-126/1019 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/1023	AIR OP CRD-V-126/1023 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/1027	AIR OP CRD-V-126/1027 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/1031	AIR OP CRD-V-126/1031 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/1035	AIR OP CRD-V-126/1035 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/1039	AIR OP CRD-V-126/1039 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/1043	AIR OP CRD-V-126/1043 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/1047	AIR OP CRD-V-126/1047 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/1051	AIR OP CRD-V-126/1051 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/1407	AIR OP CRD-V-126/1407 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/1411	AIR OP CRD-V-126/1411 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/1415	AIR OP CRD-V-126/1415 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/1419	AIR OP CRD-V-126/1419 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/1423	AIR OP CRD-V-126/1423 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							

EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-AC-126/1427	2	AIR OP CRD-V-126/1427 SCRAM INLET	R 522 L5/8.4	02C12	R290	018015	A	1 3	83470-A1	2 2	0 2				R	N
CRD-AC-126/1431	2	AIR OP CRD-V-126/1431 SCRAM INLET	R 522 L5/8.4	02C12	R290	018015	A	1 3	83470-A1	2 2	0 2				R	N
CRD-AO-126/1435	2	AIR OP CRD-V-126/1435 SCRAM INLET	R 522 K2/8.4	02C12	R290	018015	A	1 3	83470-A1	2 2	0 2				R	N
CRD-AC-126/1439	2	AIR OP CRD-V-126/1439 SCRAM INLET	R 522 K2/8.4	02C12	R290	018015	A	1 3	83470-A1	2 2	0 2				R	N
CRD-AC-126/1443	2	AIR OP CRD-V-126/1443 SCRAM INLET	R 522 K2/8.4	02C12	R290	018015	A	1 3	83470-A1	2 2	0 2				R	N
CRD-AC-126/1447	2	AIR OP CRD-V-126/1447 SCRAM INLET	R 522 K2/8.4	02C12	R290	018015	A	1 3	83470-A1	2 2	0 2				R	N
CRD-AC-126/1451	2	AIR OP CRD-V-126/1451 SCRAM INLET	R 522 K2/8.4	02C12	R290	018015	A	1 3	83470-A1	2 2	0 2				R	N
CRD-AO-126/1455	2	AIR OP CRD-V-126/1455 SCRAM INLET	R 522 K2/8.4	02C12	R290	018015	A	1 3	83470-A1	2 2	0 2				R	N
CRD-AC-126/1803	2	AIR OP CRD-V-126/1803 SCRAM INLET	R 522 L5/8.4	02C12	R290	018015	A	1 3	83470-A1	2 2	0 2				R	N
CRD-AO-126/1807	2	AIR OP CRD-V-126/1807 SCRAM INLET	R 522 L5/8.4	02C12	R290	018015	A	1 3	83470-A1	2 2	0 2				R	N
CRD-AO-126/1811	2	AIR OP CRD-V-126/1811 SCRAM INLET	R 522 L5/8.4	02C12	R290	018015	A	1 3	83470-A1	2 2	0 2				R	N
CRD-AC-126/1815	2	AIR OP CRD-V-126/1815 SCRAM INLET	R 522 L5/8.4	02C12	R290	018015	A	1 3	83470-A1	2 2	0 2				R	N
CRD-AC-126/1819	2	AIR OP CRD-V-126/1819 SCRAM INLET	R 522 L5/8.4	02C12	R290	018015	A	1 3	83470-A1	2 2	0 2				R	N
CRD-AC-126/1823	2	AIR OP CRD-V-126/1823 SCRAM INLET	R 522 L5/8.4	02C12	R290	018015	A	1 3	83470-A1	2 2	0 2				R	N
CRD-AO-126/1827	2	AIR OP CRD-V-126/1827 SCRAM INLET	R 522 L5/8.4	02C12	R290	018015	A	1 3	83470-A1	2 2	0.2				R	N
CRD-AC-126/1831	2	AIR OP CRD-V-126/1831 SCRAM INLET	R 522 L5/8.4	02C12	R290	018015	A	1 3	83470-A1	2 2	0.2				R	N
CRD-AC-126/1835	2	AIR OP CRC-V-126/1835 SCRAM INLET	P 522 K2/8.4	02C12	R290	018015	A	1 3	83470-A1	2 2	0.2				R	N
CRD-AC-126/1839	2	AIR OP CRD-V-126/1839 SCRAM INLET	R 522 K2/8.4	02C12	R290	018015	A	1 3	83470-A1	2 2	0 2				R	N
CRD-AC-126/1843	2	AIR OP CRD-V-126/1843 SCRAM INLET	R 522 K2/8.4	02C12	R290	018015	A	1 3	83470-A1	2 2	0.2				R	N
CRD-AO-126/1847	2	AIR OP CRD-V-126/1847 SCRAM INLET	R 522 K2/8.4	02C12	R290	018015	A	1 3	83470-A1	2 2	0.2				R	N
CRD-AC-126/1851	2	AIR OP CRD-V-126/1851 SCRAM INLET	R 522 K2/8.4	02C12	R290	018015	A	1 3	83470-A1	2 2	0 2				R	N
CRD-AC-126/1855	2	AIR OP CRD-V-126/1855 SCRAM INLET	R 522 K2/8.4	02C12	R290	018015	A	1 3	83470-A1	2 2	0.2				R	N
CRD-AC-126/1859	2	AIR OP CRD-V-126/1859 SCRAM INLET	R 522 K2/8.4	02C12	R290	018015	A	1 3	83470-A1	2 2	0 2				R	N
CRD-AC-126/2203	2	AIR OP CRD-V-126/2203 SCRAM INLET	R 522 L5/8.4	02C12	R290	018015	A	1 3	83470-A1	2 2	0 2				R	N
CRD-AC-126/2207		AIR OP CRD-V-126/2207 SCRAM INLET		02C12		018015	A	1 3		2 2	0 2				R	N

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2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/2211	AIR OP CRD-V-126/2211 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/2215	AIR OP CRD-V-126/2215 SCRAM INLET	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/2219	AIR OP CRD-V-126/2219 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/2223	AIR OP CRD-V-126/2223 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/2227	AIR OP CRD-V-126/2227 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/2231	AIR OP CRD-V-126/2231 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/2235	AIR OP CRD-V-126/2235 SCRAM INLET	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AO-126/2239	AIR OP CRD-V-126/2239 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AO-126/2243	AIR OP CRD-V-126/2243 SCRAM INLET	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AO-126/2247	AIR OP CRD-V-126/2247 SCRAM INLET	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AO-126/2251	AIR OP CRD-V-126/2251 SCRAM INLET	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AO-126/2255	AIR OP CRD-V-126/2255 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AO-126/2259	AIR OP CRD-V-126/2259 SCRAM INLET	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AO-126/2603	AIR OP CRD-V-126/2603 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/2607	AIR OP CRD-V-126/2607 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/2611	AIR OP CRD-V-126/2611 SCRAM INLET	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/2615	AIR OP CRD-V-126/2615 SCRAM INLET	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/2619	AIR OP CRD-V-126/2619 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/2623	AIR OP CRD-V-126/2623 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/2627	AIR OP CRD-V-126/2627 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/2631	AIR OP CRD-V-126/2631 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/2635	AIR OP CRD-V-126/2635 SCRAM INLET	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AO-126/2639	AIR OP CRD-V-126/2639 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AO-126/2643	AIR OP CRD-V-126/2643 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							

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CRD-AO-126/2647	AIR OP CRD-V-126/2647 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/2651	AIR OP CRD-V-126/2651 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AO-126/2655	AIR OP CRD-V-126/2655 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/2659	AIR OP CRD-V-126/2659 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/3003	AIR OP CRD-V-126/3003 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/3007	AIR OP CRD-V-126/3007 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/3011	AIR OP CRD-V-126/3011 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/3015	AIR OP CRD-V-126/3015 SCRAM INLET	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/3019	AIR OP CRD-V-126/3019 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/3023	AIR OP CRD-V-126/3023 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/3027	AIR OP CRD-V-126/3027 SCRAM INLET	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/3031	AIR OP CRD-V-126/3031 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AO-126/3035	AIR OP CRD-V-126/3035 SCRAM INLET	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/3039	AIR OP CRD-V-126/3039 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AO-126/3043	AIR OP CRD-V-126/3043 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/3047	AIR CP CRD-V-126/3047 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/3051	AIR OP CRD-V-126/3051 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AO-126/3055	AIR OP CRD-V-126/3055 SCRAM INLET	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/3059	AIR OP CRD-V-126/3059 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/3403	AIR OP CRD-V-126/3403 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/3407	AIR OP CRD-V-126/3407 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/3411	AIR OP CRD-V-126/3411 SCRAM INLET	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/3415	AIR OP CRD-V-126/3415 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/3419	AIR CP CRD-V-126/3419 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/3423	AIR OP CRD-V-126/3423 SCRAM INLET	02C12	018015	A	1 3	2 2	0.2				R	N

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	AML	F/O	C	FREQ	TM	HL
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/3427	AIR OP CRD-V-126/3427 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/3431	AIR OP CRD-V-126/3431 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AO-126/3435	AIR OP CRD-V-126/3435 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/3439	AIR OP CRD-V-126/3439 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/3443	AIR OP CRD-V-126/3443 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/3447	AIR OP CRD-V-126/3447 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/3451	AIR OP CRD-V-126/3451 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/3455	AIR OP CRD-V-126/3455 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/3459	AIR OP CRD-V-126/3459 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/3803	AIR OP CRD-V-126/3803 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/3807	AIR OP CRD-V-126/3807 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/3811	AIR OP CRD-V-126/3811 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/3815	AIR OP CRD-V-126/3815 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/3819	AIR OP CRD-V-126/3819 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/3823	AIR OP CRD-V-126/3823 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/3827	AIR OP CRD-V-126/3827 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/3831	AIR OP CRD-V-126/3831 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/3835	AIR OP CRD-V-126/3835 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/3839	AIR OP CRD-V-126/3839 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AO-126/3843	AIR OP CRD-V-126/3843 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/3847	AIR OP CRD-V-126/3847 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AO-126/3851	AIR OP CRD-V-126/3851 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/3855	AIR OP CRD-V-126/3855 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/3859	AIR OP CRD-V-126/3859 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-AO-126/4203	AIR OP CRD-V-126/4203 SCRAM INLET	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/4207	AIR OP CRD-V-126/4207 SCRAM INLET	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/4211	AIR OP CRD-V-126/4211 SCRAM INLET	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/4215	AIR OP CRD-V-126/4215 SCRAM INLET	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/4219	AIR OP CRD-V-126/4219 SCRAM INLET	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/4223	AIR OP CRD-V-126/4223 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/4227	AIR OP CRD-V-126/4227 SCRAM INLET	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/4231	AIR OP CRD-V-126/4231 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AO-126/4235	AIR OP CRD-V-126/4235 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AO-126/4239	AIR OP CRD-V-126/4239 SCRAM INLET	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AO-126/4243	AIR OP CRD-V-126/4243 SCRAM INLET	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AO-126/4247	AIR OP CRD-V-126/4247 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AO-126/4251	AIR OP CRD-V-126/4251 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AO-126/4255	AIR OP CRD-V-126/4255 SCRAM INLET	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AO-126/4259	AIR OP CRD-V-126/4259 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AO-126/4607	AIR OP CRD-V-126/4607 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/4611	AIR OP CRD-V-126/4611 SCRAM INLET	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/4615	AIR OP CRD-V-126/4615 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/4619	AIR OP CRD-V-126/4619 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/4623	AIR OP CRD-V-126/4623 SCRAM INLET	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/4627	AIR OP CRD-V-126/4627 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/4631	AIR OP CRD-V-126/4631 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AO-126/4635	AIR OP CRD-V-126/4635 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AO-126/4639	AIR OP CRD-V-126/4639 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AO-126/4643	AIR OP CRD-V-126/4643 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N

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2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/4647	AIR OP CRD-V-126/4647 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/4651	AIR OP CRD-V-126/4651 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/4655	AIR OP CRD-V-126/4655 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/5011	AIR OP CRD-V-126/5011 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/5015	AIR OP CRD-V-126/5015 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-A0-126/5019	AIR OP CRD-V-126/5019 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/5023	AIR OP CRD-V-126/5023 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/5027	AIR OP CRD-V-126/5027 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/5031	AIR OP CRD-V-126/5031 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/5035	AIR OP CRD-V-126/5035 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-A0-126/5039	AIR OP CRD-V-126/5039 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/5043	AIR OP CRD-V-126/5043 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-A0-126/5047	AIR OP CRD-V-126/5047 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/5051	AIR OP CRD-V-126/5051 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/5415	AIR OP CRD-V-126/5415 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/5419	AIR OP CRD-V-126/5419 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AC-126/5423	AIR OP CRD-V-126/5423 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-A0-126/5427	AIR OP CRD-V-126/5427 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-A0-126/5431	AIR OP CRD-V-126/5431 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/5435	AIR OP CRD-V-126/5435 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-A0-126/5439	AIR OP CRD-V-126/5439 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/5443	AIR OP CRD-V-126/5443 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/5447	AIR OP CRD-V-126/5447 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AC-126/5819	AIR OP CRD-V-126/5819 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							

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CRD-AO-126/5823	AIR OP CRD-V-126/5823 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/5827	AIR OP CRD-V-126/5827 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-A1							
CRD-AO-126/5831	AIR OP CRD-V-126/5831 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AO-126/5835	AIR OP CRD-V-126/5835 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AO-126/5839	AIR OP CRD-V-126/5839 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AO-126/5843	AIR OP CRD-V-126/5843 SCRAM INLET	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-A1							
CRD-AO-127/0219	AIR OP CRD-V-127/0219 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/0223	AIR OP CRD-V-127/0223 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/0227	AIR OP CRD-V-127/0227 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/0231	AIR OP CRD-V-127/0231 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/0235	AIR OP CRD-V-127/0235 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/0239	AIR OP CRD-V-127/0239 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/0243	AIR OP CRD-V-127/0243 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/0615	AIR OP CRD-V-127/0615 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/0619	AIR OP CRD-V-127/0619 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/0623	AIR OP CRD-V-127/0623 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/0627	AIR OP CRD-V-127/0627 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/0631	AIR OP CRD-V-127/0631 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/0635	AIR OP CRD-V-127/0635 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/0639	AIR OP CRD-V-127/0639 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/0643	AIR OP CRD-V-127/0643 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/0647	AIR OP CRD-V-127/0647 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/1011	AIR OP CRD-V-127/1011 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/1015	AIR OP CRD-V-127/1015 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/1019	AIR OP CRD-V-127/1019 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/1023	AIR OP CRD-V-127/1023 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/1027	AIR OP CRD-V-127/1027 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/1031	AIR OP CRD-V-127/1031 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/1035	AIR OP CRD-V-127/1035 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/1039	AIR OP CRD-V-127/1039 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/1043	AIR OP CRD-V-127/1043 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/1047	AIR OP CRD-V-127/1047 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/1051	AIR OP CRD-V-127/1051 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/1407	AIR OP CRD-V-127/1407 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/1411	AIR OP CRD-V-127/1411 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/1415	AIR OP CRD-V-127/1415 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/1419	AIR OP CRD-V-127/1419 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/1423	AIR OP CRD-V-127/1423 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/1427	AIR OP CRD-V-127/1427 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/1431	AIR OP CRD-V-127/1431 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/1435	AIR OP CRD-V-127/1435 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/1439	AIR OP CRD-V-127/1439 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/1443	AIR OP CRD-V-127/1443 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/1447	AIR OP CRD-V-127/1447 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/1451	AIR OP CRD-V-127/1451 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/1455	AIR OP CRD-V-127/1455 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/1803	AIR OP CRD-V-127/1803 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/1807	AIR OP CRD-V-127/1807 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/1811	AIR OP CRD-V-127/1811 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-AO-127/1815	AIR OP CRD-V-127/1815 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/1819	AIR OP CRD-V-127/1819 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/1823	AIR OP CRD-V-127/1823 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/1827	AIR OP CRD-V-127/1827 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/1831	AIR OP CRD-V-127/1831 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/1835	AIR OP CRD-V-127/1835 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/1839	AIR OP CRD-V-127/1839 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/1843	AIR OP CRD-V-127/1843 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/1847	AIR OP CRD-V-127/1847 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/1851	AIR OP CRD-V-127/1851 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/1855	AIR OP CRD-V-127/1855 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/1859	AIR OP CRD-V-127/1859 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/2203	AIR OP CRD-V-127/2203 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/2207	AIR OP CRD-V-127/2207 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/2211	AIR OP CRD-V-127/2211 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/2215	AIR OP CRD-V-127/2215 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/2219	AIR OP CRD-V-127/2219 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/2223	AIR OP CRD-V-127/2223 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/2227	AIR OP CRD-V-127/2227 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/2231	AIR OP CRD-V-127/2231 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/2235	AIR OP CRD-V-127/2235 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/2239	AIR OP CRD-V-127/2239 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/2243	AIR OP CRD-V-127/2243 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/2247	AIR OP CRD-V-127/2247 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/2251	AIR OP CRD-V-127/2251 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TH	HL
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/2255	AIR OP CRD-V-127/2255 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AC-127/2259	AIR OP CRD-V-127/2259 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AC-127/2603	AIR OP CRD-V-127/2603 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AC-127/2607	AIR OP CRD-V-127/2607 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/2611	AIR OP CRD-V-127/2611 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AC-127/2615	AIR OP CRD-V-127/2615 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/2619	AIR OP CRD-V-127/2619 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AC-127/2623	AIR OP CRD-V-127/2623 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AC-127/2627	AIR OP CRD-V-127/2627 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AC-127/2631	AIR OP CRD-V-127/2631 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AC-127/2635	AIR OP CRD-V-127/2635 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/2639	AIR OP CRD-V-127/2639 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AC-127/2643	AIR OP CRD-V-127/2643 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/2647	AIR OP CRD-V-127/2647 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AC-127/2651	AIR OP CRD-V-127/2651 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/2655	AIR OP CRD-V-127/2655 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AC-127/2659	AIR OP CRD-V-127/2659 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AC-127/3003	AIR OP CRD-V-127/3003 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AC-127/3007	AIR OP CRD-V-127/3007 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AC-127/3011	AIR OP CRD-V-127/3011 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AC-127/3015	AIR OP CRD-V-127/3015 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AC-127/3019	AIR OP CRD-V-127/3019 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AC-127/3023	AIR OP CRD-V-127/3023 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AC-127/3027	AIR OP CRD-V-127/3027 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							

EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-AO-127/3031	2	AIR OP CRD-V-127/3031 SCRAM EXHST	R 522 K2/8.4	02C12	R290	018015	A	1 3	83470-B2	2 2	0 2				R	N
CRD-AO-127/3035	2	AIR OP CRD-V-127/3035 SCRAM EXHST	R 522 K2/8.4	02C12	R290	018015	A	1 3	83470-B2	2 2	0 2				R	N
CRD-AO-127/3039	2	AIR OP CRD-V-127/3039 SCRAM EXHST	R 522 K2/8.4	02C12	R290	018015	A	1 3	83470-B2	2 2	0 2				R	N
CRD-AO-127/3043	2	AIR OP CRD-V-127/3043 SCRAM EXHST	R 522 K2/8.4	02C12	R290	018015	A	1 3	83470-B2	2 2	0 2				R	N
CRD-AO-127/3047	2	AIR OP CRD-V-127/3047 SCRAM EXHST	R 522 K2/8.4	02C12	R290	018015	A	1 3	83470-B2	2 2	0 2				R	N
CRD-AO-127/3051	2	AIR OP CRD-V-127/3051 SCRAM EXHST	R 522 K2/8.4	02C12	R290	018015	A	1 3	83470-B2	2 2	0 2				R	N
CRD-AO-127/3055	2	AIR OP CRD-V-127/3055 SCRAM EXHST	R 522 K2/8.4	02C12	R290	018015	A	1 3	83470-B2	2 2	0 2				R	N
CRD-AO-127/3059	2	AIR OP CRD-V-127/3059 SCRAM EXHST	R 522 K2/8.4	02C12	R290	018015	A	1 3	83470-B2	2 2	0 2				R	N
CRD-AO-127/3403	2	AIR OP CRD-V-127/3403 SCRAM EXHST	R 522 L5/8.4	02C12	R290	018015	A	1 3	83470-B2	2 2	0 2				R	N
CRD-AO-127/3407	2	AIR OP CRD-V-127/3407 SCRAM EXHST	R 522 L5/8.4	02C12	R290	018015	A	1 3	83470-B2	2 2	0 2				R	N
CRD-AO-127/3411	2	AIR OP CRD-V-127/3411 SCRAM EXHST	R 522 L5/8.4	02C12	R290	018015	A	1 3	83470-B2	2 2	0 2				R	N
CRD-AO-127/3415	2	AIR OP CRD-V-127/3415 SCRAM EXHST	R 522 L5/8.4	02C12	R290	018015	A	1 3	83470-B2	2 2	0 2				R	N
CRD-AO-127/3419	2	AIR OP CRD-V-127/3419 SCRAM EXHST	R 522 L5/8.4	02C12	R290	018015	A	1 3	83470-B2	2 2	0 2				R	N
CRD-AO-127/3423	2	AIR OP CRD-V-127/3423 SCRAM EXHST	R 522 L5/8.4	02C12	R290	018015	A	1 3	83470-B2	2 2	0 2				R	N
CRD-AO-127/3427	2	AIR OP CRD-V-127/3427 SCRAM EXHST	R 522 L5/8.4	02C12	R290	018015	A	1 3	83470-B2	2 2	0 2				R	N
CRD-AO-127/3431	2	AIR OP CRD-V-127/3431 SCRAM EXHST	R 522 K2/8.4	02C12	R290	018015	A	1 3	83470-B2	2 2	0 2				R	N
CRD-AO-127/3435	2	AIR OP CRD-V-127/3435 SCRAM EXHST	R 522 K2/8.4	02C12	R290	018015	A	1 3	83470-B2	2 2	0 2				R	N
CRD-AO-127/3439	2	AIR OP CRD-V-127/3439 SCRAM EXHST	R 522 K2/8.4	02C12	R290	018015	A	1 3	83470-B2	2 2	0 2				R	N
CRD-AO-127/3443	2	AIR OP CRD-V-127/3443 SCRAM EXHST	R 522 K2/8.4	02C12	R290	018015	A	1 3	83470-B2	2 2	0 2				R	N
CRD-AO-127/3447	2	AIR OP CRD-V-127/3447 SCRAM EXHST	R 522 K2/8.4	02C12	R290	018015	A	1 3	83470-B2	2 2	0 2				R	N
CRD-AO-127/3451	2	AIR OP CRD-V-127/3451 SCRAM EXHST	R 522 K2/8.4	02C12	R290	018015	A	1 3	83470-B2	2 2	0 2				R	N
CRD-AO-127/3455	2	AIR OP CRD-V-127/3455 SCRAM EXHST	R 522 K2/8.4	02C12	R290	018015	A	1 3	83470-B2	2 2	0 2				R	N
CRD-AO-127/3459	2	AIR OP CRD-V-127/3459 SCRAM EXHST	R 522 K2/8.4	02C12	R290	018015	A	1 3	83470-B2	2 2	0 2				R	N
CRD-AO-127/3803	2	AIR OP CRD-V-127/3803 SCRAM EXHST	R 522 L5/8.4	02C12	R290	018015	A	1 3	83470-B2	2 2	0 2				R	N
CRD-AO-127/3807		AIR OP CRD-V-127/3807 SCRAM EXHST		02C12		018015	A	1 3		2 2	0 2				R	N

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 L5/8.4	R290			83470-B2							
CRD-AC-127/3811	AIR CP CRD-V-127/3811 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AC-127/3815	AIR OP CRD-V-127/3815 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AC-127/3819	AIR OP CRD-V-127/3819 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AC-127/3823	AIR OP CRC-V-127/3823 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AC-127/3827	AIR OP CRD-V-127/3827 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/3831	AIR OP CRD-V-127/3831 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/3835	AIR OP CRD-V-127/3835 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AC-127/3839	AIR OP CRD-V-127/3839 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AC-127/3843	AIR OP CRD-V-127/3843 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/3847	AIR OP CRD-V-127/3847 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AC-127/3851	AIR OP CRD-V-127/3851 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AU-127/3855	AIR OP CRD-V-127/3855 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AC-127/3859	AIR OP CRD-V-127/3859 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AC-127/4203	AIR OP CRC-V-127/4203 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AC-127/4207	AIR OP CRD-V-127/4207 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AC-127/4211	AIR OP CRC-V-127/4211 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AC-127/4215	AIR OP CRD-V-127/4215 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AC-127/4219	AIR OP CRD-V-127/4219 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AC-127/4223	AIR OP CRD-V-127/4223 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AC-127/4227	AIR OP CRC-V-127/4227 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/4231	AIR OP CRD-V-127/4231 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AG-127/4235	AIR OP CRD-V-127/4235 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AC-127/4239	AIR OP CRD-V-127/4239 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/4243	AIR OP CRD-V-127/4243 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-AO-127/4247	AIR OP CRD-V-127/4247 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/4251	AIR OP CRD-V-127/4251 SCRAM EXHST	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/4255	AIR OP CRD-V-127/4255 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/4259	AIR OP CRD-V-127/4259 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/4607	AIR OP CRD-V-127/4607 SCRAM EXHST	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/4611	AIR OP CRD-V-127/4611 SCRAM EXHST	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/4615	AIR OP CRD-V-127/4615 SCRAM EXHST	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/4619	AIR OP CRD-V-127/4619 SCRAM EXHST	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/4623	AIR OP CRD-V-127/4623 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/4627	AIR OP CRD-V-127/4627 SCRAM EXHST	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/4631	AIR OP CRD-V-127/4631 SCRAM EXHST	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/4635	AIR OP CRD-V-127/4635 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/4639	AIR OP CRD-V-127/4639 SCRAM EXHST	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/4643	AIR OP CRD-V-127/4643 SCRAM EXHST	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/4647	AIR OP CRD-V-127/4647 SCRAM EXHST	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/4651	AIR OP CRD-V-127/4651 SCRAM EXHST	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/4655	AIR OP CRD-V-127/4655 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/5011	AIR OP CRD-V-127/5011 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/5015	AIR OP CRD-V-127/5015 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/5019	AIR OP CRD-V-127/5019 SCRAM EXHST	02C12	018015	A	1 3	2 2	0.2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/5023	AIR OP CRD-V-127/5023 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/5027	AIR OP CRD-V-127/5027 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/5031	AIR OP CRD-V-127/5031 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/5035	AIR OP CRD-V-127/5035 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/5039	AIR OP CRD-V-127/5039 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 K2/8.4	R290			83470-B2							
CRD-AC-127/5043	AIR OP CRD-V-127/5043 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AC-127/5047	AIR OP CRD-V-127/5047 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AC-127/5051	AIR OP CRD-V-127/5051 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AC-127/5415	AIR OP CRD-V-127/5415 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AC-127/5419	AIR OP CRD-V-127/5419 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/5423	AIR OP CRD-V-127/5423 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AC-127/5427	AIR OP CRD-V-127/5427 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AC-127/5431	AIR OP CRD-V-127/5431 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/5435	AIR OP CRD-V-127/5435 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AC-127/5439	AIR OP CRD-V-127/5439 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AC-127/5443	AIR OP CRD-V-127/5443 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AC-127/5447	AIR OP CRD-V-127/5447 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-127/5819	AIR OP CRD-V-127/5819 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AC-127/5823	AIR OP CRD-V-127/5823 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AO-127/5827	AIR OP CRD-V-127/5827 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 L5/8.4	R290			83470-B2							
CRD-AC-127/5831	AIR OP CRD-V-127/5831 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AC-127/5835	AIR OP CRD-V-127/5835 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AC-127/5839	AIR OP CRD-V-127/5839 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AC-127/5843	AIR OP CRD-V-127/5843 SCRAM EXHST	02C12	018015	A	1 3	2 2	0 2				R	N
2	R 522 K2/8.4	R290			83470-B2							
CRD-AO-2A	AIR OPERATOR CRD-FCV-2A	02			2 1							
2	R 524 M.6/3.5	I208			P 200164D							
CRD-AC-2B	AIR OPERATOR CRD-FCV-2B	02			2 1							
2	R 524 M.6/3.5	I208			P 200164D							
CRD-DRIVE-0219	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-0223	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-0227	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							

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CRD-DRIVE-0231	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-0235	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-0239	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-0243	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-0615	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-0619	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-0623	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-0627	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-0631	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-0635	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-0639	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-0643	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-0647	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-1011	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-1015	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-1019	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-1023	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-1027	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-1031	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-1035	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-1039	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-1043	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-1047	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-1051	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-1407	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y

WASHINGTON PUBLIC POWER SUPPLY SYSTEM
SAFETY RELATED EQUIPMENT LIST FOR NRC-SQRT

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1411	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1415	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1419	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1423	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1427	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1431	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1435	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1439	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1443	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1447	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1451	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1455	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1803	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1807	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1811	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1815	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1819	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1823	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1827	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1831	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1835	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1839	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1843	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1847	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							

EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-DRIVE-1851	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	6080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRIVE-1855	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	6080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRIVE-1859	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	6080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRIVE-2203	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	6080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRIVE-2207	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	6080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRIVE-2211	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	6080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRIVE-2215	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	6080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRIVE-2219	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	6080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRIVE-2223	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	6080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRIVE-2227	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	6080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRIVE-2231	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	6080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRIVE-2235	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	6080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRIVE-2239	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	6080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRIVE-2243	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	6080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRIVE-2247	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	6080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRIVE-2251	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	6080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRIVE-2255	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	6080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRIVE-2259	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	6080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRIVE-2603	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	6080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRIVE-2607	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	6080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRIVE-2611	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	6080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRIVE-2615	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	6080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRIVE-2619	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	6080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRIVE-2623	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	6080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRIVE-2627		DRIVE ASSM. CNTRL. ROD DR.		02B13		092001	A	1 3		1 1	0 2					Y

EQUIPMENT NO.	DESCRIPTION	CONTRACT	QID	QS	USE	TEST	ANL	F/O	C	FREQ	TM	HL
LV	PLANT LOCATION	MFG			MFG MODEL NO.							
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRIVE-2631	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRIVE-2635	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRIVE-2639	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRIVE-2643	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRIVE-2647	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRIVE-2651	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRIVE-2655	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRIVE-2659	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRIVE-3003	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRIVE-3007	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRIVE-3011	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRIVE-3015	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRIVE-3019	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRIVE-3023	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRIVE-3027	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRIVE-3031	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRIVE-3035	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRIVE-3039	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRIVE-3043	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRIVE-3047	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRIVE-3051	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRIVE-3055	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRIVE-3059	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRIVE-3403	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							

EQUIPMENT NO.	DESCRIPTION	CONTRACT	QID	QS	USE	TEST	ANL	F/O	C	FREQ	TM	HL
LV	PLANT LOCATION	MFG			MFG MODEL NO.							
CRD-DRIVE-3407	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0.2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-3411	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0.2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-3415	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-3419	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0.2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-3423	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0.2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-3427	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-3431	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-3435	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0.2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-3439	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0.2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-3443	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0.2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-3447	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0.2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-3451	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0.2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-3455	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0.2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-3459	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0.2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-3803	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-3807	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-3811	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0.2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-3815	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-3819	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0.2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-3823	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-3827	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-3831	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-3835	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-3839	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-3843	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-3847	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-3851	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-3855	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-3859	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-4203	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-4207	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-4211	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-4215	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-4219	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-4223	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-4227	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-4231	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-4235	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-4239	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-4243	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-4247	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-4251	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-4255	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-4259	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0.2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-4607	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-4611	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-4615	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-4619	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-4623	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							

EQUIPMENT NO. LV	DESCRIPTION PLANT LOCATION	CONTRACT MFG	QID	QS	USE MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-DRIVE-4627 2	DRIVE ASSM. CNTRL. ROD DR. C 501 UNDER VESSEL	02B13 6080	092001	A	1 3 7RDB144C	1 1	0 2					Y
CRD-DRIVE-4631 2	DRIVE ASSM. CNTRL. ROD DR. C 501 UNDER VESSEL	02B13 6080	092001	A	1 3 7RDB144C	1 1	0 2					Y
CRD-DRIVE-4635 2	DRIVE ASSM. CNTRL. ROD DR. C 501 UNDER VESSEL	02B13 6080	092001	A	1 3 7RDB144C	1 1	0 2					Y
CRD-DRIVE-4639 2	DRIVE ASSM. CNTRL. ROD DR. C 501 UNDER VESSEL	02B13 6080	092001	A	1 3 7RDB144C	1 1	0 2					Y
CRD-DRIVE-4643 2	DRIVE ASSM. CNTRL. ROD DR. C 501 UNDER VESSEL	02B13 6080	092001	A	1 3 7RDB144C	1 1	0 2					Y
CRD-DRIVE-4647 2	DRIVE ASSM. CNTRL. ROD DR. C 501 UNDER VESSEL	02B13 6080	092001	A	1 3 7RDB144C	1 1	0 2					Y
CRD-DRIVE-4651 2	DRIVE ASSM. CNTRL. ROD DR. C 501 UNDER VESSEL	02B13 6080	092001	A	1 3 7RDB144C	1 1	0 2					Y
CRD-DRIVE-4655 2	DRIVE ASSM. CNTRL. ROD DR. C 501 UNDER VESSEL	02B13 6080	092001	A	1 3 7RDB144C	1 1	0 2					Y
CRD-DRIVE-5011 2	DRIVE ASSM. CNTRL. ROD DR. C 501 UNDER VESSEL	02B13 6080	092001	A	1 3 7RDB144C	1 1	0 2					Y
CRD-DRIVE-5015 2	DRIVE ASSM. CNTRL. ROD DR. C 501 UNDER VESSEL	02B13 6080	092001	A	1 3 7RDB144C	1 1	0 2					Y
CRD-DRIVE-5019 2	DRIVE ASSM. CNTRL. ROD DR. C 501 UNDER VESSEL	02B13 6080	092001	A	1 3 7RDB144C	1 1	0 2					Y
CRD-DRIVE-5023 2	DRIVE ASSM. CNTRL. ROD DR. C 501 UNDER VESSEL	02B13 6080	092001	A	1 3 7RDB144C	1 1	0 2					Y
CRD-DRIVE-5027 2	DRIVE ASSM. CNTRL. ROD DR. C 501 UNDER VESSEL	02B13 6080	092001	A	1 3 7RDB144C	1 1	0 2					Y
CRD-DRIVE-5031 2	DRIVE ASSM. CNTRL. ROD DR. C 501 UNDER VESSEL	02B13 6080	092001	A	1 3 7RDB144C	1 1	0 2					Y
CRD-DRIVE-5035 2	DRIVE ASSM. CNTRL. ROD DR. C 501 UNDER VESSEL	02B13 6080	092001	A	1 3 7RDB144C	1 1	0 2					Y
CRD-DRIVE-5039 2	DRIVE ASSM. CNTRL. ROD DR. C 501 UNDER VESSEL	02B13 6080	092001	A	1 3 7RDB144C	1 1	0 2					Y
CRD-DRIVE-5043 2	DRIVE ASSM. CNTRL. ROD DR. C 501 UNDER VESSEL	02B13 6080	092001	A	1 3 7RDB144C	1 1	0 2					Y
CRD-DRIVE-5047 2	DRIVE ASSM. CNTRL. ROD DR. C 501 UNDER VESSEL	02B13 6080	092001	A	1 3 7RDB144C	1 1	0 2					Y
CRD-DRIVE-5051 2	DRIVE ASSM. CNTRL. ROD DR. C 501 UNDER VESSEL	02B13 6080	092001	A	1 3 7RDB144C	1 1	0 2					Y
CRD-DRIVE-5415 2	DRIVE ASSM. CNTRL. ROD DR. C 501 UNDER VESSEL	02B13 6080	092001	A	1 3 7RDB144C	1 1	0 2					Y
CRD-DRIVE-5419 2	DRIVE ASSM. CNTRL. ROD DR. C 501 UNDER VESSEL	02B13 6080	092001	A	1 3 7RDB144C	1 1	0 2					Y
CRD-DRIVE-5423 2	DRIVE ASSM. CNTRL. ROD DR. C 501 UNDER VESSEL	02B13 6080	092001	A	1 3 7RDB144C	1 1	0 2					Y
CRD-DRIVE-5427 2	DRIVE ASSM. CNTRL. ROD DR. C 501 UNDER VESSEL	02B13 6080	092001	A	1 3 7RDB144C	1 1	0 2					Y
CRD-DRIVE-5431 2	DRIVE ASSM. CNTRL. ROD DR. C 501 UNDER VESSEL	02B13 6080	092001	A	1 3 7RDB144C	1 1	0 2					Y
CRD-DRIVE-5435	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-5439	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-5443	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0.2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-5447	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0.2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-5819	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-5823	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-5827	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-5831	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0.2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-5835	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0.2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-5839	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-DRIVE-5843	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0.2					Y
2	C 501 UNDER VESSEL	6080			7RDB144C							
CRD-FCV-2A	1.5" GLOBE (AO) CRD FLOW CONTROL	02C12	133007		2 3							
2	R 523 M.6/3.5	H035			V-501L-1A							
CRD-FCV-2A+					2 3							
1	R 523 M.6/3.5											
CRD-FCV-2B	1.5" GLOBE (AO) CRD FLOW CONTROL	02C12	133007		2 3							
2	R 523 M.6/3.5	H035			V-501L-1A							
CRD-FCV-2B+					2 3							
1	R 523 M.6/3.5											
CRD-HCU-0219	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E500G1							
CRD-HCU-0223	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0.2			02		Y
1	R 522 L5/8.4	6080			761E500G1							
CRD-HCU-0227	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E500G1							
CRD-HCU-0231	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E500G1							
CRD-HCU-0235	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	6080			761E500G1							
CRD-HCU-0239	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0.2			02		Y
1	R 522 K2/8.4	6080			761E500G1							
CRD-HCU-0243	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	6080			761E500G1							
CRD-HCU-0615	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E500G1							
CRD-HCU-0619	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E500G1							
CRD-HCU-0623	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E500G1							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-HCL-0627 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 L5/8.4	02C12 / 6080	167001	B	1 3 / 761E50061	1 1	0 2			02		Y
CRD-HCL-0631 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 L5/8.4	02C12 / 6080	167001	B	1 3 / 761E50061	1 1	0 2			02		Y
CRD-HCL-0635 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/8.4	02C12 / 6080	167001	B	1 3 / 761E50061	1 1	0 2			02		Y
CRD-HCL-0639 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/8.4	02C12 / 6080	167001	B	1 3 / 761E50061	1 1	0 2			02		Y
CRD-HCL-0643 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/8.4	02C12 / 6080	167001	B	1 3 / 761E50061	1 1	0 2			02		Y
CRD-HCL-0647 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/8.4	02C12 / 6080	167001	B	1 3 / 761E50061	1 1	0 2			02		Y
CRD-HCL-1011 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 L5/8.4	02C12 / 6080	167001	B	1 3 / 761E50061	1 1	0 2			02		Y
CRD-HCL-1015 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 L5/8.4	02C12 / 6080	167001	B	1 3 / 761E50061	1 1	0 2			02		Y
CRD-HCL-1019 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 L5/8.4	02C12 / 6080	167001	B	1 3 / 761E50061	1 1	0 2			02		Y
CRD-HCL-1023 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 L5/8.4	02C12 / 6080	167001	B	1 3 / 761E50061	1 1	0 2			02		Y
CRD-HCL-1027 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 L5/8.4	02C12 / 6080	167001	B	1 3 / 761E50061	1 1	0 2			02		Y
CRD-HCL-1031 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 L5/8.4	02C12 / 6080	167001	B	1 3 / 761E50061	1 1	0 2			02		Y
CRD-HCL-1035 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/8.4	02C12 / 6080	167001	B	1 3 / 761E50061	1 1	0 2			02		Y
CRD-HCL-1039 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/8.4	02C12 / 6080	167001	B	1 3 / 761E50061	1 1	0 2			02		Y
CRD-HCL-1043 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/8.4	02C12 / 6080	167001	B	1 3 / 761E50061	1 1	0 2			02		Y
CRD-HCL-1047 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/8.4	02C12 / 6080	167001	B	1 3 / 761E50061	1 1	0 2			02		Y
CRD-HCL-1051 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/8.4	02C12 / 6080	167001	B	1 3 / 761E50061	1 1	0 2			02		Y
CRD-HCL-1407 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 L5/8.4	02C12 / 6080	167001	B	1 3 / 761E50061	1 1	0 2			02		Y
CRD-HCL-1411 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 L5/8.4	02C12 / 6080	167001	B	1 3 / 761E50061	1 1	0 2			02		Y
CRD-HCL-1415 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 L5/8.4	02C12 / 6080	167001	B	1 3 / 761E50061	1 1	0 2			02		Y
CRD-HCL-1419 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 L5/8.4	02C12 / 6080	167001	B	1 3 / 761E50061	1 1	0 2			02		Y
CRD-HCL-1423 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 L5/8.4	02C12 / 6080	167001	B	1 3 / 761E50061	1 1	0 2			02		Y
CRD-HCL-1427 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 L5/8.4	02C12 / 6080	167001	B	1 3 / 761E50061	1 1	0 2			02		Y
CRD-HCL-1431 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 L5/8.4	02C12 / 6080	167001	B	1 3 / 761E50061	1 1	0 2			02		Y
CRD-HCL-1435	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
1	R 522 K2/8.4	6080			761E50061							
CRD-HCU-1439	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	6080			761E50061							
CRD-HCU-1443	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	6080			761E50061							
CRD-HCU-1447	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	6080			761E50061							
CRD-HCU-1451	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	6080			761E50061							
CRD-HCU-1455	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	6080			761E50061							
CRD-HCU-1803	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E50061							
CRD-HCU-1807	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E50061							
CRD-HCU-1811	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E50061							
CRD-HCU-1815	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E50061							
CRD-HCU-1819	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E50061							
CRD-HCU-1823	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E50061							
CRD-HCU-1827	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E50061							
CRD-HCU-1831	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E50061							
CRD-HCU-1835	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	6080			761E50061							
CRD-HCU-1839	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	6080			761E50061							
CRD-HCU-1843	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	6080			761E50061							
CRD-HCU-1847	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	6080			761E50061							
CRD-HCU-1851	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	6080			761E50061							
CRD-HCU-1855	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	6080			761E50061							
CRD-HCU-1859	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	6080			761E50061							
CRD-HCU-2203	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E50061							
CRD-HCU-2207	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E50061							
CRD-HCU-2211	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E50061							
CRD-HCU-2215	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E50061							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-HCL-2219	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E50061							
CRD-HCL-2223	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E50061							
CRD-HCL-2227	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E50061							
CRD-HCL-2231	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E50061							
CRD-HCL-2235	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	6080			761E50061							
CRD-HCL-2239	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	6080			761E50061							
CRD-HCL-2243	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	6080			761E50061							
CRD-HCL-2247	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	6080			761E50061							
CRD-HCL-2251	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	6080			761E50061							
CRD-HCL-2255	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	6080			761E50061							
CRD-HCL-2259	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	6080			761E50061							
CRD-HCL-2603	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E50061							
CRD-HCL-2607	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E50061							
CRD-HCL-2611	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E50061							
CRD-HCL-2615	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E50061							
CRD-HCL-2619	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E50061							
CRD-HCL-2623	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E50061							
CRD-HCL-2627	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E50061							
CRD-HCL-2631	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E50061							
CRD-HCL-2635	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	6080			761E50061							
CRD-HCL-2639	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	6080			761E50061							
CRD-HCL-2643	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	6080			761E50061							
CRD-HCL-2647	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	6080			761E50061							
CRD-HCL-2651	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	6080			761E50061							
CRD-HCL-2655	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
1	R 522 K2/8.4	6080			761E50061							
CRD-HCL-2659	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0.2			02		Y
1	R 522 K2/8.4	6080			761E50061							
CRD-HCL-3003	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0.2			02		Y
1	R 522 L5/8.4	6080			761E50061							
CRD-HCL-3007	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E50061							
CRD-HCL-3011	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E50061							
CRD-HCL-3015	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E50061							
CRD-HCL-3019	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E50061							
CRD-HCL-3023	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0.2			02		Y
1	R 522 L5/8.4	6080			761E50061							
CRD-HCL-3027	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	6080			761E50061							
CRD-HCL-3031	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0.2			02		Y
1	R 522 K2/3.7	6080			761E50061							
CRD-HCL-3035	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0.2			02		Y
1	R 522 K2/3.7	6080			761E50001							
CRD-HCL-3039	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0.2			02		Y
1	R 522 K2/3.7	6080			761E50061							
CRD-HCU-3043	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	6080			761E50061							
CRD-HCU-3047	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0.2			02		Y
1	R 522 K2/3.7	6080			761E50061							
CRD-HCL-3051	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	6080			761E50061							
CRD-HCL-3055	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	6080			761E50061							
CRD-HCU-3059	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	6080			761E50061							
CRD-HCL-3403	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/3.7	6080			761E50061							
CRD-HCL-3407	CRD HYCRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/3.7	6080			761E50061							
CRD-HCL-3411	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/3.7	6080			761E50061							
CRD-HCL-3415	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/3.7	6080			761E50061							
CRD-HCU-3419	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/3.7	6080			761E50061							
CRD-HCL-3423	CPD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/3.7	6080			761E50061							
CRD-HCL-3427	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/3.7	6080			761E50061							
CRD-HCL-3431	CRD HYDRALLIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	6080			761E50061							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-HCU-3435 1	CRD HYDRAULIC CONTROL UNIT ASSY R 522 K2/3.7	02C12 6080	167001	B	1 3 761E50061	1 1	0 2			02		Y
CRD-HCU-3439 1	CRD HYDRAULIC CONTROL UNIT ASSY R 522 K2/3.7	02C12 6080	167001	B	1 3 761E50061	1 1	0 2			02		Y
CRD-HCU-3443 1	CRD HYDRAULIC CONTROL UNIT ASSY R 522 K2/3.7	02C12 6080	167001	B	1 3 761E50061	1 1	0 2			02		Y
CRD-HCU-3447 1	CRD HYDRAULIC CONTROL UNIT ASSY R 522 K2/3.7	02C12 6080	167001	B	1 3 761E50061	1 1	0 2			02		Y
CRD-HCU-3451 1	CRD HYDRAULIC CONTROL UNIT ASSY R 522 K2/3.7	02C12 6080	167001	B	1 3 761E50061	1 1	0 2			02		Y
CRD-HCU-3455 1	CRD HYDRAULIC CONTROL UNIT ASSY R 522 K2/3.7	02C12 6080	167001	B	1 3 761E50061	1 1	0 2			02		Y
CRD-HCU-3459 1	CRD HYDRAULIC CONTROL UNIT ASSY R 522 K2/3.7	02C12 6080	167001	B	1 3 761E50061	1 1	0 2			02		Y
CRD-HCU-3803 1	CRD HYDRAULIC CONTROL UNIT ASSY R 522 L5/3.7	02C12 6080	167001	B	1 3 761E50061	1 1	0 2			02		Y
CRD-HCU-3807 1	CRD HYDRAULIC CONTROL UNIT ASSY R 522 L5/3.7	02C12 6080	167001	B	1 3 761E50061	1 1	0 2			02		Y
CRD-HCU-3811 1	CRD HYDRAULIC CONTROL UNIT ASSY R 522 L5/3.7	02C12 6080	167001	B	1 3 761E50061	1 1	0 2			02		Y
CRD-HCU-3815 1	CRD HYDRAULIC CONTROL UNIT ASSY R 522 L5/3.7	02C12 6080	167001	B	1 3 761E50061	1 1	0 2			02		Y
CRD-HCU-3819 1	CRD HYDRAULIC CONTROL UNIT ASSY R 522 L5/3.7	02C12 6080	167001	B	1 3 761E50061	1 1	0 2			02		Y
CRD-HCU-3823 1	CRD HYDRAULIC CONTROL UNIT ASSY R 522 L5/3.7	02C12 6080	167001	B	1 3 761E50061	1 1	0 2			02		Y
CRD-HCU-3827 1	CRD HYDRAULIC CONTROL UNIT ASSY R 522 L5/3.7	02C12 6080	167001	B	1 3 761E50061	1 1	0 2			02		Y
CRD-HCU-3831 1	CRD HYDRAULIC CONTROL UNIT ASSY R 522 K2/3.7	02C12 6080	167001	B	1 3 761E50061	1 1	0 2			02		Y
CRD-HCU-3835 1	CRD HYDRAULIC CONTROL UNIT ASSY R 522 K2/3.7	02C12 6080	167001	B	1 3 761E50061	1 1	0 2			02		Y
CRD-HCU-3839 1	CRD HYDRAULIC CONTROL UNIT ASSY R 522 K2/3.7	02C12 6080	167001	B	1 3 761E50061	1 1	0 2			02		Y
CRD-HCU-3843 1	CRD HYDRAULIC CONTROL UNIT ASSY R 522 K2/3.7	02C12 6080	167001	B	1 3 761E50061	1 1	0 2			02		Y
CRD-HCU-3847 1	CRD HYDRAULIC CONTROL UNIT ASSY R 522 K2/3.7	02C12 6080	167001	B	1 3 761E50061	1 1	0 2			02		Y
CRD-HCU-3851 1	CRD HYDRAULIC CONTROL UNIT ASSY R 522 K2/3.7	02C12 6080	167001	B	1 3 761E50061	1 1	0 2			02		Y
CRD-HCU-3855 1	CRD HYDRAULIC CONTROL UNIT ASSY R 522 K2/3.7	02C12 6080	167001	B	1 3 761E50061	1 1	0 2			02		Y
CRD-HCU-3859 1	CRD HYDRAULIC CONTROL UNIT ASSY R 522 K2/3.7	02C12 6080	167001	B	1 3 761E50061	1 1	0 2			02		Y
CRD-HCU-4203 1	CRD HYDRAULIC CONTROL UNIT ASSY R 522 L5/3.7	02C12 6080	167001	B	1 3 761E50061	1 1	0 2			02		Y
CRD-HCU-4207 1	CRD HYDRAULIC CONTROL UNIT ASSY R 522 L5/3.7	02C12 6080	167001	B	1 3 761E50061	1 1	0 2			02		Y
CRD-HCU-4211	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y

EQUIPMENT NO.	DESCRIPTION	CONTRACT	QID	QS	USE	TEST	ANL	F/O	C	FREQ	TM	HL
LV	PLANT LOCATION	MFG			MFG MODEL NO.							
1	R 522 L5/3.7	6080			761E50061							
CRD-HCL-4215	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/3.7	6080			761E50061							
CRD-HCL-4219	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0.2			02		Y
1	R 522 L5/3.7	6080			761E50061							
CRD-HCL-4223	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/3.7	6080			761E50061							
CRD-HCU-4227	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0.2			02		Y
1	R 522 L5/3.7	6080			761E50061							
CRD-HCL-4231	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0.2			02		Y
1	R 522 K2/3.7	6080			761E50061							
CRD-HCL-4235	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	6080			761E50061							
CRD-HCL-4239	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0.2			02		Y
1	R 522 K2/3.7	6080			761E50061							
CRD-HCL-4243	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	6080			761E50061							
CRD-HCL-4247	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	6080			761E50061							
CRD-HCL-4251	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0.2			02		Y
1	R 522 K2/3.7	6080			761E50061							
CRD-HCL-4255	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0.2			02		Y
1	R 522 K2/3.7	6080			761E50061							
CRD-HCL-4259	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	6080			761E50061							
CRD-HCL-4607	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0.2			02		Y
1	R 522 L5/3.7	6080			761E50061							
CRD-HCL-4611	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0.2			02		Y
1	R 522 L5/3.7	6080			761E50061							
CRD-HCL-4615	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/3.7	6080			761E50061							
CRD-HCL-4619	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0,2			02		Y
1	R 522 L5/3.7	6080			761E50061							
CRD-HCU-4623	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/3.7	6080			761E50061							
CRD-HCL-4627	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/3.7	6080			761E50061							
CRD-HCU-4631	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0.2			02		Y
1	R 522 K2/3.7	6080			761E50061							
CRD-HCL-4635	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	6080			761E50061							
CRD-HCL-4639	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	6080			761E50061							
CRD-HCL-4643	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	6080			761E50061							
CRD-HCL-4647	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0.2			02		Y
1	R 522 K2/3.7	6080			761E50061							
CRD-HCL-4651	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	6080			761E50061							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE	TEST	ANL	F/O	C	FREQ	TM	HL	MFG MODEL NO.
CRD-HCL-4655 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/3.7	02C12 / 6080	167001	B	1 3	1 1	0 2			02		Y	761E50061
CRD-HCL-5011 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 L5/3.7	02C12 / 6080	167001	B	1 3	1 1	0 2			02		Y	761E50061
CRD-HCL-5015 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 L5/3.7	02C12 / 6080	167001	B	1 3	1 1	0 2			02		Y	761E50061
CRD-HCL-5019 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 L5/3.7	02C12 / 6080	167001	B	1 3	1 1	0 2			02		Y	761E50061
CRD-HCL-5023 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 L5/3.7	02C12 / 6080	167001	B	1 3	1 1	0 2			02		Y	761E50061
CRD-HCL-5027 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 L5/3.7	02C12 / 6080	167001	B	1 3	1 1	0 2			02		Y	761E50061
CRD-HCL-5031 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/3.7	02C12 / 6080	167001	B	1 3	1 1	0.2			02		Y	761E50061
CRD-HCL-5035 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/3.7	02C12 / 6080	167001	B	1 3	1 1	0.2			02		Y	761E50061
CRD-HCU-5039 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/3.7	02C12 / 6080	167001	B	1 3	1 1	0 2			02		Y	761E50061
CRD-HCU-5043 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/3.7	02C12 / 6080	167001	B	1 3	1 1	0.2			02		Y	761E50061
CRD-HCU-5047 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/3.7	02C12 / 6080	167001	B	1 3	1 1	0 2			02		Y	761E50061
CRD-HCU-5051 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/3.7	02C12 / 6080	167001	B	1 3	1 1	0 2			02		Y	761E50061
CRD-HCU-5415 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 L5/3.7	02C12 / 6080	167001	B	1 3	1 1	0.2			02		Y	761E50061
CRD-HCL-5419 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 L5/3.7	02C12 / 6080	167001	B	1 3	1 1	0.2			02		Y	761E50061
CRD-HCU-5423 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 L5/3.7	02C12 / 6080	167001	B	1 3	1 1	0 2			02		Y	761E50061
CRD-HCL-5427 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 L5/3.7	02C12 / 6080	167001	B	1 3	1 1	0.2			02		Y	761E50061
CRD-HCL-5431 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/3.7	02C12 / 6080	167001	B	1 3	1 1	0 2			02		Y	761E50061
CRD-HCL-5435 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/3.7	02C12 / 6080	167001	B	1 3	1 1	0 2			02		Y	761E50061
CRD-HCL-5439 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/3.7	02C12 / 6080	167001	B	1 3	1 1	0.2			02		Y	761E50061
CRD-HCU-5443 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/3.7	02C12 / 6080	167001	B	1 3	1 1	0.2			02		Y	761E50061
CRD-HCL-5447 / 1	CRD HYDRALLIC CONTROL UNIT ASSY / R 522 K2/3.7	02C12 / 6080	167001	B	1 3	1 1	0 2			02		Y	761E50061
CRD-HCU-5819 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 L5/3.7	02C12 / 6080	167001	B	1 3	1 1	0 2			02		Y	761E50061
CRD-HCL-5823 / 1	CRD HYDRALLIC CONTROL UNIT ASSY / R 522 L5/3.7	02C12 / 6080	167001	B	1 3	1 1	0 2			02		Y	761E50061
CRD-HCL-5827 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 L5/3.7	02C12 / 6080	167001	B	1 3	1 1	0.2			02		Y	761E50061
CRD-HCL-5831	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y	

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
1	R 522 K2/3.7	6080			761E500G1							
CRD-HCL-5835	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0.2			02		Y
1	R 522 K2/3.7	6080			761E500G1							
CRD-HCL-5839	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	6080			761E500G1							
CRD-HCL-5843	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	6080			761E500G1							
CRD-P-1A	CONTROL ROD DRIVE PUMP SM-7	02C12	233005		1 3							
2	R 422 A.6/4.1	U055			2X3MNB							
CRD-P-1A+	COMPOSITE FOR CRD-P-1A				1 3							
1	R 422 A.6/4.1											
CRD-P-1B	CONTROL ROD DRIVE PUMP SM-8	02C12	233005		1 3							
2	A.6/4.8	U055			2X3MNB							
CRD-P-1B+	COMPOSITE FOR CRD-P-1B				1 3							
1	R 422 A.6/4.8											
CRD-PI-131/0219	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0.1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/0223	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0.1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/0227	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0.1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/0231	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0.1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/0235	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/8.4	R290										
CRD-PI-131/0239	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0.1				F	N
2	R 522 K2/8.4	R290										
CRD-PI-131/0243	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0.1				F	N
2	R 522 K2/8.4	R290										
CRD-PI-131/0615	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/0619	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0.1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/0623	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/0627	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/0631	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0.1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/0635	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/8.4	R290										
CRD-PI-131/0639	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/8.4	R290										
CRD-PI-131/0643	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/8.4	R290										
CRD-PI-131/0647	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	R290										
CRD-PI-131/1011	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/8.4	R290										

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-PI-131/1015 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12 R290	243006	A B	3 3	1 1	0.1				F	N
CRD-PI-131/1019 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12 R290	243006	A B	3 3	1 1	0.1				F	N
CRD-PI-131/1023 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12 R290	243006	A B	3 3	1 1	0.1				F	N
CRD-PI-131/1027 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12 R290	243006	A B	3 3	1 1	0.1				F	N
CRD-PI-131/1031 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12 R290	243006	A B	3 3	1 1	0.1				F	N
CRD-PI-131/1035 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/8.4	02C12 R290	243006	A B	3 3	1 1	0.1				F	N
CRD-PI-131/1039 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/8.4	02C12 R290	243006	A B	3 3	1 1	0.1				F	N
CRD-PI-131/1043 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/8.4	02C12 R290	243006	A B	3 3	1 1	0.1				F	N
CRD-PI-131/1047 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/8.4	02C12 R290	243006	A B	3 3	1 1	0.1				F	N
CRD-PI-131/1051 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/8.4	02C12 R290	243006	A B	3 3	1 1	0.1				F	N
CRD-PI-131/1407 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12 R290	243006	A B	3 3	1 1	0.1				F	N
CRD-PI-131/1411 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12 R290	243006	A B	3 3	1 1	0.1				F	N
CRD-PI-131/1415 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12 R290	243006	A B	3 3	1 1	0.1				F	N
CRD-PI-131/1419 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12 R290	243006	A B	3 3	1 1	0.1				F	N
CRD-PI-131/1423 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12 R290	243006	A B	3 3	1 1	0.1				F	N
CRD-PI-131/1427 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12 R290	243006	A B	3 3	1 1	0.1				F	N
CRD-PI-131/1431 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12 R290	243006	A B	3 3	1 1	0.1				F	N
CRD-PI-131/1435 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/8.4	02C12 R290	243006	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1439 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/8.4	02C12 R290	243006	A B	3 3	1 1	0.1				F	N
CRD-PI-131/1443 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/8.4	02C12 R290	243006	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1447 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/8.4	02C12 R290	243006	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1451 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/8.4	02C12 R290	243006	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1455 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/8.4	02C12 R290	243006	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1803 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12 R290	243006	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1807	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TP	HL
2	R 522 L5/8.4	R290										
CRD-PI-131/1811	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0.1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/1815	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/1819	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/1823	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/1827	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0.1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/1831	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/1835	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0.1				F	N
2	R 522 K2/8.4	R290										
CRD-PI-131/1839	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/8.4	R290										
CRD-PI-131/1843	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0.1				F	N
2	R 522 K2/8.4	R290										
CRD-PI-131/1847	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0.1				F	N
2	R 522 K2/8.4	R290										
CRD-PI-131/1851	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/8.4	R290										
CRD-PI-131/1855	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/8.4	R290										
CRD-PI-131/1859	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0.1				F	N
2	R 522 K2/8.4	R290										
CRD-PI-131/2203	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/2207	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0.1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/2211	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0.1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/2215	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0.1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/2219	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/2223	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0.1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/2227	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/2231	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0.1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/2235	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/8.4	R290										
CRD-PI-131/2239	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0.1				F	N
2	R 522 K2/8.4	R290										
CRD-PI-131/2243	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/8.4	R290										

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE	TEST / MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
CRD-PI-131/2247	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/8.4	R290										
CRD-PI-131/2251	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/8.4	R290										
CRD-PI-131/2255	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/8.4	R290										
CRD-PI-131/2259	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/8.4	R290										
CRD-PI-131/2603	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/2607	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/2611	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/2615	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/2619	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/2623	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/2627	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/2631	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/2635	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/8.4	R290										
CRD-PI-131/2639	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/8.4	R290										
CRD-PI-131/2643	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/8.4	R290										
CRD-PI-131/2647	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/8.4	R290										
CRD-PI-131/2651	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/8.4	R290										
CRD-PI-131/2655	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/8.4	R290										
CRD-PI-131/2659	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/8.4	R290										
CRD-PI-131/3003	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/3007	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/3011	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/3015	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/3019	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/8.4	R290										
CRD-PI-131/3023	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N

EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	TEST	ANL	F/O	C	FREQ	TM	HL	MFG MODEL NO.
	2		R 522 L5/8.4		R290											
CRD-PI-131/3027	2	0-2500 ACCUMULATOR PRESSURE	R 522 L5/8.4	02C12	R290	243006	A B	3 3	1 1	0.1				F	N	
CRD-PI-131/3031	2	0-2500 ACCUMULATOR PRESSURE	R 522 K2/3.7	02C12	R290	243006	A B	3 3	1 1	0 1				F	N	
CRD-PI-131/3035	2	0-2500 ACCUMULATOR PRESSURE	R 522 K2/3.7	02C12	R290	243006	A B	3 3	1 1	0.1				F	N	
CRD-PI-131/3039	2	0-2500 ACCUMULATOR PRESSURE	R 522 K2/3.7	02C12	R290	243006	A B	3 3	1 1	0.1				F	N	
CRD-PI-131/3043	2	0-2500 ACCUMULATOR PRESSURE	R 522 K2/3.7	02C12	R290	243006	A B	3 3	1 1	0.1				F	N	
CRD-PI-131/3047	2	0-2500 ACCUMULATOR PRESSURE	R 522 K2/3.7	02C12	R290	243006	A B	3 3	1 1	0 1				F	N	
CRD-PI-131/3051	2	0-2500 ACCUMULATOR PRESSURE	R 522 K2/3.7	02C12	R290	243006	A B	3 3	1 1	0.1				F	N	
CRD-PI-131/3055	2	0-2500 ACCUMULATOR PRESSURE	R 522 K2/3.7	02C12	R290	243006	A B	3 3	1 1	0 1				F	N	
CRD-PI-131/3059	2	0-2500 ACCUMULATOR PRESSURE	R 522 K2/3.7	02C12	R290	243006	A B	3 3	1 1	0 1				F	N	
CRD-PI-131/3403	2	0-2500 ACCUMULATOR PRESSURE	R 522 L5/3.7	02C12	R290	243006	A B	3 3	1 1	0.1				F	N	
CRD-PI-131/3407	2	0-2500 ACCUMULATOR PRESSURE	R 522 L5/3.7	02C12	R290	243006	A B	3 3	1 1	0 1				F	N	
CRD-PI-131/3411	2	0-2500 ACCUMULATOR PRESSURE	R 522 L5/3.7	02C12	R290	243006	A B	3 3	1 1	0 1				F	N	
CRD-PI-131/3415	2	0-2500 ACCUMULATOR PRESSURE	R 522 L5/3.7	02C12	R290	243006	A B	3 3	1 1	0 1				F	N	
CRD-PI-131/3419	2	0-2500 ACCUMULATOR PRESSURE	R 522 L5/3.7	02C12	R290	243006	A B	3 3	1 1	0.1				F	N	
CRD-PI-131/3423	2	0-2500 ACCUMULATOR PRESSURE	R 522 L5/3.7	02C12	R290	243006	A B	3 3	1 1	0 1				F	N	
CRD-PI-131/3427	2	0-2500 ACCUMULATOR PRESSURE	R 522 L5/3.7	02C12	R290	243006	A B	3 3	1 1	0.1				F	N	
CRD-PI-131/3431	2	0-2500 ACCUMULATOR PRESSURE	R 522 K2/3.7	02C12	R290	243006	A B	3 3	1 1	0.1				F	N	
CRD-PI-131/3435	2	0-2500 ACCUMULATOR PRESSURE	R 522 K2/3.7	02C12	R290	243006	A B	3 3	1 1	0.1				F	N	
CRD-PI-131/3439	2	0-2500 ACCUMULATOR PRESSURE	R 522 K2/3.7	02C12	R290	243006	A B	3 3	1 1	0.1				F	N	
CRD-PI-131/3443	2	0-2500 ACCUMULATOR PRESSURE	R 522 K2/3.7	02C12	R290	243006	A B	3 3	1 1	0.1				F	N	
CRD-PI-131/3447	2	0-2500 ACCUMULATOR PRESSURE	R 522 K2/3.7	02C12	R290	243006	A B	3 3	1 1	0 1				F	N	
CRD-PI-131/3451	2	0-2500 ACCUMULATOR PRESSURE	R 522 K2/3.7	02C12	R290	243006	A B	3 3	1 1	0 1				F	N	
CRD-PI-131/3455	2	0-2500 ACCUMULATOR PRESSURE	R 522 K2/3.7	02C12	R290	243006	A B	3 3	1 1	0 1				F	N	
CRD-PI-131/3459	2	0-2500 ACCUMULATOR PRESSURE	R 522 K2/3.7	02C12	R290	243006	A B	3 3	1 1	0 1				F	N	

EQUIPMENT NO. LV	DESCRIPTION PLANT LOCATION	CONTRACT MFG	QID	QS	USE MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-PI-131/3803 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12 R290	243006	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3807 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12 R290	243006	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3811 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12 R290	243006	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3815 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12 R290	243006	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3819 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12 R290	243006	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3823 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12 R290	243006	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3827 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12 R290	243006	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3831 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12 R290	243006	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3835 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12 R290	243006	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3839 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12 R290	243006	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3843 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12 R290	243006	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3847 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12 R290	243006	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3851 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12 R290	243006	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3855 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12 R290	243006	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3859 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12 R290	243006	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4203 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12 R290	243006	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4207 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12 R290	243006	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4211 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12 R290	243006	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4215 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12 R290	243006	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4219 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12 R290	243006	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4223 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12 R290	243006	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4227 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12 R290	243006	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4231 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12 R290	243006	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4235 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12 R290	243006	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4239	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE	TEST	ANL	F/O	C	FREQ	TR	HL
					MFG MODEL NO.							
2	R 522 K2/3.7	R290										
CRD-PI-131/4243	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/3.7	R290										
CRD-PI-131/4247	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/3.7	R290										
CRD-PI-131/4251	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/3.7	R290										
CRD-PI-131/4255	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/3.7	R290										
CRD-PI-131/4259	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/3.7	R290										
CRD-PI-131/4607	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/3.7	R290										
CRD-PI-131/4611	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/3.7	R290										
CRD-PI-131/4615	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/3.7	R290										
CRD-PI-131/4619	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/3.7	R290										
CRD-PI-131/4623	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/3.7	R290										
CRD-PI-131/4627	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/3.7	R290										
CRD-PI-131/4631	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/3.7	R290										
CRD-PI-131/4635	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/3.7	R290										
CRD-PI-131/4639	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/3.7	R290										
CRD-PI-131/4643	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/3.7	R290										
CRD-PI-131/4647	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/3.7	R290										
CRD-PI-131/4651	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/3.7	R290										
CRD-PI-131/4655	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/3.7	R290										
CRD-PI-131/5011	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/3.7	R290										
CRD-PI-131/5015	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/3.7	R290										
CRD-PI-131/5019	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/3.7	R290										
CRD-PI-131/5023	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/3.7	R290										
CRD-PI-131/5027	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/3.7	R290										
CRD-PI-131/5031	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/3.7	R290										

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-PI-131/5035	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0.1				F	N
2	R 522 K2/3.7	R290										
CRD-PI-131/5039	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0.1				F	N
2	R 522 K2/3.7	R290										
CRD-PI-131/5043	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/3.7	R290										
CRD-PI-131/5047	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/3.7	R290										
CRD-PI-131/5051	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0.1				F	N
2	R 522 K2/3.7	R290										
CRD-PI-131/5415	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0.1				F	N
2	R 522 L5/3.7	R290										
CRD-PI-131/5419	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0.1				F	N
2	R 522 L5/3.7	R290										
CRD-PI-131/5423	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0.1				F	N
2	R 522 L5/3.7	R290										
CRD-PI-131/5427	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/3.7	R290										
CRD-PI-131/5431	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0.1				F	N
2	R 522 K2/3.7	R290										
CRD-PI-131/5435	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/3.7	R290										
CRD-PI-131/5439	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/3.7	R290										
CRD-PI-131/5443	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0.1				F	N
2	R 522 K2/3.7	R290										
CRD-PI-131/5447	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0.1				F	N
2	R 522 K2/3.7	R290										
CRD-PI-131/5819	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0.1				F	N
2	R 522 L5/3.7	R290										
CRD-PI-131/5823	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 L5/3.7	R290										
CRD-PI-131/5827	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0.1				F	N
2	R 522 L5/3.7	R290										
CRD-PI-131/5831	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0.1				F	N
2	R 522 K2/3.7	R290										
CRD-PI-131/5835	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/3.7	R290										
CRD-PI-131/5839	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0.1				F	N
2	R 522 K2/3.7	R290										
CRD-PI-131/5843	0-2500 ACCUMULATOR PRESSURE	02C12	243006	A B	3 3	1 1	0 1				F	N
2	R 522 K2/3.7	R290										
CRD-V-10	1.0" GLOBE SCRAM DISCH VOL VENT	02C12	361402	B	1 3		0 1			99+		N
2	R 543 J.1/5.1	H035			CV502L-1A							
CRD-V-10+	CRD-V-10 COMPOSITE				1 3							
1	R 543 J.1/5.1											
CRD-V-11	2" GLOBE SCRAM DISCH VOL DRAIN AO	02C12	361402	B	2 3		0.1			57		N
2	R 523 J.1/4.9	H035			V502L-1A							
CRD-V-11+	COMPOSITE FOR CRD-V-11				2 3							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
1	R 523 J.1/4.9											
CRD-V-117	4" GATE CRD-FU-10 BYPASS	43	361980		2 0							
2	R 424 N5/3.6	W030			A-7512-M-166							
CRD-V-120	1"CHK.SCRAM DISCH.HER VAC.BKR.	215	361803		2 3							
2	R 544 J.1/5.1	V135			B-35772							
CRD-V-123A	1.5" GATE CRD-P-1A DRAIN	215	361204	D	2 0						P	
2	R 423 N.6/3.8	B350			DWG 38040-150							
CRD-V-123B	1.5" GATE CRD-P-1B DRAIN	215	361204	D	2 0						P	
2	R 423 N.6/4.7	B350			DWG 38040-150							
CRD-V-126/0219	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/0223	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/0227	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/0231	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/0235	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/0239	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/0243	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/0615	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/0619	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/0623	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/0627	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/0631	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/0635	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/0639	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/0643	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/0647	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/1011	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/1015	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/1019	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/1023	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-V-126/1027	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/1031	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/1035	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/1039	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/1043	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/1047	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/1051	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/1407	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/1411	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/1415	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/1419	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/1423	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/1427	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/1431	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/1435	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/1439	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/1443	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/1447	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/1451	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/1455	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/1803	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-12671507	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/1811	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/1815	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/1819	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/1823	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/1827	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/1831	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/1835	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/1839	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/1843	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/1847	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/1851	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/1855	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/1859	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/2203	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/2207	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/2211	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/2215	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/2219	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/2223	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/2227	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/2231	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/2235	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/2239	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/2243	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/2247	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/2251	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/2255	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-A1							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-V-126/2259	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/2603	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/2607	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/2611	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/2615	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/2619	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/2623	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/2627	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/2631	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/2635	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/2639	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/2643	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/2647	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/2651	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/2655	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/2659	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-A1							
CRD-V-126/3003	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/3007	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/3011	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/3015	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/3019	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/3023	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/3027	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-A1							
CRD-V-126/3031	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/3035	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/3039	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/3043	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/3047	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/3051	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/3055	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/3059	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/3403	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/3407	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/3411	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/3415	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/3419	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/3423	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/3427	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/3431	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/3435	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/3439	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/3443	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/3447	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/3451	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/3455	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/3459	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/3803	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/3807	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/3811	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-V-126/3815	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/3819	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/3823	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/3827	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/3831	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/3835	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/3839	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/3843	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/3847	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/3851	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/3855	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/3859	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/4203	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/4207	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/4211	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/4215	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/4219	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/4223	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/4227	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/4231	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/4235	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/4239	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/4243	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/4247	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/4251	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y

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2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/4255	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/4259	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/4607	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/4611	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/4615	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/4619	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/4623	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/4627	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/4631	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/4635	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/4639	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/4643	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/4647	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/4651	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 K2/3.7	R290.			83470-A1							
CRD-V-126/4655	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/5011	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/5015	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290.			83470-A1							
CRD-V-126/5019	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/5023	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/5027	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/5031	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/5035	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/5039	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/5043	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	AHL	F/O	C	FREQ	TM	HL
CRD-V-126/5047	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/5051	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/5415	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/5419	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/5423	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/5427	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/5431	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/5435	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/5439	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/5443	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/5447	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/5819	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/5823	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/5827	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-A1							
CRD-V-126/5831	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/5835	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/5839	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-126/5843	1" GLOBE SCRAM INLET VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-A1							
CRD-V-127/0219	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-B2							
CRD-V-127/0223	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-B2							
CRD-V-127/0227	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-B2							
CRD-V-127/0231	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-B2							
CRD-V-127/0235	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-B2							
CRD-V-127/0239	1" GLOBE SCRAM EXHAUST VALVE (AC)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-B2							
CRD-V-127/0243	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 K2/8.4	R290			83470-B2							
CRD-V-127/0615	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	R290			83470-B2							
CRD-V-127/0619	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	R290			83470-B2							
CRD-V-127/0623	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	R290			83470-B2							
CRD-V-127/0627	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	R290			83470-B2							
CRD-V-127/0631	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	R290			83470-B2							
CRD-V-127/0635	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 K2/8.4	R290			83470-B2							
CRD-V-127/0639	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 K2/8.4	R290			83470-B2							
CRD-V-127/0643	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 K2/8.4	R290			83470-B2							
CRD-V-127/0647	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 K2/8.4	R290			83470-B2							
CRD-V-127/1011	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	R290			83470-B2							
CRD-V-127/1015	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	R290			83470-B2							
CRD-V-127/1019	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	R290			83470-B2							
CRD-V-127/1023	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	R290			83470-B2							
CRD-V-127/1027	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	R290			83470-B2							
CRD-V-127/1031	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	R290			83470-B2							
CRD-V-127/1035	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 K2/8.4	R290			83470-B2							
CRD-V-127/1039	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 K2/8.4	R290			83470-B2							
CRD-V-127/1043	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 K2/8.4	R290			83470-B2							
CRD-V-127/1047	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 K2/8.4	R290			83470-B2							
CRD-V-127/1051	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 K2/8.4	R290			83470-B2							
CRD-V-127/1407	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	R290			83470-B2							
CRD-V-127/1411	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	R290			83470-B2							
CRD-V-127/1415	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	R290			83470-B2							
CRD-V-127/1419	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	R290			83470-B2							

EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-V-127/1423	2	1" GLOBE SCRAM EXHAUST VALVE (AO)	R 522 L5/8.4	02C12	R290	361961	B	1 3	83470-B2	1 1	0 2			02		Y
CRD-V-127/1427	2	1" GLOBE SCRAM EXHAUST VALVE (AO)	R 522 L5/8.4	02C12	R290	361961	B	1 3	83470-B2	1 1	0 2			02		Y
CRD-V-127/1431	2	1" GLOBE SCRAM EXHAUST VALVE (AO)	R 522 L5/8.4	02C12	R290	361961	B	1 3	83470-B2	1 1	0 2			02		Y
CRD-V-127/1435	2	1" GLOBE SCRAM EXHAUST VALVE (AO)	R 522 K2/8.4	02C12	R290	361961	B	1 3	83470-B2	1 1	0 2			02		Y
CRD-V-127/1439	2	1" GLOBE SCRAM EXHAUST VALVE (AO)	R 522 K2/8.4	02C12	R290	361961	B	1 3	83470-B2	1 1	0 2			02		Y
CRD-V-127/1443	2	1" GLOBE SCRAM EXHAUST VALVE (AO)	R 522 K2/8.4	02C12	R290	361961	B	1 3	83470-B2	1 1	0 2			02		Y
CRD-V-127/1447	2	1" GLOBE SCRAM EXHAUST VALVE (AO)	R 522 K2/8.4	02C12	R290	361961	B	1 3	83470-B2	1 1	0 2			02		Y
CRD-V-127/1451	2	1" GLOBE SCRAM EXHAUST VALVE (AO)	R 522 K2/8.4	02C12	R290	361961	B	1 3	83470-B2	1 1	0 2			02		Y
CRD-V-127/1455	2	1" GLOBE SCRAM EXHAUST VALVE (AO)	R 522 K2/8.4	02C12	R290	361961	B	1 3	83470-B2	1 1	0 2			02		Y
CRD-V-127/1803	2	1" GLOBE SCRAM EXHAUST VALVE (AO)	R 522 L5/8.4	02C12	R290	361961	B	1 3	83470-B2	1 1	0 2			02		Y
CRD-V-127/1807	2	1" GLOBE SCRAM EXHAUST VALVE (AO)	R 522 L5/8.4	02C12	R290	361961	B	1 3	83470-B2	1 1	0 2			02		Y
CRD-V-127/1811	2	1" GLOBE SCRAM EXHAUST VALVE (AO)	R 522 L5/8.4	02C12	R290	361961	B	1 3	83470-B2	1 1	0 2			02		Y
CRD-V-127/1815	2	1" GLOBE SCRAM EXHAUST VALVE (AO)	R 522 L5/8.4	02C12	R290	361961	B	1 3	83470-B2	1 1	0 2			02		Y
CRD-V-127/1819	2	1" GLOBE SCRAM EXHAUST VALVE (AO)	R 522 L5/8.4	02C12	R290	361961	B	1 3	83470-B2	1 1	0 2			02		Y
CRD-V-127/1823	2	1" GLOBE SCRAM EXHAUST VALVE (AO)	R 522 L5/8.4	02C12	R290	361961	B	1 3	83470-B2	1 1	0 2			02		Y
CRD-V-127/1327	2	1" GLOBE SCRAM EXHAUST VALVE (AO)	R 522 L5/8.4	02C12	R290	361961	B	1 3	83470-B2	1 1	0 2			02		Y
CRD-V-127/1831	2	1" GLOBE SCRAM EXHAUST VALVE (AO)	R 522 L5/8.4	02C12	R290	361961	B	1 3	83470-B2	1 1	0 2			02		Y
CRD-V-127/1835	2	1" GLOBE SCRAM EXHAUST VALVE (AO)	R 522 K2/8.4	02C12	R290	361961	B	1 3	83470-B2	1 1	0 2			02		Y
CRD-V-127/1839	2	1" GLOBE SCRAM EXHAUST VALVE (AO)	R 522 K2/8.4	02C12	R290	361961	B	1 3	83470-B2	1 1	0 2			02		Y
CRD-V-127/1843	2	1" GLOBE SCRAM EXHAUST VALVE (AO)	R 522 K2/8.4	02C12	R290	361961	B	1 3	83470-B2	1 1	0 2			02		Y
CRD-V-127/1847	2	1" GLOBE SCRAM EXHAUST VALVE (AO)	R 522 K2/8.4	02C12	R290	361961	B	1 3	83470-B2	1 1	0 2			02		Y
CRD-V-127/1851	2	1" GLOBE SCRAM EXHAUST VALVE (AO)	R 522 K2/8.4	02C12	R290	361961	B	1 3	83470-B2	1 1	0 2			02		Y
CRD-V-127/1855	2	1" GLOBE SCRAM EXHAUST VALVE (AO)	R 522 K2/8.4	02C12	R290	361961	B	1 3	83470-B2	1 1	0 2			02		Y
CRD-V-127/1859	2	1" GLOBE SCRAM EXHAUST VALVE (AO)	R 522 K2/8.4	02C12	R290	361961	B	1 3	83470-B2	1 1	0 2			02		Y
CRD-V-127/2203		1" GLOBE SCRAM EXHAUST VALVE (AO)		02C12		361961	B	1 3		1 1	0 2			02		Y

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TK	HL
2	R 522 L5/8.4	R290			83470-B2							
CRD-V-127/2207	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-B2							
CRD-V-127/2211	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-B2							
CRD-V-127/2215	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-B2							
CRD-V-127/2219	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-B2							
CRD-V-127/2223	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-B2							
CRD-V-127/2227	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-B2							
CRD-V-127/2231	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-B2							
CRD-V-127/2235	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-B2							
CRD-V-127/2239	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-B2							
CRD-V-127/2243	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-B2							
CRD-V-127/2247	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-B2							
CRD-V-127/2251	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-B2							
CRD-V-127/2255	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-B2							
CRD-V-127/2259	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-B2							
CRD-V-127/2603	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-B2							
CRD-V-127/2607	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-B2							
CRD-V-127/2611	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-B2							
CRD-V-127/2615	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-B2							
CRD-V-127/2619	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-B2							
CRD-V-127/2623	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-B2							
CRD-V-127/2627	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-B2							
CRD-V-127/2631	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	R290			83470-B2							
CRD-V-127/2635	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-B2							
CRD-V-127/2639	1" GLOBE SCRAM EXHAUST VALVE (AC)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	R290			83470-B2							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-V-127/2643 / 2	1" GLOBE SCRAM EXHAUST VALVE (AO) / R 522 K2/8.4	02C12 / R290	361961	B	1 3 / 83470-B2	1 1	0 2			02		Y
CRD-V-127/2647 / 2	1" GLOBE SCRAM EXHAUST VALVE (AO) / R 522 K2/8.4	02C12 / R290	361961	B	1 3 / 83470-B2	1 1	0 2			02		Y
CRD-V-127/2651 / 2	1" GLOBE SCRAM EXHAUST VALVE (AO) / R 522 K2/8.4	02C12 / R290	361961	B	1 3 / 83470-B2	1 1	0 2			02		Y
CRD-V-127/2655 / 2	1" GLOBE SCRAM EXHAUST VALVE (AO) / R 522 K2/8.4	02C12 / R290	361961	B	1 3 / 83470-B2	1 1	0 2			02		Y
CRD-V-127/2659 / 2	1" GLOBE SCRAM EXHAUST VALVE (AO) / R 522 K2/8.4	02C12 / R290	361961	B	1 3 / 83470-B2	1 1	0 2			02		Y
CRD-V-127/3003 / 2	1" GLOBE SCRAM EXHAUST VALVE (AO) / R 522 L5/8.4	02C12 / R290	361961	B	1 3 / 83470-B2	1 1	0 2			02		Y
CRD-V-127/3007 / 2	1" GLOBE SCRAM EXHAUST VALVE (AO) / R 522 L5/8.4	02C12 / R290	361961	B	1 3 / 83470-B2	1 1	0 2			02		Y
CRD-V-127/3011 / 2	1" GLOBE SCRAM EXHAUST VALVE (AO) / R 522 L5/8.4	02C12 / R290	361961	B	1 3 / 83470-B2	1 1	0 2			02		Y
CRD-V-127/3015 / 2	1" GLOBE SCRAM EXHAUST VALVE (AO) / R 522 L5/8.4	02C12 / R290	361961	B	1 3 / 83470-B2	1 1	0 2			02		Y
CRD-V-127/3019 / 2	1" GLOBE SCRAM EXHAUST VALVE (AO) / R 522 L5/8.4	02C12 / R290	361961	B	1 3 / 83470-B2	1 1	0 2			02		Y
CRD-V-127/3023 / 2	1" GLOBE SCRAM EXHAUST VALVE (AO) / R 522 L5/8.4	02C12 / R290	361961	B	1 3 / 83470-B2	1 1	0 2			02		Y
CRD-V-127/3027 / 2	1" GLOBE SCRAM EXHAUST VALVE (AO) / R 522 L5/8.4	02C12 / R290	361961	B	1 3 / 83470-B2	1 1	0 2			02		Y
CRD-V-127/3031 / 2	1" GLOBE SCRAM EXHAUST VALVE (AO) / R 522 K2/3.7	02C12 / R290	361961	B	1 3 / 83470-B2	1 1	0 2			02		Y
CRD-V-127/3035 / 2	1" GLOBE SCRAM EXHAUST VALVE (AO) / R 522 K2/3.7	02C12 / R290	361961	B	1 3 / 83470-B2	1 1	0 2			02		Y
CRD-V-127/3039 / 2	1" GLOBE SCRAM EXHAUST VALVE (AO) / R 522 K2/3.7	02C12 / R290	361961	B	1 3 / 83470-B2	1 1	0 2			02		Y
CRD-V-127/3043 / 2	1" GLOBE SCRAM EXHAUST VALVE (AO) / R 522 K2/3.7	02C12 / R290	361961	B	1 3 / 83470-B2	1 1	0 2			02		Y
CRD-V-127/3047 / 2	1" GLOBE SCRAM EXHAUST VALVE (AO) / R 522 K2/3.7	02C12 / R290	361961	B	1 3 / 83470-B2	1 1	0 2			02		Y
CRD-V-127/3051 / 2	1" GLOBE SCRAM EXHAUST VALVE (AO) / R 522 K2/3.7	02C12 / R290	361961	B	1 3 / 83470-B2	1 1	0 2			02		Y
CRD-V-127/3055 / 2	1" GLOBE SCRAM EXHAUST VALVE (AO) / R 522 K2/3.7	02C12 / R290	361961	B	1 3 / 83470-B2	1 1	0 2			02		Y
CRD-V-127/3059 / 2	1" GLOBE SCRAM EXHAUST VALVE (AO) / R 522 K2/3.7	02C12 / R290	361961	B	1 3 / 83470-B2	1 1	0 2			02		Y
CRD-V-127/3403 / 2	1" GLOBE SCRAM EXHAUST VALVE (AO) / R 522 L5/3.7	02C12 / R290	361961	B	1 3 / 83470-B2	1 1	0 2			02		Y
CRD-V-127/3407 / 2	1" GLOBE SCRAM EXHAUST VALVE (AO) / R 522 L5/3.7	02C12 / R290	361961	B	1 3 / 83470-B2	1 1	0 2			02		Y
CRD-V-127/3411 / 2	1" GLOBE SCRAM EXHAUST VALVE (AO) / R 522 L5/3.7	02C12 / R290	361961	B	1 3 / 83470-B2	1 1	0 2			02		Y
CRD-V-127/3415 / 2	1" GLOBE SCRAM EXHAUST VALVE (AO) / R 522 L5/3.7	02C12 / R290	361961	B	1 3 / 83470-B2	1 1	0 2			02		Y
CRD-V-127/3419	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/3423	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/3427	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/3431	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/3435	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/3439	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/3443	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/3447	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/3451	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/3455	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/3459	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/3803	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/3807	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/3811	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/3815	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/3819	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/3823	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/3827	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/3831	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/3835	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/3839	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/3843	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/3847	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/3851	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/3855	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-V-127/3859	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/4203	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/4207	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/4211	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/4215	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/4219	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/4223	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/4227	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/4231	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/4235	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/4239	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/4243	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/4247	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/4251	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/4255	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/4259	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/4607	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/4611	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/4615	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/4619	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/4623	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/4627	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/4631	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/4635	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/4639	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/4643	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/4647	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/4651	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/4655	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/5011	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/5015	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/5019	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/5023	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/5027	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/5031	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/5035	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/5039	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/5043	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/5047	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/5051	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/5415	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/5419	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/5423	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/5427	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/5431	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/5435	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/5439	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/5443	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/5447	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	R290			83470-B2							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-V-127/5819	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/5823	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/5827	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 L5/3.7	R290			83470-B2							
CRD-V-127/5831	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/5835	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/5839	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-127/5843	1" GLOBE SCRAM EXHAUST VALVE (AO)	02C12	361961	B	1 3	1 1	0.2			02		Y
2	R 522 K2/3.7	R290			83470-B2							
CRD-V-3+	COMPOSITE FOR CRD-V-3				2 3							
1	R 524 N.0/3.5											
CSP-AO-1	AIR OPERATOR FOR CSP-V-1	68		R	3 3							
2	R 508 N.0/7.7	M322			A83B							
CSP-AO-10	AIR OPERATOR FOR CSP-V-10	68			3 3							
2	R 491 151 DEG AZ	M322			A83B							
CSP-AO-2	AIR OPERATOR FOR CSP-V-2	68		R	3 3							
2	R 508 7.7/N.0	M322			A83B							
CSP-AO-3	AIR OPERATOR FOR CSP-V-3	68	018001	R	3 3							
2	R 481 M.6/7.6	M322			A83B							
CSP-AO-4	AIR OPERATOR FOR CSP-V-4	68	018001	R	3 3							
2	R 478 M.6/7.6	M322			A83B							
CSP-AO-5	AIR OPERATOR FOR CSP-V-5	68	018001	R	3 3							
2	R 475 M.7/8.3	M322			A83B							
CSP-AO-6	AIR OPERATOR FOR CSP-V-6	68		R	3 3							
2	R 480 N.5/7.7	M322			A83B							
CSP-AO-7	AIR OPERATOR FOR CSP-V-7	68		R	3 3							
2	R 475 N.5/7.7	M322			A83B							
CSP-AO-8	AIR OPERATOR FOR CSP-V-8	68		R	3 3							
2	R 484 0 DEG AZ	M322			A83B							
CSP-AO-9	AIR OPERATOR FOR CSP-V-9	68		R	3 3							
2	R 490 M.9/5.1	M322			A83B							
CSP-V-1	30" BFLY CONTAINMENT ISOL VALVE	68	361104	M	2 3		0.1					N
2	R 508 M.5/7.6	B250			A-206763							
CSP-V-1+	COMPOSITE FOR CSP-V-1	68			2 3		0.1					
1	R 508 M.5/7.6											
CSP-V-10	24" VACUUM RELIEF VALVE	213	361901	Q	2 3							
2	R 491 151 DEG AZ	B250			CV1-L							
CSP-V-10+	COMPOSITE FOR CSP-V-10				2 3							
1	R 491 151 DEG AZ											
CSP-V-2	30" BFLY CONTAINMENT ISOL VALVE	68	361104	M	2 3		0 1					N
2	R 508 M.5/7.4	B250			A-206763							
CSP-V-2+	COMPOSITE FOR CSP-V-2	68			2 3		0 1					
1	R 508 M.5/7.4											
CSP-V-3	24" BFLY CONTAINMENT ISOL VALVE	68	361106	M	2 3		0 1				P	N

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT	MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 481 M.6/7.6		B250			DWG A20764							
CSP-V-3+	COMPOSITE FOR CSP-V-3	68				2 3							
1	R 481 M.6/7.6												
CSP-V-4	24" BFLY CONTAINMENT ISOL VALVE	68		361106	M	2 3		0 1				P	N
2	R 478 7.6/M.6		B250			DWG A20764							
CSP-V-4+	COMPOSITE FOR CSP-V-4	68				2 3							
1	R 478 M.6/7.6												
CSP-V-5	24" BFLY CONTAINMENT ISOL VALVE	68		361106	M	2 3		0.1				P	N
2	R 475 M.7/8.3		B250			DWG A20765							
CSP-V-5+	COMPOSITE FOR CSP-V-5	68				2 3							
1	R 475 M.7/8.3												
CSP-V-6	24" BFLY CONTAINMENT ISOL VALVE	68		361106	M	2 3		0 1				P	N
2	R 480 N.5/7.7		B250			A-206765							
CSP-V-6+	COMPOSITE FOR CSP-V-6	68				2 3							
1	R 480 N.5/7.7		M322			AB3B							
CSP-V-7	24" CHECK VAC RELIEF TO SUPP CHAMB	213		361901	Q	2 3							
2	R 475 N.5/7.7		B250			CV1-L							
CSP-V-7+	COMPOSITE FOR CSP-V-7					2 3							
1	R 475 N.5/7.7		M322			AB3B							
CSP-V-8	24" VACUUM RELIEF VALVE	213		361901	Q	2 3							
2	0 DEG AZ		B250			CV1-L							
CSP-V-8+	COMPOSITE FOR CSP-V-8					2 3							
1	R 484 0 DEG AZ												
CSP-V-9	24"BFLY VAC RELIEF TO SUPP CHAMB	68		361106	M	2 3		0 1				P	Y
2	R 490 M.9/5.1		B250			DWG A20765							
CSP-V-9+	COMPOSITE FOR CSP-V-9	68				2 3							
1	R 490 M.9/5.1												
CVB-V-1A	24" CHK VAC RELIEF TO DRYWELL	213		361901	M	1 0		0.1				P	Y
2	C 492 6 D AZ R35		A415			CV1-L/TYPE							
CVB-V-1A+						1 0							
1	C 492 6 D AZ R35												
CVB-V-1B	24" CHK VAC RELIEF TO DRYWELL	213		361901	M	1 0		0 1				P	Y
2	C 492 6 D AZ R35		A415			CV1-L/TYPE							
CVB-V-1B+						1 0							
1	C 492 6 D AZ R35												
CVB-V-1C	24" CHK VAC RELIEF TO DRYWELL	213		361901	M	1 0		0.1				P	Y
2	C 492 27 D AZ R35		A415			CV1-L/TYPE							
CVB-V-1C+						1 0							
1	C 492 27 D AZ R35												
CVB-V-1D	24" CHK VAC RELIEF TO DRYWELL	213		361901	M	1 0		0 1				P	Y
2	C 492 27 D AZ R35		A415			CV1-L/TYPE							
CVB-V-1D+						1 0							
1	C 492 27 D AZ R35												
CVB-V-1E	24" CHK VAC RELIEF TO DRYWELL	213		361901	M	1 0		0 1				P	Y
2	C 492 90 D AZ R35		A415			CV1-L-TYPE							
CVB-V-1E+						1 0							
1	C 492 90 D AZ R35												
CVB-V-1F	24" CHK VAC RELIEF TO DRYWELL	213		361901	M	1 0		0 1				P	Y
2	C 492 90 D AZ R35		A415			CV1-L-TYPE							

EQUIPMENT NO.	DESCRIPTION	CONTRACT	QID	QS	USE	TEST	ANL	F/O	C	FREQ	TM	HL
LV	PLANT LOCATION	MFG			MFG MODEL NO.							
CVB-V-1F+					1 0							
1	C 492 90 D AZ R35											
CVB-V-1G	24" CHK VAC RELIEF TO DRYWELL	213	361901	M	1 0		0.1				P	Y
2	C 441 153 D AZ R35	A415			CV1-L-TYPE							
CVB-V-1G+					1 0							
1	C 441 153 D AZ R35											
CVB-V-1H	24.0"CHK. VAC.RELIEF TO DRYWELL	213	361901	M	1 0		0.1				P	Y
2	C 492 153 D AZ R35	A415			CV1-L-TYPE							
CVB-V-1H+					1 0							
1	C 492 153 D AZ R35											
CVB-V-1J	24" CHECK VAC RELIEF TO DRYWELL	213	361901	M	1 0		0.1				P	Y
2	C 492 175 C AZ R35	A415			CV1-L-TYPE							
CVB-V-1J+					1 0							
1	C 492 175 D AZ R35											
CVB-V-1K	24" CHK VAC RELIEF TO DRYWELL	213	361901	M	1 0		0.1				P	Y
2	C 492 175 C AZ R35	A415			CV1-L-TYPE							
CVB-V-1K+					1 0							
1	C 492 175 D AZ R35											
CVB-V-1L	24" CHECK VAC RELIEF TO DRYWELL	213	361901	M	1 0		0.1				P	Y
2	C 492 196 C AZ R35	A415			CV1-L-TYPE							
CVB-V-1L+					1 0							
1	C 492 196 D AZ R35											
CVB-V-1M	24" CHECK VAC RELIEF TO DRYWELL	213	361901	M	1 0		0.1				P	Y
2	C 492 196 C AZ R35	A415			CV1-L-TYPE							
CVB-V-1M+					1 0							
1	C 492 196 D AZ R35											
CVB-V-1N	24" CHECK VAC RELIEF TO DRYWELL	213	361901	M	1 0		0.1				P	Y
2	C 492 260 D AZ R35	A415			CV1-L-TYPE							
CVB-V-1N+					1 0							
1	C 492 260 D AZ R35											
CVB-V-1P	24" CHECK VAC RELIEF TO DRYWELL	213	361901	M	1 0		0.1				P	Y
2	C 492 260 C AZ R35	A415			CV1-L-TYPE							
CVB-V-1P+					1 0							
1	C 492 260 C AZ R35											
CVB-V-1Q	24" CHECK VAC RELIEF TO DRYWELL	213	361901	M	1 0		0 1				P	Y
2	C 492 344 C AZ R35	A415			CV1-L-TYPE							
CVB-V-1Q+	COMPOSITE OF CVB-V-1Q				1 0							
1	C 492 344 C AZ R35											
CVB-V-1R	24" CHECK VAC RELIEF TO DRYWELL	213	361901	M	1 0		0.1				P	Y
2	C 492 344 C AZ R35	A415			CV1-L-TYPE							
CVB-V-1R+					1 0							
1	C 492 344 D AZ R35											
CVB-V-1S	24" CHK VAC RELIEF TO DRYWELL	213	361901	M	2 0		0 1				P	
2	C 492 281 C AZ R35	A415			CV1-L-TYPE							
CVB-V-1S+					2 0							
1	C 492 281 C AZ R35											
CVB-V-1T	24" CHK VAC RELIEF TO DRYWELL	213	361901	M	1 0		0 1				P	Y
2	C 492 281 D AZ R35	A415			CV1-L-TYPE							
CVB-V-1T+					1 0							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT	MFG	QID	QS.	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TH	HL
1	C 492 281 D A2 R35												
DCW-P-1A1	COOLING WATER TC DIESEL ENG A1	53		233001	N	4 0							N
2	D 441 Q/6.1		S407			P 8347007							
DCW-P-1A2	COOLING WATER TO DIESEL ENG A2	53		233001	N	4 0							N
2	D 441 R/6.1		S407			P 8347007							
DCW-P-1B1	COOLING WATER TC DIESEL ENG B1	53		233001	N	4 0							N
2	D 441 Q/7.8		S407			P 8347007							
DCW-P-1B2	COOLING WATER TC DIESEL ENG B2	53		233001	N	4 0							N
2	D 441 R/7.8		S407			P 8347007							
DCW-P-1C	HPCS ENGINE DRIVER WATER PUMP	02		233001	N	4 0							
2	D 441 Q/5.1		S407			P 8347007							
DCW-P-2A1	COOLING WATER TO DIESEL ENG 1A	53		233002	N	4 0							N
2	D 441 Q/6.1		S407			P 8249001							
DCW-P-2A2	COOLING WATER TO DIESEL ENG A2	53		233002	N	4 0							N
2	D 441 R/6.1		S407			P 8249001							
DCW-P-2B1	COOLING WATER TO DIESEL ENG B1	53		233002	N	4 0							N
2	D 441 Q/7.8		S407			P 8249001							
DCW-P-2B2	COOLING WATER TO DIESEL ENG B2	53		233002	N	4 0							N
2	D 441 R/7.8		S407			P 8249001							
DCW-P-2C	HPCS ENGINE DRIVEN WATER PUMP	53		233002	N	4 0							N
2	D 441 Q/5.1		S407			P 8249001							
DEA-FN-11	EXHAUST FAN LOOP A D.G. ROOM	22A		145003	N	4 0		0.1			70		N
2	C 455 P3/6.8		J127			48-26.5 1170 A-P							
DEA-FN-11+	EXHAUST FAN D.G.RM LOOPA (DIV 1)					4 0							
1	D 455 P.3/6.8												
DEA-FN-12	EXHAUST FAN (DAY TANK ROOM)	28		145014	N	4 0		0.1			99+		N
2	D 441 Q.9/7.0		B515			745-9789							
DEA-FN-12+	EXHAUST FAN (DAY TK ROOM-LOOPA)					4 0							
1	D 441 Q.9/7.0												
DEA-FN-13	EXHAUST FAN (LOOP "A" PUMP ROOM)	28		145014	N	4 0		0.1			99+		N
2	D 441 P.7/3.4		B515			745-9789							
DEA-FN-13+	EXHAUST FAN (LOOP A PUMP ROOM)					4 0							
1	D 441 P.7/3.4												
DEA-FN-21	EXHAUST FAN LOOP B D.G. ROOM	22A		145003	N	4 0		0 1			70		N
2	D 455 P.3/8.4		J127			48-26.5 1170 A-P							
DEA-FN-21+	EXHAUST FAN D.G.ROOM (LOOP B) DIV2					4 0							
1	D 455 P.3/8.4												
DEA-FN-22	EXHAUST FAN (DAY TANK ROOM D-111)	28		145014	N	4 0		0.1			99+		N
2	D 441 Q.1/9.3		B515			745-9789							
DEA-FN-22+	EXHAUST FAN (LOOP B DAY TK ROOM)					4 0							
1	D 441 Q.1/9.3												
DEA-FN-23	EXHAUST FAN (LOOP "B" OIL ROOM)	28		145014	N	4 0		0 1			99+		N
2	D 441 P.7/3.4		B515			745-9789							
DEA-FN-23+	EXHAUST FAN (LOOP B PUMP ROOM)					4 0							
1	D 441 P.7/3.4												
DEA-FN-31	EXHAUST FAN HPCS D.G. ROOM	22A		145003	N	4 0		0 1			70		N
2	D 455 P.3/4.0		J127			48-26.5 1170 A-P							
DEA-FN-31+	EXHAUST FAN HPCS DIESEL ROOM (DIV3					4 0							
1	D 455 P.3/4.0												

EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
DEA-FN-32	2	EXHAUST FAN (DAY TANK ROOM)	D 455 Q.8/3.9	28	8515	145014	N	4 0	745-9789		0 1			99+		N
DEA-FN-32+	1	EXHAUST FAN (HPCS ROOM DAY TK ROOM	D 455 Q.8/3.9					4 0								
DEA-FN-33	2	EXHAUST FAN (HPCS OIL PUMP ROOM)	C 441 R.3/3.4	28	8515	145014	N	4 0	745-9789		0 1			99+		N
DEA-FN-33+	1	EXHAUST FAN (DIV 3 PUMP ROOM)	D 441 R.3/3.4					4 0								
DEA-FN-51	2	EXHAUST D.G. BLDG. CORRIDOR	D 455 P.1/3.8	22A	J127	145005	A	4 0	18-14-1750.SER.1000		0 1			48		N
DEA-FN-51+	1	EXHAUST FAN D.G. BLDG. CORRIDOR	D 455 P.1/3.8					4 0								
DEA-FN-52	2	EXH.FAN STORAGE ROOM TO WASTE BLDG	D 467 M.0/9.5	22A	J127	145005	A	4 0	18-14-1750.SER.1000		0 1			48		N
DEA-FN-52+	1	EXH. FAN COMPOSITE	D 467 M.0/9.5					4 0								
DG-ENG-1A	2	UNIT A DIESEL GENERATOR ENG #1	D 441 R/5.6	53	E160	112001	N	4 0	20-645-E4							N
DG-ENG-1A+	1	DIESEL GENERATOR DIV1	D 441 R/5.6		A220	112001		4 0	20-645-E4							
DG-ENG-1B	2	UNIT B DIESEL GENERATOR ENG. #1	D 441 R/7.4	53	E160	112001	N	4 0	20-645-E4							N
DG-ENG-1B+	1	DIESEL GENERATOR DIV 2	D 441 Q/5.6		E160	112001	N	4 0	20-645-E4							
DG-ENG-1C	2	DIESEL ENGINE FOR HPCS SYSTEM	D 441 Q.8/5.0	02E22	6082	112001	N	4 0	20-624-E4							
DG-ENG-1C+	1	DIESEL GENERATOR HPCS SYSTEM	D 441 R/7.4		E160	112001	N	4 0	20-624-E4							
DG-ENG-2A	2	UNIT A DIESEL GENERATOR ENG.#2	D 441 Q/5.6	53	E160	112001	N	4 0	20-624-E4							N
DG-ENG-2B	2	UNIT B DIESEL GENERATOR ENG. #2	D 441 Q/7.4	53	E160	112001	N	4 0	20-645-E4							N
DLO-F-5	2	HPCS TURBO LO FILTER	D 441	02				4 0								
DLO-P-1A1	2	SCAVENGINE OIL PUMP DG-ENG-1A	D 441 Q.0/6.1	53	S407	233018	N	4 0	P 8252842							N
DLO-P-1A2	2	SCAVENGING LUBE OIL PUMP DE-ENG-2A	D 441 R.0/6.1	53	S407	233018	N	4 0	P 8252842							N
DLO-P-1B1	2	SCAVENGING LUBE OIL PUMP DG-ENG-1B	D 441 Q.0/7.8	53	S407	233018	N	4 0	P 8252842							N
DLO-P-1B2	2	SCAVENGING LUBE OIL PUMP DG-ENG-2B	D 441 R.0/7.8	53	S407	233018	N	4 0	P 8252842							N
DLO-P-2A1	2	SOAK-BACK LUBE OIL PUMP DG-ENG-1A	C 441 Q/6	53	S407	233004	N	4 0	P 8336678							N
DLO-P-2A2	2	SOAK-BACK LUBE OIL PUMP DG-ENG-2A	D 441 R2/6	53	S407	233004	N	4 0	P 8336678							N
DLO-P-2B1	2	SOAK-BACK LUBE OIL PUMP DG-ENG-1B	D 441 Q/8	53	S407	233004	N	4 0	P 8336678							N
DLO-P-2B2		SOAK-BACK LUBE OIL PUMP DG-ENG-2B		53		233004	N	4 0								N

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE TEST / MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
2	D 441 R2/8	S407			P 8336678						
DLO-P-3A1	CIRCULATE LUBE OIL PUMP DG-ENG-1A	53	233019	N	4 0						N
2	D 441 0/6.1	V125			6B920-9089635						
DLO-P-3A2	CIRCULATE LUBE OIL PUMP DG-ENG-2A	53	233019	N	4 0						N
2	C 441 R/6.1	V125			6B920-9089635						
DLO-P-3B1	CIRCULATE LUBE CIL PUMP DG-ENG-1B	53	233019	N	4 0						N
2	D 441 0/7.8	V125			6B920-9089635						
DLO-P-3B2	CIRCULATE LUBE OIL PUMP DG-ENG-2B	53	233019	N	4 0						N
2	D 441 R/7.8	V125			6B920-9089635						
DLO-P-4A1	MAIN LUBE PUMP DG-ENG-A1	53	233019	N	4 0						N
2	D 441 Q.0/6.1	S407			P 8360554						
DLO-P-4A2	MAIN LUBE PUMP DG-ENG-B1	53	233019	N	4 0						N
2	D 441 R.0/6.1	S407			P 8360554						
DLO-P-4B1	MAIN LUBE PUMP DG-ENG-B1	53	233019	N	4 0						N
2	D 441 Q.0/7.8	S407			P 8360554						
DLO-P-4B2	MAIN LUBE PUMP DG-ENG-B2	53	233019	N	4 0						N
2	D 441 R.0/7.8	S407			P 8360554						
DLO-P-5A1	PISTON COOLING PUMP DG-ENG-A1	53	233019	N	4 0						N
2	D 441 Q.0/6.1	S407			P 8360554						
DLO-P-5A2	PISTON COOLING PUMP DG-ENG-A2	53	233019	N	4 0						N
2	D 441 R.0/6.1	S407			P 8360554						
DLO-P-5B1	PISTON COOLING PUMP DG-ENG-B1	53	233019	N	4 0						N
2	D 441 Q.0/7.8	S407			P 8360554						
DLO-P-5B2	PISTON COOLING PUMP DG-ENG-B2	53	233019	N	4 0						N
2	D 441 Q.0/7.8	S407			P 8360554						
DLO-P-6	HPCS AUX.LUBE OIL TURBO.FILTR.PUMP	02		R	4 0						
2	D 441 Q.5/5.0										
DLO-P-7	HPCS OIL PRESS.TO TURBO.CHARGER	02		R	4 0						
2	D 441 Q.5/5.0										
DLO-P-8	HPCS PISTON COOLING PUMP	02	233019	R	4 0						
2	D 441 Q.5/5.0	A183			8360537						
DLO-P-9	HPCS SCAVENGING PUMP	02		R	4 0						
2	D 441 Q.5/5.0	E147									
DMA-AD-11/1	(MO) INTAKE DAMPER DMA-FN-11	67	011003	M	4 0	0 1					N
2	D 455 Q5/7.2	P295			748744						
DMA-AD-11/1+	DIESEL AIR DAMPER				4 0						
1	D 455 Q.5/7.2										
DMA-AD-11/2	DIESEL AIR DAMPER	67	011003	M	4 0	0 1					N
2	D 455 Q5/7.2	P295			748744						
DMA-AD-11/2+	DIESEL AIR DAMPER				4 0						
1	D 455 Q.5/7.2										
DMA-AD-12/1	(MO) INTAKE DAMPER DMA-FN-12	67	011003	M	4 0	0 1					N
2	D 455 P5/7.2	P295			748741						
DMA-AD-12/1+	DIESEL AIR DAMPER				4 0						
1	D 455 P.5/7.2										
DMA-AD-12/2	(EMO) INTAKE DAMPER DMA-FN-12	67	011003	M	4 0	0 1					N
2	D 455 P5/7.2	P295			748742						
DMA-AD-12/2+	DIESEL AIR DAMPER				4 0						
1	D 455 P.5/7.2										

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT	MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
DMA-AD-21/1	(MO) INTAKE DAMPER DMA-FN-21	67		011003	M	4 0		0.1					N
2	D 455 Q5/9.2		P295			748743							
DMA-AD-21/1+	DIESEL AIR DAMPER					4 0							
1	D 455 Q.5/9.2												
DMA-AD-21/2	(EHO) INTAKE DAMPER DMA-FN-21	67		011003	M	4 0		0.1					N
2	D 455 Q5/9.2		P295			748744							
DMA-AD-21/2+	DIESEL AIR DAMPER					4 0							
1	D 455 Q.5/9.2												
DMA-AD-22/1	(MO) INTAKE DAMPER DMA-FN-22	67		011003	M	4 0		0.1					N
2	D 455 P5/9.2		P295			748741							
DMA-AD-22/1+	DIESEL AIR DAMPER					4 0							
1	D 455 P.5/9.2												
DMA-AD-22/2	(EHO) INTAKE DAMPER DMA-FN-22	67		011003	M	4 0		0.1					N
2	D 455 P5/9.2		P295			748742							
DMA-AD-22/2+	DIESEL AIR DAMPER					4 0							
1	D 455 P.5/9.2												
DMA-AD-31/1	(MO) INTAKE DAMPER DMA-FN-31	67		011003	M	4 0		0.1					N
2	D 455 Q5/4.2		P295			748743							
DMA-AD-31/1+	DIESEL AIR DAMPER					4 0							
1	D 455 Q.5/4.2												
DMA-AD-31/2	(EHO) AUTO INTAKE DAMPER DMA-FN-31	67		011003	M	4 0		0.1					N
2	D 455 Q5/4.2		P295			748744							
DMA-AD-31/2+	DIESEL AIR DAMPER					4 0							
1	D 455 Q.5/4.2												
DMA-AD-32/1	(MO) INTAKE DAMPER DMA-FN-32	67		011003	M	4 0		0.1					N
2	D 455 P5/4.2		P295			748741							
DMA-AD-32/1+	DIESEL AIR DAMPER					4 0							
1	D 455 P.5/4.2												
DMA-AD-32/2	(EHO) INTAKE DAMPER DMA-FN-32	67		011003	M	4 0		0.1					N
2	D 455 P5/4.2		P295			748742							
DMA-AD-32/2+	DIESEL AIR DAMPER					4 0							
1	D 455 P.5/4.2												
DMA-AD-53	(MO) EXHAUST DAMPER DMA-FN-51	67		011001	N	4 0		0.1					N
2	D 464 P.1/9.5		P014			630-N-31408							
DMA-AD-53+	DIESEL AIR DAMPER					4 0							
1	D 464 P.1/9.5												
DMA-AH-11	SUPPLY DIV I EM. D-G ROOM COOLING	67		012003	M	4 0		0.1			16		N
2	D 455 Q.5/7.0		P295			CIL 53.1							
DMA-AH-11+	DIESEL AIR HANDLING UNIT					4 0							
1	D 455 Q.5/7.0												
DMA-AH-12	SUPPLY DIV I EM. D-G ROOM COOLING	67		012004	M	4 0		0 1			16		N
2	D 455 P.5/7.0		P295			M-30147							
DMA-AH-12+	DIESEL AIR HANDLING UNIT					4 0							
1	D 455 P.5/7.0												
DMA-AH-21	SUPPLY DIV II EM. D-G ROOM COOLING	67		012003	M	4 0		0 1			16		N
2	D 455 Q.5/9.0		P295			CIL-53.1							
DMA-AH-21+	DIESEL AIR HANDLING UNIT					4 0							
1	D 455 Q.5/9.0												
DMA-AH-22	SUPPLY DIV II EM. D-G ROOM COOLING	67		012004	M	4 0		0 1			16		N

WASHINGTON PUBLIC POWER SUPPLY SYSTEM
SAFETY RELATED EQUIPMENT LIST FOR NRC-SQRT

EQUIPMENT NO.	DESCRIPTION	CONTRACT		QID	QS	USE	TEST	ANL	F/O	C	FREQ	TM	HL
LV	PLANT LOCATION		MFG			MFG MODEL NO.							
2	D 455 P.5/9.0		P295			M-5040							
DMA-AH-22+	DIESEL AIR HANDLING UNIT					4 0							
1	D 455 P.5/9.0												
DMA-AH-31	SUPPLY HPCS D-G ROOM COOLING	67		012003	M	4 0		0 1			16		N
2	D 455 Q.5/4.0		P295			C1W-53.1							
DMA-AH-31+	DIESEL AIR HANDLING UNIT					4 0							
1	D 455 Q.5/4.0												
DMA-AH-32	SUPPLY HPCS D-G ROOM COOLING	67		012004	M	4 0		0 1			16		N
2	D 455 P.3/4.0		P295			DWG 73C3284-B							
DMA-AH-32+	DIESEL AIR HANDLING UNIT					4 0							
1	D 455 P.3/4.0												
DMA-AH-51	SUPPLY C-6 CABLE CORRIDOR COOLING	67		012004	M	4 0		0 1			16		N
2	D 441 R.0/9.8		P295			M5-5040							
DMA-AH-51+	DIESEL AIR HANDLING UNIT					4 0							
1	D 441 R.0/9.8												
DMA-FN-11	SUPPLY FAN DMA-AH-11	67		145006	M	4 0		0 1			16		N
2	D 455 Q5/7		P295			P402							
DMA-FN-12	SUPPLY FAN DMA-AH-12	67		145007	M	4 0		0 1			16		N
2	D 455 P5/7		P295			P300-C11							
DMA-FN-21	SUPPLY FAN DMA-AH-21	67		145006	M	4 0		0 1			16		N
2	D 455 Q5/9		P295			P402							
DMA-FN-22	SUPPLY FAN DMA-AH-22	67		145007	M	4 0		0 1			16		N
2	D 455 P5/9		P295			P-300-C11							
DMA-FN-31	SUPPLY FAN DMA-FN-31	67		145006	M	4 0		0 1			16		N
2	D 460 Q5/4.2		P295			P402							
DMA-FN-32	SUPPLY FAN DMA-AH-32	67		145007	M	4 0		0 1			16		N
2	D 455 P5/4.2		P295			P-300-C11							
DMA-FN-51	FAN DMA-AH-51	67		145008	M	4 0		0 1			16		N
2	D 441 R/9.8		P295			165							
DO-P-1A	DO-TK-1A FUEL OIL TRANSFER PUMP	35A		233021	M	4 0		0 1			07		N
2	D 441 P.4/3.4		D120			NCT							
DO-P-1A+	DIESEL OIL TRANSFER PUMP 1A					4 0							
1	D 441 P.4/3.4												
DO-P-1B	DO-TK-1B FUEL OIL TRANSFER PUMP	35A		233021	M	4 0		0 1			07		N
2	D 441 Q.2/3.4		D120			NCT							
DO-P-1B+	DIESEL OIL TRANSFER PUMP 1B					4 0							
1	D 441 Q.2/3.4												
DO-P-2+	DIESEL OIL TRANSFER PUMP 2					4 0							
1	D 441 Q.2/3.4												
DO-P-3A1	MOTOR DRIVEN BACKUP FUEL OIL PUMP	53		233022	N	4 0							N
2	D 441 Q.0/6.1		H272			FV813-84568							
DO-P-3A2	MOTOR DRIVEN BACKUP FUEL OIL PUMP	53		233022	N	4 0							N
2	D 441 R.0/6.1		H272			FV813-84568							
DO-P-3B1	MOTOR DRIVEN BACKUP FUEL OIL PUMP	53		233022	N	4 0							N
2	D 441 Q.0/7.8		H272			FV813-84568							
DO-P-3B2	MOTOR DRIVEN BACKUP FUEL OIL PUMP	53		233022	N	4 0							N
2	D 441 R.0/7.8		H272			FV813-84568							
DO-P-4A1	ENGINE DRIVEN FUEL OIL PUMP	53		233023	N	4 0							N
2	D 441 Q.0/6.1		S407			P 8410219							

EQUIPMENT NO.	DESCRIPTION	CONTRACT	QID	QS	USE	TEST	ANL	F/O	C	FREQ	TM	HL
LV	PLANT LOCATION	MFG			MFG MODEL NO.							
DO-P-4A2	ENGINE DRIVEN FUEL OIL PUMP	53	233023	N	4 0							N
2	D 441 R.0/6.1	S407			P 8410219							
DO-P-4B1	ENGINE DRIVEN FUEL OIL PUMP	53	233023	N	4 0							N
2	D 441 Q.0/7.8	S407			P 8410219							
DO-P-4B2	ENGINE DRIVEN FUEL OIL PUMP	53	233023	N	4 0							N
2	D 441 R.0/7.8	S407			P 8410219							
DO-P-5	HPCS ENG DRIVEN FUEL OIL PUMP	02		R	4 0							
2	D 441 Q.5/5.0											
DO-P-6	DC MOTOR DRIVEN HPCS FUEL PUMP	02		R	4 0							
2	D 441 Q.5/5.0				66195D							
DOA-AD-52	AUTOMATIC DAMPER TO DMA-AH-51	216	011001	R	4 0							
2	D 466 R.4/9.5	P014			630-N-31408							
DOA-AD-52+	AUTOMATIC DAMPER TO DMA-AH-51				4 0							
1	D 466 R.4/9.5											
DSA-C-1A1	STARTING AIR FOR DG-ENG-1A MC-7A-A	53	033001	N	4 0							N
2	D 441 P.5/7.0	I075			10T-2STAGE TYPE 30.							
DSA-C-1A2	STARTING AIR FOR DG-ENG-2A MC-7A-A	53	033001	N	4 0							N
2	D 441 P.3/7.0	I075			10T-2STAGE TYPE 30							
DSA-C-1B1	STARTING AIR FOR DG-ENG-1B MC-8A-A	53	033001	N	4 0							N
2	D 441 P.4/9.2	I075			10T-2STAGE TYPE 30.							
DSA-C-1B2	STARTING AIR FOR DG-ENG-2B MC-8A-A	53	033001	N	4 0							N
2	D 441 P.4/9.0	I075			10T-2 STAGE TYPE 30.							
DSA-C-1C	STARTING AIR FOR HPCS DG-ENG-1C	02	033002	R	4 0							
2	D 441 P.6/3.9	L216			32513							
DSA-C-1C+	COMPOSITE TO DSA-C-1C				4 0							
1	D 441 P.6/3.9											
DSA-C-2C	STARTING AIR FOR HPCS DG-ENG-2C	02	033002	R	4 0							
2	D 441 P.3/4.0	L216			30513							
DSA-C-2C+	COMPOSITE TO DSA-C-2C				4 0							
1	D 441 P.3/4.0											
DSA-ENG-1A2	DSA-C-1A2 ENGINE	53	112002	N	4 0							N
2	P 441 P.2/7.0	P182			BA2R							
DSA-ENG-1B2	DSA-C-1B2 ENGINE	53	112002	N	4 0							N
2	P 443 P.7/8.7	P182			3953-BA2R							
DSA-PCV-1A	BACK-UP STARTING AIR PRESS CONTROL	53	236007	N	4 0							N
2	D 444 P.4/7.3	6265			80-886C							
DSA-PCV-1B	BACK-UP STARTING AIR PRESS CONTROL	53	236008	N	4 0							N
2	D 448 P.7/9.0	6265			P-205001-A							
DSA-PCV-2A	STARTING AIR PRESS CONTROL	53	236007	N	4 0							N
2	D 447 P.4/7.3	6265			80-886C							
DSA-PCV-2B	STARTING AIR PRESS CONTROL	53	236008	N	4 0							N
2	D 447 P.6/9.4	6265			P-205001-A							
DSA-RV-1A	RELIEF DSA-C-1A1 DISCH	53	297014	N	4 0							N
2	D 444 P.4/7.3	S407			FIG 105C							
EDR-AO-19	AIR OPERATOR EDR-V-19	41A	018007	R	1 0							
2	R 467 P.5/4.7	V085			DWG P2-3311-N-21							
EDR-AO-20	AIR OPERATOR EDR-V-20	41A	018007	R	1 0							
2	R 467 M.5/4.7	V085			DWG P2-3311-N-21							
EDR-V-19	3"AC GATE FROM DRYWELL SUMP	41A	361702	R	1 0							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TK	HL
2	R 467 M.5/4.7	V085			DWG P2-3311-N-21							
EDR-V-19+					1 0							
1	R 467 M.5/4.7											
EDR-V-20	3" GATE FROM CRYWELL SUMP (AO)	41A	361702	R	1 0							
2	R 467 M.5/4.7	V085			DWG P2-3311-N-21							
EDR-V-20+					1 0							
1	R 467 M.5/4.7											
FDR-AO-3	AIR OPERATOR FDR-V-3	41A	018007	R	1 0							
2	R 467 M.0/4.1	V085			DWG P2-3311-N-21							
FDR-AO-4	AIR OPERATOR FDR-V-4	41A	018007	R	1 0							
2	R 467 M.0/4.1	V085			DWG P2-3311-N-21							
FDR-AO-601	AIR OPERATOR FDR-V-601	206		R	1 0							
2	R 428 H.7/9.4	M322			FIG 150-2WE-80-CO							
FDR-AO-602	AIR OPERATOR FDR-V-602	206		R	1 0							
2	R 426 N.0/9.4	M322			FIG 150-2WE-80-CO							
FDR-AO-603	AIR OPERATOR FDR-V-603	206		R	1 0							
2	R 428 N.0/3.4	M322			FIG 150-2WE-80-CO							
FDR-AO-604	AIR OPERATOR FDR-V-604	206		R	1 0							
2	R 428 H.0/3.5	M322										
FDR-V-3	3"" GATE VLV AO	41A	361702	T	1 0							
2	R 467 M.0/4.1	V085			DWG P2-3311-N-21							
FDR-V-3+	COMPOSITE FOR FDR-V-3				1 0							
1	R 467 M.0/4.1											
FDR-V-4	3" GATE CONT TC DRN FD-SUMP-R3 AO	41A	361702	T	1 0							
2	R 467 M.0/4.1	V085			DWG P2-3311-N-21							
FDR-V-4+	COMPOSITE FOR FDR-V-4				1 0							
1	R 467 M.0/4.1											
FDR-V-601	6" GATE DRN HDR ISOL SUMP-R1 AO	206		R	2 0							
2	R 428 H.7/9.4				FIG 150-2WE-80-CO							
FDR-V-601+	COMPOSITE FOR FDR-V-601				2 0							
1	R 428 H.7/9.4											
FDR-V-602	6" GATE DRN HDR ISOL SUMP-R2 AO	206		R	2 0							
2	R 428 N.0/9.4	P032			FIG 150-2WE-80-CO							
FDR-V-602+	COMPOSITE FOR FDR-V-602				2 0							
1	R 428 N.0/9.4											
FDR-V-603	6" GATE DRN HDR ISOL SUMP-R3 AO	206		R	2 0							
2	R 428 N.0/3.4	P032			FIG 150-2WE-80-CO							
FDR-V-603+	COMPOSITE FOR FDR-V-603				2 0							
1	R 428 N.0/3.4											
FDR-V-604	6" GATE DRN HDR ISOL SUMP-R4 AO	206		R	2 0							
2	R 428 H.0/3.5	P032			FIG 150-2WE-80-CO							
FDR-V-604+	COMPOSITE FOR FDR-V-604				2 0							
1	R 428 H.0/3.5											
FPC-P-1A	FUEL POOL CIRC PUMP 1A	21A	233007	R	2 3							
2	R 549 8.6/L.7	W318			3LR-9							
FPC-P-1A+	FUEL POOL COOLING PUMP				2 3							
1	R 549 L.7/8.6											
FPC-P-1B	FUEL POOL CIRC PUMP 1B	21A	233007	R	2 3							
2	R 549 L.7/8.8	W318			3LP-9							

EQUIPMENT NO. LV	DESCRIPTION PLANT LOCATION	CONTRACT MFG	QID	QS	USE MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
FPC-P-18+	FUEL POOL COOLING PUMP				2 3							
1	R 549 L.7/8.6											
FPC-V-1	6" GLOBE VLV FPC F/DM BYPASS	215		R	2 3							
2	R 522 K.4/8.6	F130			P 24A4405X012							
FPC-V-1+	6" DO GLOBE VLV FPC F/DM BYPASS				2 3							
1	R 552 K.4/8.6											
FPC-V-113+	6.0" SAUND FPC CLEANUP BYPASS			R	2 3							
1	R 551 L.7/9.1											
FPC-V-153	6" MO GATE FPC-P-3 SUCT SUPP POOL	41A	361704	R	2 3							
2	R 448 J.9/7.9	V085			DWG P2-3311-N-9							
FPC-V-153+	6" GATE MO FPC-P-3 SUCT SUPP POOL				2 3							
1	R 448 J.9/7.9											
FPC-V-154	6" MO GATE FPC-P-3 SUCT SUPP POOL	41A	361704	R	2 3							
2	R 448 J.9/8.0	V085			DWG P2-3311-N-9							
FPC-V-154+	6" MO GATE FPC-P-3 SUCTION ISOL				2 3							
1	R 448 J.9/8.0											
FPC-V-156	6" MO GATE SUPP POOL RETURN ISOL	41A	361704	R	2 3							
2	R 466 K.2/8.2	V085			DWG P2-3311-N-9							
FPC-V-156+	6" MO GATE SUPP-POOL RETURN ISOL				2 3							
1	R 466 K.2/8.2											
FPC-V-172	8" GATE VALVE MOTOR OPERATED	41A		R	2 3							
2	R 471 K9/9											
FPC-V-172+					2 3							
1	R 471 K9/9											
FPC-V-173	8" GATE VALVE MOTOR OPERATED	41A		R	2 3							
2	R 471 K/9.4											
FPC-V-173+					2 3							
1	R 471 K/9.4											
FPC-V-175	8" GATE VALVE MOTOR OPERATED	41A		R	2 3							
2	R 548											
FPC-V-175+					2 3							
1	R 548											
FPC-V-181A	8" GATE VALVE MOTOR OPERATED	41A		R	2 3							
2	R 548											
FPC-V-181A+	8" GATE VALVE MOTOR OPERATED				2 3							
1	R 548											
FPC-V-181B	8" GATE VALVE MOTOR OPERATED	41A		R	2 3							
2	R 548											
FPC-V-181B+	8" GATE VALVE MOTOR OPERATED				2 3							
1	R 548											
FPC-V-184	8" GATE VALVE MOTOR OPERATED	41A		R	2 3							
2	R 471 L/9.4											
FPC-V-184+	COMPOSITE TO FPC-V-184				2 3							
1	R 471 L/9.4											
HPCS-P-1	HPCS PUMP	02E22	233008	B	1 0					11		
2	R 423 M.3/3.6	I075			FIG 880570-351861171							
HPCS-P-1+	HPCS PUMP				1 0							
1	R 423 M.3/3.6											
HPCS-P-2	HPCS DIESEL SERVICE WATER PUMP	02E22	233009	A	4 0							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	A 448 A.8/1.9	PQ25			6X14M-WY-2ST							
HPCS-P-2+	HPCS DIESEL SERVICE WATER PUMP				4 0							
1	A 448 A.8/1.9											
HPCS-P-3	HPCS SYSTEM WATER LEG PUMP	35A	233006	A	1 0		0 1			82		N
2	R 423 L.6/3.5	C676			FIG 3065/1055-6599							
HPCS-P-3+	HPCS SYSTEM WATER LEG PUMP				1 0							
1	R 423 L.6/3.5											
HPCS-V-1	14" GATE MO COND WTR INTO HPCS	02E22	361070	B	1 0		0.1			33+		N
2	R 435 M.0/3.9	A391			DWG 5310-2-1							
HPCS-V-1+					1 0							
1	R 435 M/3.9											
HPCS-V-10	10"MO GLOBE HPCS RETURN TO CST	02E22	361006	A	2 0		0.1			74+		N
2	R 448 L.9/3.7	A391			DWG 1927-3							
HPCS-V-10+	COMP FOR 10IN GLOBE RETURN TO CST				2 0							
1	R 448 L9/3.7											
HPCS-V-11	10" MO GLOBE HPCS RETURN TO CST	02E22	361006	A	2 0		0 1			74		N
2	R 448 L.9/3.7	A391			DWG 1927-3							
HPCS-V-11+	COMP FOR 10IN GLOBE RETURN TO CST				2 0							
1	R 448 L9/3.7											
HPCS-V-12	4"GATE HPCS-P-1 MIN FLOW (MO)	02E22	361060	B	1 0		0.1			33+		N
2	R 430 M.0/3.7	A391			94-13306							
HPCS-V-12+	COMP FOR 4IN GATE HPCS-P-1 MIN FLO				1 0							
1	R 449 L3/3.9											
HPCS-V-15	18"MO GATE SUPP POOL OUTLT TO HPCS	02	361075	B	1 0	0.1	0.1			33+		N
2	R 449 L.3/3.9	A391			94-13272							
HPCS-V-15+	18"MO GATE SUPP POOL OUTLT TO HPCS				1 0							
1	R 449 L3/3.9											
HPCS-V-23	12" MO GLOBE HPCS TEST LINE	02E22	361007	B	2 0.		0.1			65		N
2	R 450 L.5/3.7	A391			DWG 1928-3							
HPCS-V-23+	12" MO TEST LINE COMPOSITE				2 0							
1	R 450 L5/3.7											
HPCS-V-4	12" GATE CONTAINMENT ISOL(MO)	02E22	361065	B	1 0		0.1			55		N
2	R 538 M.3/7.3	A391			DWG 94-13401							
HPCS-V-5+	12"&CHECK VLV CONTAINMENT ISO COMP:				1 0							
1	C 549 244 E AZ R17											
HY-HP-3A	15HP/19A VALVE ACTUATOR HYDR.	02B35	172001	R	3 3							
2	C 522 M.2/4.3	6080			5K254YK2246							
HY-HP-3A+	15HP/19A VALVE ACTUATOR HYDR.		172001		3 3							
1	C 522 M.2/4.3	6080			5K254YK2246							
HY-HP-3B	15HP/19A VALVE ACTUATOR HYDR.	02B35	172001	R	3 3							
2	C 522 J.7/7.6	6080			5K254YK2246							
HY-HP-3B+	15HP/19A VALVE ACTUATOR HYDR.		172001		3 3							
1	C 522 J.7/7.6	6080			5K254YK2246							
HY-P-A1/3	PUMP HPU 1800 PSI 8.7 GPM	02B35	233010	R	3 3							
2	R 522 M3/4.3	D122			PV-500							
HY-P-A2/3	1800 PSI 3.76 PM HUD. CONTROL PUMP	02B35	233010	R	3 3							
2	R 522 M3/4.3	D122			PV-500							
HY-P-B1/3	PUMP HPU 1800 PSI 8.7 GPM	02B35	233010	R	3 3							
2	R 522 J6/7.6	D122			PV-500							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE TEST / MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
HY-P-B2/3	1800 PSI 3.76 PF HUD. CONTROL PUMP	02B35	233010	R	3 3						
2	522	D121			PV05-006-30RV						
HY-TCV-A1/18	TEMP CONTROL VALVE 130DEGREES F	02B35	335001	R	3 3						
2	C 522 M3/4.3	S405			R-151-E						
HY-TCV-A2/18	TEMP CONTROL VALVE 130DEGREES F	02B35	335001	R	3 3						
2	C 522 M3/4.3	S405			R-151-E						
HY-TCV-B1/18	TEMP CONTROL VALVE 130 DEGREES F	02B35	335001	R	3 3						
2	R 522 J8/7.6	S405			R-151-E						
HY-TCV-B2/18	TEMP CCNTRL VALVE 130 DEGREES F	02B35	335001	R	3 3						
2	R 522 J8/7.6	S405			R-151-E						
HY-V-A0/15	SHUTTLE VALVE	02B35	361603	R	3 3						
2	C 501 L8/5.2	R197			419-8D28						
HY-V-A1/10	SHUT OFF VALVE (2)	02B35	361604	R	3 3						
2	C 522 M3/4.3	R197			8013B-10HS28						
HY-V-A1/11	0.5" CHECK SERVC-VALVE DRAIN	02B35	361601	R	3 3						
2	C 522 M3/4.3	R197			A455-8S28-1						
HY-V-A1/35	4 WAY VALVE MAN. OPERATED	02B35	361605	R	3 3						
2	C 522 M3/4.3	R197			8073B-10HS28						
HY-V-A1/6	4 WAY SOLENOID PUMP DISCH	02B35	361976	R	3 3						
2	C 522 M3/4.3	V105			F3-DG4S4-016C-50						
HY-V-A1/7	4 WAY PILOT OPERATED	02B35	361977	R	3 3						
2	C 522 M3/4.3	V105			F3-DG3S4-042C-3-20						
HY-V-A1/9	SERVC VALVE	02B35	361978	R	3 3						
2	C 522 M3/4.3	V105			F3-SD4-03-620-004-10						
HY-V-A2/10	SHUT OFF VALVE (2)	02B35	361604	R	3 3						
2	C 522 M3/4.3	R197			8013B-10HS28						
HY-V-A2/11	0.5" CHECK SERVO-VALVE DRAIN	02B35	361601	R	3 3						
2	C 522 M3/4.3	R197			A455-8S28-1						
HY-V-A2/35	4 WAY VALVE MAN. OPERATED	02B35	361605	R	3 3						
2	C 522 M3/4.3	R197			8073B-10HS28						
HY-V-A2/6	4 WAY SOLENOID PUMP DISCH	02B35	361976	R	3 3						
2	C 522 M3/4.3	V105			F3-DG4S4-016C-50						
HY-V-A2/7	4 WAY PILOT OPERATED	02B35	361977	R	3 3						
2	C 522 M3/4.3	V105			F3-DG3S4-042C-3-20						
HY-V-A2/9	SERVC VALVE	02B35	361978	R	3 3						
2	C 522 M3/4.3	V105			F3-SD4-03-620-004-10						
HY-V-B1/6	4 WAY SOLENOID PUMP DISCH	02B35	361976	R	3 3						
2	R 522 J8/7.6	V105			F3-DG4S4-016C-50						
HY-V-B1/7	4 WAY PILOT OPERATED	02B35	361977	R	3 3						
2	R 522 J8/7.6	V105			F3-DG3S4-042C-3-20						
HY-V-B1/9	SERVO VALVE	02B35	361978	R	3 3						
2	R 522 J8/7.6	V105			F3-SD4-03-620-004-10						
HY-V-B2/6	4 WAY SOLENCID PUMP DISCH	02B35	361976	R	3 3						
2	R 522 J8/7.6	V105			F3-DG4S4-016C-50						
HY-V-B2/7	4 WAY PILOT OPERATED	02B35	361977	R	3 3						
2	R 522 J8/7.6	V105			F3-DG3S4-042C-3-20						
HY-V-B2/9	SERVC VALVE	02B35	361978	R	3 3						
2	R 522 J8/7.6	V105			F3-SD4-03-620-004-10						
LPCS-FCV-11	3" GLOBE LPCS-P-1 MIN FLOW MO	42A	133003	T	1 0	0.1					N

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 423 K1/3.5	F130			5248657							
LPCS-FCV-11+	3"MO GLOBE LPCS P-1 MIN FLOW RECIR				1 0							
1	R 423 K1/3.5											
LPCS-P-1	LPCS PUMP	02E21	233011	M	1 0		0.2			37		N
2	R 426 K.0/4.0	I075			29APKD-5 STAGE							
LPCS-P-1+	LPCS PUMP	02E21			1 0							
1	R 426 K.0/4.0											
LPCS-P-2	LPCS WATER LEG PUMP	35A	233006	A	2 0		0 1			82		N
2	R 424 J.7/3.6	C676			FIG 3065-1055-6599							
LPCS-P-2+	LPCS WATER LEG PUMP				2 0							
1	R 424 J.7/3.6											
LPCS-V-1	24" MO GATE SUPP POOL SUCTION	41A	361713	M	1 0		0.1			37		N
2	R 450 K.0/4.7	V085			DWG P2-3313-N-40							
LPCS-V-1+	24"MO SUPP POOL SUCTION VALVE	41A			2 0							
1	R 450 K.0/4.7											
LPCS-V-12	TEST LINE TO SUPP POOL B	41B	361024	B	2 0		0 1			41		N
2	R 450 J.9/3.9	A391			DWG 2647-3							
LPCS-V-12+		41B			2 0							
1	R 450 J.9/3.9											
LPCS-V-5	12" MO GATE TO REACTOR VESSEL	41A	361745	A	1 0	2 1	0.1			43		Y
2	R 525 M.0/4.5	V085			DWG P2-3311-N-15							
LPCS-V-5+	12"MO GATE CONTAINMENT BOUNDARY VL	41A			1 0							
1	R 525 M.0/4.5											
LPCS-V-6	12" CHECK TO REACTOR VESSEL	69	361770	M	1 0		0.1			51	P	Y
2	C 547 122 D AZ R16	V085			DWG P2-2767-N-2							
LPCS-V-6+	12" CHECK TO REACTOR VESSEL	69			1 0							
1	C 547 122 D AZ R16											
MS-AO-13A	AIR OPERATOR FOR MS-PCV-13A	02	018008		1 0							
2	C 547 AZ 35 R18	C710			C5246							
MS-AO-13B	RELIEF VLV AIR OPERATOR	02	018008		1 0							
2	C 547 AZ 45 R18	C710			C5246							
MS-AO-13C	RELIEF VLV AIR OPERATOR	02	018008		1 0							
2	C 547 AZ 321 R18	C710			C5246							
MS-AO-13D	RELIEF VLV AIR OPERATOR	02	018008		1 0							
2	C 547 AZ 305 R22	C710			C5246							
MS-AO-13E	RELIEF VLV AIR OPERATOR	02	018008		1 0							
2	C 547 AZ 45 R22	C710			C5246							
MS-AO-13F	RELIEF VLV AIR OPERATOR	02	018008		1 0							
2	C 547 AZ 60 R22	C710			C5246							
MS-AO-13G	RELIEF VLV AIR OPERATOR	02	018008		1 0							
2	C 547 AZ 293 R22	C710			C5246							
MS-AO-13H	RELIEF VLV AIR OPERATOR	02	018008		1 0							
2	C 547 AZ 67 R22	C710			C5246							
MS-AO-13J	RELIEF VLV AIR OPERATOR	02	018008		1 0							
2	C 547 AZ 24 R18	C710			C5246							
MS-AO-13K	RELIEF VLV AIR OPERATOR	02	018008		1 0							
2	C 547 AZ 333 R18	C710			C5246							
MS-AO-13L	RELIEF VLV AIR OPERATOR	02	018008		1 0							
2	C 547 AZ 313 R22	C710			C5246							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
MS-AO-13M	RELIEF VLV AIR OPERATOR	02	018008		1 0							
2	C 547 AZ 288 R22	C710			C5246							
MS-AO-13N	RELIEF VLV AIR OPERATOR	02	018008		1 0							
2	C 547 AZ 279 R22	C710			C5246							
MS-AO-13P	RELIEF VLV AIR OPERATOR	02	018008		1 0							
2	C 547 AZ 305 R18	C710			C5246							
MS-AO-13R	RELIEF VLV AIR OPERATOR	02	018008		1 0							
2	C 547 AZ 75 R22	C710			C5246							
MS-AO-13S	RELIEF VLV AIR OPERATOR	02	018008		1 0							
2	C 547 AZ 60 R18	C710			C5246							
MS-AO-13U	RELIEF VLV AIR OPERATOR	02	018008		1 0							
2	C 547 AZ 80 R22	C710			C5246							
MS-AO-13V	RELIEF VLV AIR OPERATOR	02	018008	X	1 0							
2	C 547 AZ 315 R18	C710			C5246							
MS-AO-22A	AIR OPERATOR MS-V-22A	02B22	018002	M	1 3		0 1			15	P	Y
2	C 510 10 D AZ R30	S157			SA-A022							
MS-AO-22B	AIR OPERATOR MS-V-22B	02B22	018002	M	1 3		0.1			15	P	Y
2	C 510 17 D AZ R30	S157			SA-A022							
MS-AO-22C	AIR OPERATOR MS-V-22C	02B22	018002	M	1 3		0 1			15	P	Y
2	C 510 344 D AZ R30	S157			SA-A022							
MS-AO-22D	AIR OPERATOR MS-V-22D	02B22	018002	M	1 3		0 1			15	P	Y
2	C 510 350 D AZ R30	S157			SA-A022							
MS-AO-28A	AIR OPERATOR MS-V-28A	02B22	018002	M	1 3		0 1			15		Y
2	R 515 H.3/6.0	S157			SA-A022							
MS-AO-28B	AIR OPERATOR MS-V-28B	02B22	018002	M	1 3		0 1			15		Y
2	R 515 H.3/6.0	S157			SA-A022							
MS-AO-28C	AIR OPERATOR MS-V-28C	02B22	018002	M	1 3		0 1			15		Y
2	R 515 H.3/6.0	S157			SA-A022							
MS-AO-28D	AIR OPERATOR MS-V-28D	02B22	018002	M	1 3		0 1			15		Y
2	R 515 H.3/6.0	S157			SA-A022							
MS-DPI-5		02		R	2 0							
2	R 471 MS/4.5	6080			0227							
MS-RV-1A	6" X 10" MAIN STEAM SAFETY RELIEF	02B22	297009	C	1 0	2 1	0.0			15		Y
2	C 547 AZ 24 R18	C710			6R10 HB-65-BP							
MS-RV-1A+	MS RELIEF VLV				1 0							
1	C 547 AZ 24 R18											
MS-RV-1B	6" X 10" MS SAFETY RELIEF VALVE	02B22	297009	C	1 0	2 1	0 0			15		Y
2	C 547 AZ 45 R22	C710			6R10 HB-65-BP							
MS-RV-1B+	MS-RELIEF VLV				1 0							
1	C 547 AZ 45 R22											
MS-RV-1C	6" X 10" MS SAFETY RELIEF VALVE	02B22	297009	C	1 0	2 1	0 0			15		Y
2	C 547 AZ 313 R22	C710			6R10 HB-65-BP							
MS-RV-1C+	MS-RELIEF VLV				1 0							
1	C 547 AZ 313 R22											
MS-RV-1D	6" X 10" MS SAFETY RELIEF VALVE	02B22	297009	C	1 0	2 1	0.0			15		Y
2	C 547 AZ 333 R18	C710			6R10 HB-65-BP							
MS-RV-1D+	MS-RELIEF VLV				1 0							
1	C 547 AZ 333 R18											
MS-RV-2A	6" X 10" MS SAFETY RELIEF VALVE	02B22	297009	C	1 0	2 1	0 0			15		Y

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2	C 547 AZ 35 R18	C710			6R10 HB-65-BP							
MS-RV-2A+	MS-RELIEF VLV				1 0							
1	C 547 AZ 35 R18											
MS-RV-2B	6" X 10" MS SAFETY RELIEF VALVE	02B22	297009	C	1 0	2 1	0 0			15		Y
2	C 547 AZ 60 R22	C710			6R10 HB-65-BP							
MS-RV-2B+	MS-RELIEF VLV				1 0							
1	C 547 AZ 60 R22											
MS-RV-2C	6" X 10" MS SAFETY RELIEF VALVE	02B22	297009	C	1 0	2 1	0 0			15		Y
2	C 547 AZ 305 R22	C710			6R10 HB-65-BP							
MS-RV-2C+	MS-RELIEF VLV				1 0							
1	C 547 AZ 305 R22											
MS-RV-2D	6" X 10" MS SAFETY RELIEF VALVE	02B22	297009	C	1 0	2 1	0 0			15		Y
2	C 547 AZ 321 R18	C710			6R10 HB-65-BP							
MS-RV-2D+	MS-RELIEF VLV				1 0							
1	C 547 AZ 321 R18											
MS-RV-3A	6" X 10" MS SAFETY RELIEF VALVE	02B22	297009	C	1 0	2 1	0 0			15		Y
2	C 547 AZ 45 R18	C710			6R10 HB-65-BP							
MS-RV-3A+	MS-RELIEF VLV				1 0							
1	C 547 AZ 45 R18											
MS-RV-3B	6" X 10" MS SAFETY RELIEF VALVE	02B22	297009	C	1 0	2 1	0 0			15		Y
2	C 547 AZ 67 R22	C710			6R10 HB-65-BP							
MS-RV-3B+	MS-RELIEF VLV				1 0							
1	C 547 AZ 67 R22											
MS-RV-3C	6" X 10" MS SAFETY RELIEF VALVE	02B22	297009	C	1 0	2 1	0 0			15		Y
2	C 547 AZ 293 R22	C710			6R10 HB-65-BP							
MS-RV-3C+	MS-RELIEF VLV				1 0							
1	C 547 AZ 293 R22											
MS-RV-3D	6" X 10" MS SAFETY RELIEF VALVE	02B22	297009	C	1 0	2 1	0 0			15		Y
2	C 547 AZ 315 R18	C710			6R10 HB-65-BP							
MS-RV-3D+	MS-RELIEF VLV				1 0							
1	C 547 AZ 315 R18											
MS-RV-4A	6" X 10" MS SAFETY RELIEF VALVE	02B22	297009	C	1 0	2 1	0 0			15		Y
2	C 547 AZ 60 R18	C710			6R10 HB-65-BP							
MS-RV-4A+	MS-RELIEF VLV				1 0							
1	C 547 AZ 60 R18											
MS-RV-4B	6" X 10" MS SAFETY RELIEF VALVE	02B22	297009	C	1 0	2 1	0 0			15		Y
2	C 547 AZ 75 R22	C710			6R10 HB-65-BP							
MS-RV-4B+	MS-RELIEF VLV				1 0							
1	C 547 AZ 75 R22											
MS-RV-4C	6" X 10" MS SAFESTY RELIEF VALVE	02B22	297009	C	1 0	2 1	0 0			15		Y
2	C 547 AZ 288 R22	C710			6R10 HB-65-BP							
MS-RV-4C+	MS-RELIEF VLV				1 0							
1	C 547 AZ 288 R22											
MS-RV-4D	6" X 10" MS SAFETY RELIEF VALVE	02B22	297009	C	1 0	2 1	0 0			15		Y
2	C 547 AZ 305 R18	C710			6R10 HB-65-BP							
MS-RV-4D+	MS-RELIEF VLV				1 0							
1	C 547 AZ 305 R18											
MS-RV-5B	6" X 10" MS SAFETY RELIEF VALVE	02B22	297009	C	1 0	2 1	0 0			15		Y
2	C 547 AZ 80 R22	C710			6R10 HB-65-BP							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
MS-RV-5B+	MS-RELIEF VLV				1 0							
1	C 547 AZ 80 R22											
MS-RV-5C	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	C	1 0	2 1	0 0			15		Y
2	C 547 AZ 279 R22	C710			6R10 HB-65-BP							
MS-RV-5C+	MS-RELIEF VLV				1 0							
1	C 547 AZ 279 R22											
MS-V-1+	REACTOR VESSEL HEAD VENT VLV				2 0							
1	C 573 AZ 225 R15											
MS-V-16	3" MC GATE FROM PRICONT	41A	361740	M	1 0		0 1			58	P	Y
2	C 502 360 D AZ R36	V085			DWG P2-3311-N-2							
MS-V-16+	3" MC GATE VLV FROM PRI CONT				1 0							
1	C 502 AZ 360 R36											
MS-V-19	3" MO GATE DRAIN BLOCK	41A	361740	T	1 0		0 1			58		N
2	R 504 H.3/6.0	V085			DWG P2-3311-N-1							
MS-V-19+	3"MO GATE VLV FM DRAIN BLOCK				1 0							
1	R 504 H.3/6.0											
MS-V-2	REACTOR VESSEL HEAD VENT	215	361205	P	2 0						P	Y
2	C 573 230 D AZ R15	8350			P 76850-1							
MS-V-2+	REACTOR VESSEL HEAD VENT				2 0							
1	C 573 AZ 230 R15											
MS-V-20	3" MO GATE MS DRAIN BLOCK	418	361019	C	1 3							
2	R 504 H.6/6.0	A391			2650-3							
MS-V-20+	3" MC GATE MS DRAIN BLOCK				1 3							
2	R 504 H.6/6.0											
MS-V-22A	26" AO GLOBE MSIV (INBOARD)	02822	361964	M	1 3		0 1			15		Y
2	C 505 AZ 5 R32	R340			1612JMMNTY							
MS-V-22A+	MS ISOL VLV				1 3							
1	C 505 AZ 5 R32											
MS-V-22B	26" AO GLOBE MSIV (INBOARD)	02822	361964	M	1 3		0 1			15		Y
2	C 506 AZ 15 R32	R340			1612JMMNTY							
MS-V-22B+	MS ISOL VLV				1 3							
2	C 506 AZ 15 R32											
MS-V-22C	26" AO GLOBE MSIV (OUTBOARD)	02822	361964	M	1 3		0 1			15		Y
2	C 506 AZ 315 R32	R340			1612JMMNTY							
MS-V-22C+	MS ISOL VLV				1 3							
1	C 506 AZ 315 R32											
MS-V-22D	26" AO GLOBE MSIV (INBOARD)	02822	361964	M	1 3		0 1			15		Y
2	C 506 355 D AZ R32	R340			1612JMMNTY							
MS-V-22D+	MS ISOL VLV				1 3							
1	C 506 AZ 355 R32											
MS-V-28A	26" AO GLOBE MSIV (OUTBOARD)	02822	361964	M	1 3		0 1			15		Y
2	R 506 H.8/5.8	R340			1612JMMNTY							
MS-V-28A+	MS ISOL VLV				1 3							
1	R 506 H.8/5.8											
MS-V-28B	26" AC GLOBE MSIV (OUTBOARD)	02822	361964	M	1 3		0 1			15		Y
2	R 506 H.8/5.6	R340			1612JMMNTY							
MS-V-28B+	MS ISOL VLV				1 3							
1	R 506 H.8/5.6											
MS-V-28C	26" AO GLOBE MSIV (OUTBOARD)	02822	361964	M	1 3		0 1			15		Y

EQUIPMENT NO.	DESCRIPTION	CONTRACT	QID	QS	USE	TEST	ANL	F/O	C	FREQ	TM	UL
LV	PLANT LOCATION	MFG			MFG MODEL NO.							
2	R 506 H.8/6.4	R340			1612JMMNTY							
MS-V-28C+	MS ISCL VLV				1 3							
1	R 506 H.8/6.4											
MS-V-28D	MSIV (OUTBOARD) 26" A.C. GLOBE	02822	361964	M	1 3		0.1			15		Y
2	R 506 H.8/6.2	R340			1612JMMNTY							
MS-V-28D+	MS ISCL VLV				1 3							
1	R 506 H.8/6.2											
MS-V-5	REACTOR VESSEL HEAD VENT	215	361205	P	2 0		0 1			34	P	Y
2	C 575 AZ 220 R12	B350			P:76850-1							
MS-V-5+	REACTOR VESSEL HEAD VENT VLV				2 0							
1	C 575 AZ 220 R12											
MS-V-67A	MS-V-28A BODY DRAIN SHUT	215		R	1 0							
2	R 506 H.8/5.8											
MS-V-67A+	MS-V-28A BODY DRAIN				1 0							
1	R 506 H.8/5.8											
MS-V-67B	MS-V-28B BODY DRAIN SHUT	215		R	1 0							
2	R 506 H.8/5.6											
MS-V-67B+	MS-V-28B BODY DRAIN				1 0							
1	R 506 H.8/5.6											
MS-V-67C	MS-V-28C BODY DRAIN SHUT	215		R	1 0							
2	R 506 H.8/6.4											
MS-V-67C+	MS-V-28C BODY DRAIN				1 0							
1	R 506 H.8/6.4											
MS-V-67D	MS-V-28D BODY DRAIN SHUT	215		R	1 0							
2	R 506 H.8/6.2											
MS-V-67D+	MS-V-28D BODY DRAIN				1 0							
1	R 506 H.8/6.2											
MSLC-FN-1	INBD. MS LINE DEPRESS. FAN	28	145009	M	1 0		0 1					N
2	R 473 H.3/6.3	B515			7W93689							
MSLC-FN-1+	INBD. MS LINE DEPRESS. FAN	28			1 0							
1	R 473 H.3/6.3											
MSLC-FN-2	OUTBD MS LINE DEPRES FAN	28	145009	M	1 0		0 1					N
2	R 511 H.3/7.0	B515			7W93689REV6							
MSLC-FN-2+	OUTBD. MS LINE DEPRESS. FAN	28			1 0							
1	R 511 H.3/7.0											
MSLC-V-1A	1.5" GATE MS VENT BYPASS VALVE	215	361204	D	1 0						P	
2	R 471 H.5/5.5	B350			79020-001							
MSLC-V-1A+	1.5" GATE MS VENT BYPASS VALVE	215			1 0							
1	R 471 H.5/5.5											
MSLC-V-1B	1.5" GATE MS VENT BYPASS VALVE TO	215		D	1 0						P	
2	R 471 H.5/5.6	B350			79020-001							
MSLC-V-1B+	1.5" GATE MS VENT BYPASS VALVE	215			1 0							
1	R 471 H.5/5.6											
MSLC-V-1C	1.5" GATE MS VENT BYPASS VALVE TO	215	361204	D	1 0						P	
2	R 471 H.5/5.6	B350			79020-001							
MSLC-V-1C+	1.5" GATE VENT BYPASS MS VALVE	215			1 0							
1	R 471 H.5/5.6											
MSLC-V-1D	1.5" GATE MS VENT BYPASS VALVE TO	215	361204	D	1 0						P	
2	R 471 H.5/5.5	B350			79020-001							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
HSLC-V-10+	1.5" GATE MS VENT BYPASS VALVE	215			1 0							
1	R 471 H.5/5.5											
HSLC-V-10	1.5" GATE MS DEPRES. VENT VALVE TO	215	361204	D	1 0						P	
2	R 501 H.1/6.4	B350			P 76890-001							
HSLC-V-10+	1.5" GATE MS DEPRESS VENT VALVE	215			1 0							
1	R 501 H.1/6.4											
HSLC-V-2A	1.5" GATE LOOP "A"	215	361204	D	1 0						P	
2	R 502 H.6/5.5	B350			P 76890-001							
HSLC-V-2A+	1.5" GATE LOOP "A" MANIFOLD	215			1 0							
1	R 502 H.6/5.5											
HSLC-V-2B	1.5" GATE LOOP "B" MANIFOLD MO	215	361204	D	1 0						P	
2	R 502 H.6/5.3	B350			P 76890-001							
HSLC-V-2B+	1.5" GATE LOOP "B" MANIFOLD	215			1 0							
1	R 502 H.6/5.3											
HSLC-V-2C	1.5" GATE LOOP "C" MANIFOLD MO	215	361204	D	1 0						P	
2	R 502 H.6/6.4	B350			P 76890-001							
HSLC-V-2C+	1.5" GATE LOOP "C" MANIFOLD	215			1 0							
1	R 502 H.6/6.4											
HSLC-V-2D	1.5" GATE LOOP "D" MANIFOLD MO	215	361204	D	1 0						P	
2	R 502 H.4/5.8	B350			P 76890-001							
HSLC-V-2D+	1.5" GATE LOOP "D" MANIFOLD	215			1 0							
1	R 502 H.4/5.8											
HSLC-V-3A	1.5" GATE LOOP "A"	215	361204	D	1 0						P	
2	R 502 H.6/5.5	B350			P 76890-001							
HSLC-V-3A+	1.5" GATE LOOP "A"	215			1 0							
1	R 502 H.6/5.5											
HSLC-V-3B	1.5" GATE LOOP "B"	215	361204	D	1 0						P	
2	R 502 H.6/5.3	B350			P 76890-001							
HSLC-V-3B+	1.5" GATE LOOP "B"	215			1 0							
1	R 502 H.6/5.3											
HSLC-V-3C	1.5" GATE LOOP "C" MO	215	361204	D	1 0						P	
1	R 502 H.6/6.4	B350			P 76890-001							
HSLC-V-3C+	1.5" GATE LOOP "C"	215			1 0							
1	R 502 H.6/6.4											
HSLC-V-3D	HSLC ISC VALVE	215	361204	D	1 0						P	
2	R 502 H.4/5.8	B350			P 76890-001							
HSLC-V-3D+	1.5" GATE LOOP "D"	215			1 0							
1	R 502 H.4/5.8											
HSLC-V-4	1.5" GATE TO GAS TREATMENT	215	361204	D	1 0						P	
2	R 502 H.2/6.0	B350			P 76890-001							
HSLC-V-4+	1.5" GATE TO GAS TREATMENT	215			1 0							
1	R 502 H.2/6.0											
HSLC-V-5	1.5" GATE TO GAS TREATMENT	215	361204	D	1 0						P	
2	R 502 H.2/6.2	B350			P 76890-001							
HSLC-V-5+	1.5" GATE TO GAS TREATMENT	215			1 0							
1	R 502 H.2/6.2											
HSLC-V-9	1.5" GATE MS DEPRES VENT VALVE TO	215		R	1 0							
2	R 502 H.2/6.4	B350			P 76890-1							
HSLC-V-9+	1.5" GATE MS DEPRES VENT VALVE	215			1 0							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE TEST / MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
1	R 502 H.2/6.4	B350			P/76890-1						
HT-CRA-2	RX:BLDG (125TON/15TON)	31A	055001	M	3 0	0 1					N
1	R 648	W170									
HT-CRA-9A	PORTABLE REFUEL. J1B (1/2 TON)	32C0	055002	M	3 0	0 1					N
1	R 607 J5/7.5				L05G44FB20						
HT-CRA-9B	PORTABLE REFUEL. J1B (1/2 TON)	32C0	055002	M	3 0	0 1					N
1	R 607 L9/8.5				L05G44FB20						
NSSE-CRA-3		2	055003	R	3 0						
1	R 601	6080			762E8926002						
NSSE-EJ-1	INNER REFUELING BELLOWS	17		R	3 0						
2	R 601	P090									
NSSE-EJ-2	OUTER REFUELING BELLOWS	17		R	3 0						
1	R 601	P090									
NSSE-EQ-1A	FUEL PREPARATION MACHINES	2	120004	B	3 0	0 2			17		Y
1	R 601	6080			283X7596001						
NSSE-EQ-18	UWATER VAC CLEANER SEE NSSE-P-7	2			3 0						
1	R 606	6080									
NSSE-EQ-8	INSERVICE INSPECTION PLATFORM	2		B	3 0	0 2			09		Y
1	R 606	6080									
POA-AD-1A1	AUTOMATIC DAMPER, POA-FN-2A INLET	216	011001	R	4 3						
2	A 441 A.2/1.1	P014			P.O. 630-N-31408						
POA-AD-1A1+	AUTOMATIC DAMPER,POA-FN-2A INLET				4 3						
1	A 441 A.2/1.1										
POA-AD-1A2	AUTOMATIC DAMPER, POA-FN-2A INLET	216	011001	R	4 3						
2	A 445 A.2/1.1	P014			P.O. 630-N-31408						
POA-AD-1A2+	AUTOMATIC DAMPER, POA-FN-2A INLET				4 3						
1	A 445 A.2/1.1										
POA-AD-1B1	AUTOMATIC DAMPER, POA-FN-2B INLET	216	011001	R	4 3						
2	A 441 A.2/1.1	P014			P.O. 630-N-31408						
POA-AD-1B1+	AUTOMATIC DAMPER,POA-FN-2B INLET				4 3						
1	A 441 A.2/1.1										
POA-AD-1B2	AUTOMATIC DAMPER, POA-FN-2B INLET	216	011001	R	4 3						
2	B 445 A.2/1.1	P014			P.O. 630-N-31408						
POA-AD-1B2+	AUTOMATIC DAMPER,POA-FN-2B INLET				4 3						
1	A 445 A.2/1.1										
POA-FN-2A	SW PUMPHOUSE A SUPPLY FAN	28	145014	B	4 3	0 1			21	F	N
2	A 441 A.2/1.3	B515			S.O.745-9792						
POA-FN-2A+	SW PUMPHOUSE A SUPPLY FAN				4 3						
1	A 441 A.2/1.3										
POA-FN-2B	SW PUMPHOUSE B SUPPLY FAN	28	145014	B	4 3	0 1			21		N
2	B 441 A.2/1.3	B515			S.O.745-9792						
POA-FN-2B+	SW PUMPHOUSE B SUPPLY FAN				4 3						
1	B 441 A.2/1.3										
PRA-FN-1A	SUPPLY FAN PRA-FC-1A	67	145010		4 3					F	
2	A 441 D.6/1.5	P295			W.O. MS-5040						
PRA-FN-1B	SUPPLY FAN PRA-FC-1A	67	145010		4 3						
2	B 411 C.4/1.6	P295			P L-75-135-GR.1E						
RCC-V-104	10" GATE VALVE BODY	41A		R	1 0						
2	R										

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
RCC-V-104+	COMPOSITE 10" MO GATE	41A			1 0							
1												
RCC-V-129	8" GATE FPC-HXS INLET	41A		R	1 0							
2												
RCC-V-129+	COMPOSITE FOR RCC-V-129				1 0							
1												
RCC-V-130+	COMPOSITE FOR RCC-V-130				1 0							
1												
RCC-V-131	6" GATE FPC HXS OUTLET	41A		R	1 0							
2	R 556 L/9											
RCC-V-131+	COMPOSITE FOR RCC-V-131				1 0							
1												
RCC-V-21	10" MO GATE PRIM CONT OUT	41A	361706	R	1 0							
2	R 514 K.3/4.2	V085			DWG P2-3311-N-11							
RCC-V-21+	COMPOSITE FOR RCC-V-21				1 0							
1	R 514 K.3/4.2											
RCC-V-40	10" GATE MO RCC RET FROM PR	41A	361706	R	1 0						P	
2	C 514 78 D AZ R33	V085			DWG P2-3311-N-11							
RCC-V-40+	COMPOSITE FOR RCC-V-40				1 0							
1	C 514 78 D AZ R33											
RCC-V-5	10" MO GATE PRIM CONT INLET ISO	41A	361706	R	1 0							
2	R 514 K.3/4.1	V085			DWG P2-3311-N-11							
RCC-V-5+	COMPOSITE FOR RCC-V-5				1 0							
1	R 514 K.3/4.1											
RCIC-AC-25	AIR OPERATOR RCIC-V-25	215		R	3 1							
2	R											
RCIC-AC-26	AIR OPERATOR RCIC-V-26	215		R	3 1							
2	R											
RCIC-AC-4	AIR OPERATOR RCIC-V-4	215		R	3 1							
2	R											
RCIC-AC-5	AIR OPERATOR RCIC-V-5	215		R	3 1							
2	R											
RCIC-AC-54	AIR OPERATOR RCIC-V-54	215		R	3 1							
2	R											
RCIC-AC-65	AIR OPERATOR RCIC-V-65	69	018004	R	2 1							
2	R				DSK2764							
RCIC-AC-66	AIR OPERATOR RCIC-V-66	69		R	2 1							
2	R 590.200 D AZ											
RCIC-DT-1	RCIC TURBINE E51-C002	02E51	094001	R	3 1							
2	R 426 H.5/7.4	T147			GS-2							
RCIC-DT-1+					3 1							
1	R 426 H.5/7.4											
RCIC-HC-2	HYD OPERATOR RCIC-V-2 GOV VALVE		170001	R	3 1							
2	R 426 H3/7.8	W296			P 8250-190							
RCIC-P-1	RCIC PUMP	02E51	233012	R	3 1							
2	R 425 H.6/7.3	B260			6X6X101/2CP							
RCIC-P-2	RCIC VACUUM PUMP		233013	M	3 1		0 1					N
2	R 424 H.2/5.9	N010			M0573							
RCIC-P-3	RCIC WATER LEG PUMP		233014	R	3 1							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT	MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 424 H.4/7.7		C676			FIG 3065-1055-6599							
RCIC-P-4	RCIC CONDENSATE PUMP				R	3 1							
2	R 424 H.3/6.4		G080										
RCIC-P-5	RCIC TURBINE MAIN CIL PUMP	02E51		233024		3 1							
2	R 422 H.5/6.8		T343			CRFD-1							
RCIC-PC-15	PRESSURE CONTROL FOR RCIC-PCV-15			235001		3 1						P	
2	427 H.5/7.2		F130			4160							
RCIC-RV-17	PRESSURE RELIEF VLV 0.75" X 1" R11	215			T	3 1		0 1			73		N
2	R 431 H.3/7.7		L265										
RCIC-RV-18	PRESSURE RELIEF VLV 0.75" X 1" R63	215		297002	T	3 1		0 1			99+		N
2	R 427 H.3/7.8		L265			LCT-11							
RCIC-RV-33	PR. RELIEF VLV 1.5X2.5" RCIC-TK-1	215		297005	N	3 0		0 1			99+		N
2	R 427 H.5/6.7		C710			JO-25-WRB							
RCIC-V-1	3"MO STOP RCIC TRIP THROTTLE VALVE	02E51		361967	R	3 1							
2	R 428 H.7/7.3		S075			69-XC-113							
RCIC-V-10.	8" MO GATE VLV-SUCTION COND-P-5,3,	41A		361705	R	3 1							
2	R 426 H.4/6.3		V085			DWG P2-3311-N-9							
RCIC-V-10+						3 1							
1	R 426 H.4/6.3												
RCIC-V-110	2" VAC. REL. VLV M.O.-80	215		361205	P	2 1		0 1			99+	P	Y
2	R 475 J.6/7.4		B350			79360							
RCIC-V-110+						2 1							
1	R 475 J.6/7.4												
RCIC-V-113	VAC. REL. VLV M.O.-86	215		361285	P	2 1		0 1			99+	P	Y
2	R 475 J.6/7.4		B350			DWG P2-3311-N-4							
RCIC-V-113+						2 1							
1	R 475 J.6/7.4												
RCIC-V-12	6" MO GATE TO REACTOR HEAD	41A		361742	A	3 1	2 1	0 1			70		N
2	R 423 H.4/7.7		V085			DWG P2-3311-N-4							
RCIC-V-13	6" MO GATE TO RX HEAD	41A		361742	C	2 1	2 1	0 1			70		N
2	R 552 M.3/5.5		V085			DWG P2-3311-N-4							
RCIC-V-13+						2 1							
1	R 552 M.3/5.5												
RCIC-V-141	RHR STEAM SPLY TRAP STATION CORA	215		361201	B	3 1		0 1			99+		N
2	R 549 110 D AZ		B350			P 76590							
RCIC-V-19	RCIC PUMP DIS TO SUPP POOL	215		361205	A	2 1		0 1			34		N
2	R 467 J.4/7.7		B350			P 76850							
RCIC-V-19+						2 1							
1	R 467 J.4/7.7												
RCIC-V-19B	1" GLOBE PS-19B TO SR-6	215			X	3 0							
2	567 M.3/5.3												
RCIC-V-2	3"MO PLUG RCIC TURBINE GOV VALVE	02E51		361968	R	3 1							
2	R 425 H.5/6.7		S075			DWG 66726A							
RCIC-V-2+						3 1							
1	R 425 H.5/6.7												
RCIC-V-22	6" MO GLOBE PUMP DISCH TC CST	41B		361004	M	3 1		0 1			67		N
2	R 443 H.5/8.1		A391			DWG 2653-3							
RCIC-V-22+						3 1							
1	R 443 H.5/8.1												

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
RCIC-V-25	ON OR LINE FROM TURB STM DRIP POT	215	361202	A	3 1		0 1			32		N
2	R 423 H.3/6.9	B350			DWG 78560							
RCIC-V-25+					3 1							
1	R 423 H.3/6.9											
RCIC-V-26	ON OR LINE FROM TURB STM DRIP POT	215	361202	A	3 1		0 1			32		N
2	R 423 H.3/6.8	B350			DWG 78560							
RCIC-V-26+					3 1							
1	R 423 H.3/6.8											
RCIC-V-31+					2 1							
1	R 449 H.8/7.0											
RCIC-V-4	1" AO.VLV DISC RCIC-P-4 TO EDR	215	361202	A	3 1		0 1			32		N
2	R 424 H.7/6.7	B350			DWG 78560							
RCIC-V-4+					3 1							
1	R 424 H.7/6.7											
RCIC-V-45	4" MO GLOBE TURB INLET	41B	361020	A	3 1		0.1			55		N
2	R 425 H.8/7.2	A391			DWG 2651-3							
RCIC-V-45+					3 1							
1	R 425 H.8/7.2											
RCIC-V-46	AUX CLG SUPPLY	215	361205	A	3 1		0 1			34		N
2	R 423 H.4/7.0	B350			P 76850							
RCIC-V-46+					3 1							
1	R 423 H.4/7.0											
RCIC-V-5	1"AO VLV RCIC-P-2 DISCH TO EDR	215	361202	A	3 1		0.1			32		N
2	R 423 H.3/6.5	B350			P 78560							
RCIC-V-5+					3 1							
1	R 423 H.3/6.5											
RCIC-V-54	DIAPH OP & CONTROL VLV STM TRAP BYP	215	361202	A	3 1		0.1			32		N
2	R 423 H.7/7.0	B350			P 78560							
RCIC-V-54+					3 1							
1	R 423 H.7/7.0											
RCIC-V-59	6" MO GATE RETURN TO CST	41A	361742	A	3 1	2 1	0.1			70		N
2	R 443 H.7/8.1	V085			DWG P2-3311-N-4							
RCIC-V-59+					3 1							
1	R 443 H.7/8.1											
RCIC-V-63	10" MO GATE MS TO RHR HX RCIC TURB	41A	361744	N	2 1		0.1			50+		Y
2	C 551 130 D AZ R19	V085			DWG P2-3311-N-14							
RCIC-V-63+					2 1							
1	C 551 130 D AZ R19											
RCIC-V-64	10" GATE MS TO RHR HX PC ISOL	41A	361744	C	2 1		0.1			50+		N
2	R 550 L.7/4.7	V085			DWG P2-3311-N-14							
RCIC-V-64+					2 1							
1	R 550 L.7/4.7											
RCIC-V-65	TESTABLE CHECK ON RCIC ITO REACTOR	69	361761	M	2 1		0.1			45		N
2	R 566 M.6/5.6	V085			DWG P2-2767-N-1							
RCIC-V-65+					2 1							
1	R 566 M.6/5.6											
RCIC-V-66	6" CHECK TEST. CHK/RCIC IO REACTOR	41B	361053	M	2 1		0 1					Y
2	C 606 150 AZ	A391			3489-3							
RCIC-V-66+					2 1							

WASHINGTON PUBLIC POWER SUPPLY SYSTEM
SAFETY RELATED EQUIPMENT LIST FOR NRC-SORT

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE TEST / MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
1	C 606 150 AZ										
RCIC-V-68	10" MO GATE TURB EXH TO SUPP POOL	41A	361706	R	2 1						
2	R 474 J.1/7.5	V085			DWG P2-3311-N-11						
RCIC-V-68+					2 1						
1	R 474 J.1/7.5										
RCIC-V-69	VACUUM PUMP DIS TO SUPP.1 1/2" VLV	215	361205	C	2 1	0.1			99+		N
2	R 465 345 C AZ	B350			DWG 79360.						
RCIC-V-69+					2 1						
1	R 465 345 C AZ										
RCIC-V-76	1" GLOBE RCIC-V-63 BYPASS MO	215	361202	M	2 1	0.1			34+	P	N
2	C 556 120 D	B350			106DAA3-001						
RCIC-V-76+					2 1						
1	C 556 120 D										
RCIC-V-8	4" MO GATE STEAM TO RCIC TURBINE	41A	361741	T	2 1	0.1					N
2	R 512 J1/5	V085			DWG P2-3311-N-2						
RCIC-V-8+					2 1						
1	R 512 J.1/5.0										
REA-AO-V1	AIR OPER FOR VALVE REA-V-1			R	1 3						
2	R 597 H.2/6.2	M322			A83B						
REA-AO-V2	AIR OPER FOR VALVE REA-V-2			R	1 3						
2	R 597 H.4/6.2	M322			A83B						
REA-V-1	72.0" BFLY R BLD ISO	68	361102	D	1 3					P	
2	R 597 H.2/6.2	B258			DWG A206760.						
REA-V-1+	RX BLDG EXH VLV DISCH COMPOSITE				1 3						
1	R 597 H.2/6.2										
REA-V-2	72.0" BFLY R BLD ISO	68	361102	D	1 3					P.	
2	R 597 H.4/6.2	B250			DWG A-206760.						
REA-V-2+	RX BLDG EXH VLV DISCH COMPOSITE				1 3						
1	R 597 H.4/6.2										
RFW-V-32A	24" AO CHECK RFW OUTBOARD ISOL	41B	361057	M	2 3	0 1					N
2	R 512 H6/5.7	A391			3084-3						
RFW-V-32A+	24" AO CHECK RFW OUTBOARD ISOL				2 3						
1	R 512 H.6/5.7										
RFW-V-32B	24" AO CHECK RFW OUTBOARD ISOL	41B	361057	M	2 3	0 1					N
2	R 512 H6/6.3	A391			3084-3						
RFW-V-32B+	24" AO CHECK RFW OUTBOARD ISOL				2 3						
1	R 512 H.6/6.3										
RFW-V-65A+	24" MO GATE RFW INLET TO RPV				2 3						
1	R 501 H.4/5.7										
RFW-V-65B	24" MO GATE RFW INLET TO RPV	41A	361751	C	2 3	0 1			38		N
2	R 512 H3/6	V085			DWG P2-3313-N-33						
RFW-V-65B+	24" MO GATE RFW INLET TO RPV				2 3						
1	R 512 H.3/6.0										
RHR-AO-41A	AIR OPERATOR RHR-V-41A	69	018012	R	3 0					P	
2	C 569 20 D AZ R19	V085			DWG P2-2767-N						
RHR-AO-41B	AIR OPERATOR RHR-V-41B	69	018012	R	3 0					P	
2	C 569 160 C AZ R19	V085			DWG P2-2767-N						
RHR-AO-41C	AIR OPERATOR RHR-V-41C	69	018012	R	3 0					P	
2	C 569 340 C AZ R19	V085			DWG P2-2767-N						

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE TEST / MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
RHR-AO-50A	AIR OPERATOR RHR-V-50A	69		R	3 0					P	
2	C 513 95 D AZ R28	V085			DWG P2-2767-N-3						
RHR-AO-50B	AIR OPERATOR RHR-V-50B	69		R	3 0					P.	
2	C 513 285 D AZ R27	V085			DWG P2-2767-N-3						
RHR-AO-89	AIR OPERATOR RHR-V-89		018012	R	2 0						
2	R 553 M.2/8.9	V085			DWG P2-2767-N-2						
RHR-FCV-64A	3" MO GLOBE RHR A MIN FLOW	42A	133003	M	1 3	0.1					N
2	R 443 K.0/9.1	F130			52A8657						
RHR-FCV-64A+	3" MO GLOBE RHR A MIN FLOW				1 3						
1	R 443 K.0/9.1										
RHR-FCV-64B	3" MO GLOBE RHR B MIN FLOW	42A	133002	M	1 3	0.1					N
2	R 443 M.0/9.1	F130			52A8657						
RHR-FCV-64B+	3" MO GLOBE RHR B MIN FLOW			R	1 3						
1	R 443 M/9.1	F130			SMB-000						
RHR-FCV-64C	3" MO GLOBE RHR C MIN FLOW	42A	133002	M	1 0	0.1					N
2	R 443 J.0/4.9	F130			52A8657						
RHR-FCV-64C+	3" MO GLOBE RHR C MIN FLOW			R	1 0						
1	R 443 J/4.9	F130			SMB-000						
RHR-LCV-65A	LINE FROM RHR HEAT EXCHANGER 1A	42A	193001	M	1 1	0.1					N
2	R 481 7.9/K	F130			52A8653						
RHR-LCV-65A+	LINE FROM RHR HEAT EXCHANGER 1A				1 1						
1	R 481 K.0/7.9										
RHR-LCV-65B	2.5"GLOBE LINE FROM RHR HEAT EXCHA	42A	193001	M	1 1	0.1					N
2	R 475 L3/8.1	F130			2808-42A						
RHR-LCV-65B+	2.5"GLOBE LINE FROM RHR HEAT EXCHA				1 1						
1	R 475 L.3/8.1										
RHR-P-2A	RHR PUMP LOOP A HX SUPPLY	02E12	233011	M	1 3	0.2			18		N
2	R 424 K.2/8.5	I075			29APKD						
RHR-P-2A+	RHR PUMP A				1 3						
1	R 424 K.2/8.5										
RHR-P-2B	RHR PUMP LOOP A HX SUPPLY	02E12	233011	M	1 3	0.2			18		N
2	R 424 L.8/8.5	I075			29APKD-3						
RHR-P-2B+	RHR PUMP				1 3						
1	R 424 L.8/8.5										
RHR-P-2C	RHR PUMP CE12-C002C	02E12	233011	M	1 0	0 2			18		N
2	R 422 H.7/4.7	I075			29APKD						
RHR-P-2C+	RHR PUMP CE12-C002C.				1 0						
1											
RHR-P-3	RHR WATER LEG PUMP	35A	233006	A	2 3	0 1			82		N
2	R 423 H.3/4.7	C676			FIE 3065-1055-6599						
RHR-P-3+	RHR WATER LEG PUMP				2 3						
1	R 423 H.3/4.7										
RHR-PCV-51A	8 CONTV PIC SONIC FLOW: SPECIAL TY	42A	236004	M	1 1	0 1			17+		N
2	R 578 J/9.3	F130			53A2406						
RHR-PCV-51A+	8 CONTV PIC SONIC FLOW: SPECIAL TY				1 1						
1	R 578 J.0/9.3										
RHR-PCV-51B	8 CONTV PIC SONIC FLOW: SPECIAL TY	42A	236004	M	1 1	0 1			17+		N
2	R 575 M.8/9.3	F130			T 667-ELP						
RHR-PCV 51B+	8 CONTV PIC SONIC FLOW: SPECIAL TY				1 1						

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1	R 575 M.8/9.3											
RHR-PI-2A	PRESSURE INDICATIOR FOR RHR-P-2A	02	243001		3 0							
2	R	R290			613B							
RHR-PI-2B	PRESSURE INDICATOR FOR RHR-P-2B	02	243001		3 0							
2	R	R290			613B							
RHR-V-11A	4" MO GATE RHR HX A OUTLET	41A	361723	A	1 1		0 1			58		N
2	R 474 K.2/8.1	V085			DWG P2-3311-N-7							
RHR-V-11A+	4" MO GATE RHR A OUTLET				1 1							
1	R 474 K.2/8.1											
RHR-V-11B	4" MO GATE RHR HX B OUTLET	41A	361723	A	1 1		0 1			58		N
2	R 474 L.8/8.1	V085			DWG P2-3311-N-7							
RHR-V-11B+	4" MO GATE RHR HX B OUTLET				1 1							
1	R 474 L.8/8.1											
RHR-V-115	14" MO GATE FROM SW	41A	361728	R	1 0							
2	R 553 9.1/N.0	V085			DWG P2-3311-N-31							
RHR-V-115+	14" MO GATE FROM SW				1 0							
1	R 553 N.0/9.1											
RHR-V-116	14" MO GATE FROM SW	41A	361728	R	1 0							
2	R 553 9.0/N.0	V085			DWG P2-3311-N-31							
RHR-V-116+	14" MO GATE FROM SW				1 0							
1	R 553 N.0/9.0											
RHR-V-123A	RHR-V-50 BYPASS	215	361202	D	2 3						P	
2	C 513 93 D AZ R31	B350			P 76890-2							
RHR-V-123A+	RHR-V-50 BYPASS				2 3							
1	C 513 93 D AZ R31											
RHR-V-123B	RHR-V-50 BYPASS	215	361202	D	2 3						P	
2	C 509 270 D AZ R27	B350			P 76890-2							
RHR-V-123B+	RHR-V-50 BYPASS				2 3							
1	C 509 270 D AZ R27											
RHR-V-124A	RHR DRIP POT DRAIN TO RADWASTE	215	361204	A	2 1		0 1			65		N
2	R 472 K.8/8.1	B350			304EAC3-004							
RHR-V-124A+	RHR DRIP POT DRAIN TO RADWASTE				2 1							
1	R 472 K.8/8.1											
RHR-V-124B	RHR DRIP POT DRAIN TO RADWASTE	215	361204	A	2 1		0 1			65		N
2	R 472 L.2/8.1	B350			P 304EAB3-001							
RHR-V-124B+	RHR DRIP POT DRAIN TO RADWASTE				2 1							
1	R 472 L.2/8.1											
RHR-V-125A	RHR DRIP POT DRAIN	215	361204	A	2 1		0 1			65		N
2	R 472 8/L.5	B350			P 304EAB3-001							
RHR-V-125A+	RHR DRIP POT DRAIN				2 1							
1	R 472 L.5/8.0											
RHR-V-125B	RHR DRIP POT DRAIN TO RADWASTE	215	361204	A	2 1		0 1			65		N
2	R 472 8/L.4	B350			P 304EAB3-001							
RHR-V-125B+	RHR DRIP POT DRAIN TO RADWASTE				2 1							
1	R 472 L.4/8.0											
RHR-V-134A	2" GLOBE CAC INTERTIE TO RHR	215	361205	C	1 0							
2	R 548 K1/9.0	B350			DWG 82120							
RHR-V-134A+	CAC INTERTIE TO RHR				1 0							
1	R 548 K.1/9.0											

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RHR-V-134B	2" GLOBE CAC INTERTIE TO RHR	215	361205	C	1 0							
2	R 548 L5/9.2	B350			DWG 82120							
RHR-V-134B+	CAC INTERTIE TO RHR				1 0							
1	R 548 L.5/9.2											
RHR-V-16A	16" MO GATE SPRAY HEADER	41A	361729	M	1 0		0 1			70		Y
2	R 550 L.0/4.5	V085			DWG P2-3313-N-35							
RHR-V-16A+	16" MO GATE SPRAY HEADER				1 0							
1	R 550 L.0/4.5											
RHR-V-16B	16" MO GATE DRYWELL SPRAY HEADER	41A	361729	M	1 0		0 1			71+		N
2	R 513 K.1/7.9	V085			DWG P2-3313-N-35							
RHR-V-16B+	16" MO GATE DRYWELL SPRAY HEADER				1 0							
1	R 513 K.1/7.9											
RHR-V-17A	16" MO GATE DRYWELL SPRAY HDR	41A	361729	M	1 0		0 1			71+		N
2	R 550 L.1/4.5	V085			DWG P2-3313-N-35							
RHR-V-17A+	16" MO GATE DRYWELL SPRAY HDR				1 0							
1	R 550 L.1/4.5											
RHR-V-17B	16" MO GATE DRYWELL SPRAY HEADER	41A	361729	M	1 0		0 1			71+		N
2	R 508 K/8.3	V085			DWG P2-3313-N-35							
RHR-V-17B+	16" MO GATE DRYWELL SPRAY HEADER				1 0							
1	R 508 K.0/8.3											
RHR-V-21	18" MO GLOBE LOOP C RET TO SUPP PO	41B	361027	A	1 0		0 1			35+		N
2	R 446 H.4/5.8	A391			DWG 2648-3							
RHR-V-21+	18" MO GLOBE LOOP C RET TO SUPP PO				1 0							
1	R 446 H.4/5.8											
RHR-V-23	6" MO GLOBE RHR TO RX HEAD SPRAY	41B	361021	B	1 3		0 1			93		N
2	R 550 M.2/5.1	A391			DWG 2654-3							
RHR-V-23+	6" MO GLOBE RHR TO RX HEAD SPRAY				1 3							
1	R 550 M.2/5.1											
RHR-V-24A	18" MO GLOBE LOOP A TEST THROTTLE	41B	361027	A	1 0		0 1			35+		N
2	R 474 8.1/K	A391			DWG 2648-3							
RHR-V-24A+	18" MO GLOBE LOOP A TEST THROTTLE				1 0							
1	R 474 K.0/8.1											
RHR-V-24B	18" MO GLOBE LOOP B TEST THROTTLE	41B	361027	A	1 0		0 1			35+		N
2	R 474 M.2/8.1	A391			DWG 2648-3							
RHR-V-24B+	18" MO GLOBE LOOP B TEST THROTTLE				1 0							
1	R 474 M.2/8.1											
RHR-V-26A	4" MO GATE HEX A OUT TO RCIC	41A	361723	A	1 1		0 1			58		N
2	R 475 8.2/K.5	V085			DWG P2-3311-N-7							
RHR-V-26A+	4" MO GATE HEX A OUT TO RCIC				1 1							
1	R 475 K.5/8.2											
RHR-V-26B	4" MO GATE HX-B OUTLET TO RCIC	41A	361723	A	1 1		0 1			58		N
2	R 473 8.1/L.2	V085			DWG P2-3311-N-7							
RHR-V-26B+					1 1							
1	R 473 L.2/8.1											
RHR-V-27A	6" MO GATE LOOP A TO SUPP POL SPRY	41A	361724	R	1 0							
2	R 495 K.3/4.1	V085			DWG P2-3311-N-10							
RHR-V-27A+	6" MO GATE LOOP A TO SUPP POL SPRY				1 0							
1	R 495 K.3/4.1											
RHR-V-27B	6" MO GATE LOOP B TO POOL SPRAY	41A	361724	R	1 0							

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2	R 495 M.1/7.7	V085			DWG P2-3311-N-10.							
RHR-V-27B+	6" MO GATE LOCP B TO POOL SPRAY				1 0							
1	R 495 M.1/7.7											
RHR-V-3A	18" MO GATE HX A OUTLET ISOL	41A	361730	B	1 3		0.1			33		N
2	R 544 J.9/8.5	V085			DWG P2-3313-N-40							
RHR-V-3A+	18" MO GATE HX A OUTLET ISOL				1 3							
1	R 544 J.9/8.5											
RHR-V-3B	18" MO GATE HX B OUTLET ISOL	41A	361730	B	1 3		0.1			33		N
2	R 557 M.1/8.4	V085			DWG P2-3313-N-40							
RHR-V-3B+	18" MO GATE HX B OUTLET ISOL				1 3							
1	R 557 M.1/8.4											
RHR-V-4A	24" MO GATE SUPP POOL LOOP A SUPPY	41A	361733	B	2 0		0.1			37		N
2	R 447 L.0/8.3	V085			DWG P2-3313-N-40							
RHR-V-4A+	24" MO GATE SUPP POOL LOCP A SUPPY				1 0							
1	R 447 L.0/8.3											
RHR-V-4B	24" MO GATE SUPP POOL LOOP B OTLET	41A	361733	M	1 0		0.1			37		N
2	R 522 L.2/8.3	V085			DWG P2-3313-N-40							
RHR-V-4B+	24" MO GATE SUPP POOL LOCP B OTLET				1 0							
1	R 522 L.2/8.3											
RHR-V-4C	24" MO GATE SUPP POOL LOOP C SUPPY	41A	361713	B	1 0		0.1			37		N
2	R 449 J.0/4.2	V085			DWG P2-3313-N-40							
RHR-V-4C+	24" MO GATE SUPP POOL LOCP C SUPPY				1 0							
1	R 449 J.0/4.2											
RHR-V-40	4" MO GLOBE RHR LOOL B RETURN TO	41B	361020	A	2 0	2 1	0 0			21		N
2	R 552 M.7/8.3	A391			DWG 2645-3							
RHR-V-40+	4" MO GLOBE RHR LOCP B RETURN TO				2 0							
1	R 552 M.7/8.3											
RHR-V-42A	14" MO GATE OUTBOARD RETURN TO RPV	41A	361746	Y	1 0		0.1			42		N
2	R 527 J.0/6.0	V085			DWG P2-3311-N-36							
RHR-V-42A+	14" MO GATE OUTBOARD RETURN TO RPV				1 0							
1	R 572 J.0/6.0											
RHR-V-42B	14" MO GATE RET TO RPV, OUTBOARD	41A	361746	Y	1 0		0.1			42		N
2	R 525 N.0/5.6	V085			DWG P2-3311-N-36							
RHR-V-42B+	14" MO GATE RET TO RPV, OUTBOARD				1 0							
1	R 525 N.0/5.6											
RHR-V-42C	14"GATE RHR RETURN TO RPV, OUTBC	41A	361746	Y	1 0		0 1			42		N
2	R 527 J.0/5.8	V085			DWG P2-3311-N-36							
RHR-V-42C+	14"GATE RHR RETURN TO RPV,OUTBO				1 1							
1	R 527 J.0/5.8											
RHR-V-46C	6" CHECK LOOP CX:MIN FLOW	41B	361038	R	2 0							
2	R 451 J.2/4.8	A391			DWG 2614-3							
RHR-V-47A	18"MO GATE RHR HX INLET ISOL	41A	361730	B	1 3		0 1			33		N
2	R 575 J.7/8.7	V085			DWG P2-3313-N-40							
RHR-V-47A+	18" MO GATE RHR HX INLET ISOL				1 3							
1	R 575 J.7/8.7											
RHR-V-47B	18"GATE MO RHR HX INLET ISOL	41A	361730	M	1 3							
2	R 576 M.3/8.4	V085			DWG P2-3313-N-40							
RHR-V-47B+	18"GATE MO RHR HX INLET ISOL				1 3							
1	R 576 M.3/8.4											

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RHR-V-48A	18" MO GLOBE RHR HEX A BYPASS BLOC	41B	361027	A	1 3		0.1			35+		N
2	R 552 J.0/8.7	A391			DWG 2648-3							
RHR-V-46A+	18" MO GLOBE RHR HEX A BYPASS BLOC				1 3							
1	R 552 J.0/8.7											
RHR-V-48B	18" MO GLOBE HEX B BYPASS BLOCK	41B	361027	A	1 3		0 1			35+		N
2	R 553 M.9/8.9	A391			DWG 2648-3							
RHR-V-48B+	18" MO GLOBE HEX B BYPASS BLOCK				1 3							
1	R 553 M.9/8.9											
RHR-V-49	4"MO GATE LOOP B TO FLOOR DRAIN TK	41A	361783	A	2 0		0.1			58		N
2	R 552 M.7/8.4	V085			DWG P2-3311-N-7							
RHR-V-49+	4"MO GATE LOOP B TO FLOOR DRAIN TK			B	2 0							
1	R 552 M.7/8.4											
RHR-V-50A+	12" AO CHECK TEST CHECK LOOP A				2 3							
1	R 508 85 D AZ R28											
RHR-V-50B+	12" AO CHECK TEST CHECK LOOP B				2 3							
1	C 508 270 D AZ R27											
RHR-V-52A	8" GLOBE RCIC STEAM TO RHR HX	42A	361931	M	1 1		0.1					N
2	R 574 H68/8.7	F130			T SMB-00-10-EWP							
RHR-V-52A+	8" GLOBE RCIC STEAM TO RHR HX				1 1							
1	R 574 H68/8.7											
RHR-V-52B	8" GLOBE RCIC STEAM TO RHR HX	42A	361931	M	1 1		0.1					N
2	R 575 N.0/9.2	F130			T SMB-001-10EWP							
RHR-V-52B+	8" GLOBE RCIC STEAM TO RHR HX				1 1							
1	R 575 N.0/9.2											
RHR-V-53A	12" MO GATE SHUTDOWN COOL LOOP A	41B	361024	B	1 3	2 1	0.1			26		N
2	R 516 K.3/4.1	A391			DWG 2658-3							
RHR-V-53A+	12" MO GATE SHUTDOWN COOL LOOP A				1 3							
1	R 516 K.3/4.1											
RHR-V-53B	12" MO GLOBE SHUTD COOL LOOP B	41B	361024	B	1 3		0.1			99+		N
2	R 512 L/7.9 AZ 256D	A391			DWG 2658-3							
RHR-V-53B+	12" MO GLOBE SHUTD COOL LOOP B				1 3							
1	R 512 L.0/7.9											
RHR-V-6A	18"MO GATE RHR PUMP A INLET BLOCK	41A	361730	B	1 3		0.1			33		N
2	R 435 K.3/8.2	V085			DWG P2-3313-N-40							
RHR-V-6A+	18"MO GATE RHR PUMP A INLET BLOCK				1 3							
1												
RHR-V-6B	18"MO GATE RHR PUMP B INLET	41A	361730	B	1 3		0 1			33		N
2	R 434 L.0/8.3	V085			DWG P2-3313-N-40							
RHR-V-6B+	18"MO GATE RHR PUMP B INLET				1 3							
1	R 434 L.0/8.3											
RHR-V-68A	16"GATE MO RHR HX SW ISOL	41A	361729	A	2 0		0 1			43		N
2	R 553 M.9/9.3	V085			DWG P2-3313-N-39							
RHR-V-68A+	16"GATE MO RHR HX SW ISOL				2 0							
1	R 553 M.9/9.3											
RHR-V-68B	16"MO GATE RHR HX SW ISOL	41A	361729	A	2 0		0.1			43		N
2	R 551 M.7/9.3	V085			DWG P2-3313-N-39							
RHR-V-68B+	16"MO GATE RHR HX SW ISOL				2 0							
1	R 551 M.7/9.3											
RHR-V-73A	RHR H EX A VENT SHELL SI	215	361205	B	1 3							

EQUIPMENT NO. / LW	DESCRIPTION / PLANT LOCATION	CONTRACT / PFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 572 J8/9	B350			DWG 82120							
RHR-V-73A+	RHR H EX A VENT SHELL SI				1 3							
1	R 572 J.8/9.0											
RHR-V-73B	RHR H EX B VENT SHELL SI	215	361205	B	1 3							
2	R 572	B350			DWG 82120							
RHR-V-73B+	RHR H EX B VENT SHELL SI				1 3							
1	R 572											
RHR-V-74A	RHR H EX A VENT SHELL SI	215	361205	C	1 3						P	
2	R 572	B350			DWG 82120							
RHR-V-74A+	RHR H EX A VENT SHELL SI				1 3							
1	R 572											
RHR-V-74B	RHR H EX B VENT SHELL SI	215	361205	C	1 3						P.	
2	R 572	B350			DWG 82120							
RHR-V-74B+	RHR H EX B VENT SHELL SI				1 3							
1	R 572											
RHR-V-8	20" GATE SHUTDOWN COOLING SUPPLY	41A	361749	M	1 3		0.1					N
2	R 504 M9/7.3	V085			DWG P2-3313-N-33							
RHR-V-8+	20" GATE SHUTDOWN COOLING SUPPLY				1 3							
1	R 504 M.9/7.3											
RHR-V-87A	8" MO GATE RCIC STEAM CONDENSING	42A	361931	M	1 1		0.1					N
2	R 574 H.8/8.7	F130			T SMB-0010-EWP							
RHR-V-87A+	8" MO GATE RCIC STEAM CONDENSING				1 1							
1	R 574 H.8/8.7											
RHR-V-87B	8" MO GLOBE RCIC STEAM CONDENSING	42A	361931	M	1 1		0.1					N
2	R 575 M.8/9.0	F130			T SMB-001-10EWP							
RHR-V-87B+	8" MO GLOBE RCIC STEAM CONDENSING				1 1							
1	R 575 M.8/9.0											
RHR-V-89	14" TESTABLE CHECK ON SW X-TIE	69	361760	R	2 0							
2	R 553 N2/8.9	V085			DWG P2-2767-N-2							
RHR-V-89+	14" TESTABLE CHECK ON SW X-TIE				2 0							
1	R 553 N.2/8.9											
RHR-V-9	20" GATE SHUTDOWN COOLING SUPPLY	41A	361749	M	1 3		0.1				P	Y
2	C 509 120.D AZ R27	V085			DWG P2-3313-N-33							
RHR-V-9+	20" GATE SHUTDOWN COOLING SUPPLY				1 3							
1	C 509 120 D AZ R27											
ROA-AD-10	MCC ROOM I AUTO DAMPER	216	011001	R	1 0							
2	R 542 M.5/3.9	P014			P.O. 630-N-31408							
ROA-AD-10+					1 0							
1												
ROA-AD-11	MCC ROOM II AUTO DAMPER	216	011001	R	1 0							
2	R 542 H.7/8.1	P014			P.O. 630-N-31408							
ROA-AD-11+					1 0							
1												
ROA-AD-12	DC MCC ROOM AUTO DAMPER	216	011004	R	1 0							
2	R 480 J.0/8.3	M139			332-2799							
ROA-AD-12+		216			1 0							
1		M139			332-2799							
ROA-AD-13	RECOMB MCC RMI AUTO DAMPER	216	011001	R	1 0							
2	R 591 M.5/6.0	P014			P.O. 630-N-31408							

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

SAFETY-RELATED EQUIPMENT LIST FOR NRC-SORT DATE 02/10/82

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
ROA-AD-13+					1 0							
1												
ROA-AD-14	RECOMB MCC RM II AUTO DAMPER	216	011001	R	1 0							
2	R 591 M.9/7.4	P014			P.O. 630-N-31408							
ROA-AD-14+					1 0							
1												
ROA-AD-15	ANA RM 1A AUTO DAMPER	216	011001	R	1 0							
2	R 563 M.8/4.8	P014			P.O. 630-N-31408							
ROA-AD-15+					1 0							
1												
ROA-AD-17	ANA RM 1B AUTO DAMPER	216	011001	R	1 0							
2	R 563 M.8/4.2	P014			P.O. 630-N-31408							
ROA-AD-17+					1 0							
1												
ROA-AD-19		216		R	1 0							
2	R 548 L.0/4.0	P014			630-N-31408							
ROA-AD-19+					1 0							
1												
ROA-AO-AD10	AIR OPERATOR FOR ROA-AD-10			R	1 0							
2	R 542 M.5/3.9											
ROA-AO-AD11	MCC ROOM II AUTO DAMPER			R	1 0							
2	R 542 H.7/8.1											
ROA-AO-AD12	DC MCC ROOM AUTO DAMPER			R	1 0							
2	R 480 J.0/8.3											
ROA-AO-AD13	RECOMB MCC RM1 AUTO DAMPER			R	1 0							
2	R 591 M.5/6.0											
ROA-AO-AD14	RECOMB MCC RM II AUTO DAMPER			R	1 0							
2	R 591 M.9/7.4											
ROA-AO-AD15	ANA RM 1A AUTO DAMPER	216		R	1 0							
2	R 563 M.8/4.8											
ROA-AO-AD17	ANA RM 1B AUTO DAMPER			R	1 0							
2	R 563 M.8/4.2											
ROA-AO-V1	R BLDG ISO VALVE			R	1 0							
2	R 572 D.0/4.0	M322			A83B							
ROA-AO-V2	R BLDG ISO VALVE			R	1 0							
2	R 572 D.0/4.0	M322			A83B							
ROA-FN-1A	SUPPLY FAN	64	145023		3 3							
2	R 572 A2/4.8	B515			54-D-9							
ROA-FN-1B	SUPPLY FAN	64	145023		3 3							
2	R 572 N2/4.8	B515			54-D-9							
ROA-V-1	84.0" R BLDG ISO VALVE	68	361101	B	1 0		0 2			14	P	N
2	R 578 N.7/5.7	B250			0657							
ROA-V-1+					1 0							
1	R 578 N.7/5.7											
ROA-V-2	84.0" R BLDG ISO VALVE	68	361101	B	1 0		0 2			14	P	N
2	R 578 N.7/5.0	B250			0657							
ROA-V-2+					1 0							
1	R 578 N.7/5.0											
RRA-CC-1	COOLING COIL FOR RRA-FC-1	67	037001	N	1 3						F	N

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 441 H.7/4.5	C780			P L-75-140-GR.6							
RRA-CC-10	COOLING COIL FOR RRA-FC-10	67	037003	N	1 0							N
2	R 522 N.3/3.9	C780			76J-1195							
RRA-CC-11	COOLING COIL FOR RRA-FC-11	67	037003	N	1 0							N
2	R 522 N.5/8.0	C780			76J-1196							
RRA-CC-12	COOLING COIL FOR RRA-FC-12	216	037003	R	1 0							
2	R 471 H.4/8.2	A089			76J-1197							
RRA-CC-13	COOLING COIL FOR RRA-FC-13	216	037003	R	1 0							
2	R 572 M.3/6.1	A089			76J-1198							
RRA-CC-14	COOLING COIL FOR RRA-FC-14	216	037003	R	1 0							
2	R 572 M.7/8.2	A089			76J-1199							
RRA-CC-15	COOLING COIL FOR RRA-FC-15	216	037003	R	1 0							
2	R 548 M.4/4.5	A089			76J-1200							
RRA-CC-17	COOLING COIL FOR RRA-FC-17	216	037003	R	1 0							
2	R 548 M.4/4.8	A089			76J-1201							
RRA-CC-19		28		R	1 3							
2	R											
RRA-CC-2	COOLING COIL FOR RRA-FC-2	67	037001	N	1 3						F	N
2	R 441 K.2/8.3	C780			P L-75-148-GR6							
RRA-CC-20		28			1 3							
2	R											
RRA-CC-3	COOLING COIL FOR RRA-FC-3	67	037001	N	1 0						F	N
2	R 441 L.8/8.3	C780			P L75-140 GR 6							
RRA-CC-4	COOLING COIL FOR RRA-FC-4	67	037001	A	1 0		0 1				F	N
2	R 441 M.4/4.1	C780			P 74B-427GR4							
RRA-CC-5	COOLING COIL FOR RRA-FC-5	67	037001	N	1 0						F	N
2	R 441 K.7/3.7	C780			P 74-13-1427,GR5							
RRA-CC-6	COOLINE COIL FOR RRA-FC-6	67	037001	N	1 0						F	N
2	R 444 H.6/8.0	C780			P L-75-140,GR.2							
RRA-FC-1	RHR PUMP RM FC UNIT	67	130001	N	1 3						F	N
2	R 444 H.7/4.5	P295			P.O. 2808-67							
RRA-FC-1+	RHR PUMP RM4 FAN COOLER ASSY				1 3							
1	R 443 H.7/4.3											
RRA-FC-10	MCC RM FC UNIT	67	130005	N	1 0							N
2	R 542 N.2/4.0	P295			CIM9.4							
RRA-FC-10+	DIVII MCC FN COOLER ASSY				1 0							
1	R 522 N3/3.8											
RRA-FC-11	MCC RM FC UNIT	67	130005	N	1 0							N
2	R 542 H.5/8.0	P295			CIM9.4							
RRA-FC-11+	DIV I MCC FN COOLER ASSY				1 0							
1	R 522 H5/8											
RRA-FC-12	DC MCC ROOM FAN COIL UNI	216	130006	R	1 0							
2	R 471 H.4/8.1	B515			13441H-1400-A-51							
RRA-FC-12+	DC DIV I MCC FN COOLER ASSY				1 0							
1	R 471 H5/8											
RRA-FC-13	MCC ROOM FAN COIL UNIT OOLING SYS	216	130006	R	1 0							
2	R 592 M.3/6.0	B515			13441H-1400-A51							
RRA-FC-13+	H2 RECOMBINER MCC COOLER ASSY				1 0							
1	R 592 M.3/6.0											

WASHINGTON PUBLIC POWER SUPPLY SYSTEM
SAFETY RELATED EQUIPMENT LIST FOR NRC-SQRT

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
RRA-FC-14	MCC ROOM FAN COIL UNIT OOLING SYS	216		R	1 0							
2	R 585 M.7/8.0	B515			S.O. 765-1199							
RRA-FC-14+	H2 RECOMBINER MCC COOLER ASSY				1 0							
1	R 572 M7/8											
RRA-FC-15	SAMPLE AND ANALYZER RM FAN COIL UN	216	130002	R	1 0						F	
2	R 560 M.2/4.8	B515			22A5-ADJUSTAX:							
RRA-FC-15+	SAMPLINE N ANALY RM1A COOLER ASSY				1 0							
1	R 548 M5/4.5											
RRA-FC-17	ANALYZER RM FAN COIL UNIT	216	130003	R	1 0						F	
2	R 560 M.2/4.2	B515			S.O. 76J-1201							
RRA-FC-17+	SAMPLINE N ANALY RM1A COOLER ASSY				1 0							
1	R 548 M5/4.7											
RRA-FC-19		28		R	1 3							
2												
RRA-FC-19+	FPC HEAT EXCH N PMP COOLER ASSY				1 3							
1												
RRA-FC-2	RHR PUMP ROOM FAN COIL U	67	130001	N	1 3						F	N
2	R 444 K.2/8.3	P295			P.O. 2808-67							
RRA-FC-2+	RHR PMP RM2 FN COOLER ASSY				1 3							
1	R 441 K.2/8.2											
RRA-FC-20		20		R	1 3							
2												
RRA-FC-20+	FPC HEAT CH:N PUMP RM COOLER ASSY				1 3							
1												
RRA-FC-3	RHR PUMP ROOM FAN COIL U	67	130001	B	1 0						F	N
2	R 444 L.8/8.3	P295			P.O. 2808-67							
RRA-FC-3+	RHR PMP RM1 FAN COOLER ASSY				1 0							
1	R 441 L.8/8.0											
RRA-FC-4	HPCS PUMP ROOM FAN COIL	67	130001	A	1 0		0 1				F	N
2	R 444 M.5/4.1	P295			P.O. 2808-67							
RRA-FC-4+	HPCS PMP RM FAN COOLER ASSY				1 0							
1	R 444 M.5/4.1											
RRA-FC-5	LPCS PUMP ROOM FAN COIL	67	130001	B	1 0						F	N
2	R 444 K.7/3.9	P295			P.C. 2808-67							
RRA-FC-5+	LPCS PMP RM FAN COOLER ASSY				1 0							
1	R 441 K.7/3.8											
RRA-FC-6	RCIC PUMP ROOM FAN COIL	67	130001	N	1 2						F	N
2	R 444 H.6/8.0	P114			P.O. 2808-67							
RRA-FC-6+	RCIC PMP RM FAN COOLER ASSY				1 2							
1	R 441 H.6/7.7											
RRA-FN-1	FAN FCR RRA-FC-1	67	145011	N	1 3						F	N
2	R 443 H.7/4.3	P114			150							
RRA-FN-10	FAN FOR RRA-FC-10	67	145012	N	1 0							N
2	R 522 N3/3.8	P295			150							
RRA-FN-11	FAN FCR RRA-FC-11	67	145012	N	1 0							N
2	P 522 H5/8	P295			150							
RRA-FN-12	OC MCC ROOM RECIRC FAN	216	145013	R	1 0							
2	R 471 H5/8	B515			60PC/ADJUSTAX							
RRA-FN-13	FAN FCR RRA-FC-13	216	145013	R	1 0							

WASHINGTON PUBLIC POWER SUPPLY SYSTEM
SAFETY RELATED EQUIPMENT LIST FOR NRC-SORT

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 572 M3/6	B515			40PC/ADJUSTAX!							
RRA-FN-14	FAN FOR RRA-FC-14	216	145013	R	1 0							
2	R 572 M7/8	B515			40PC/ADJUSTAX!							
RRA-FN-15	FAN FOR RRA-FC-15	216	145013	R	1 0							
2	R 548 M5/4.5	B515			40PC/ADJUSTAX!							
RRA-FN-17	13300 CFM AXAL RM 1B RECIRC FAN	216	145013	R	1 0							
2	R 548 M5/4.7	B515			40PC/ADJUSTAX!							
RRA-FN-19	FPC HEAT EXCH & PMP RM FLO	28		R	1 3							
2												
RRA-FN-2	FAN FOR RRA-FC-2	67	145011	N	1 3						F	N
2	R 441 K.2/8.2	P114			150							
RRA-FN-20	FPC HEAT EXCH & PMP RM FLO	215		R	1 3							
2	R											
RRA-FN-3	FAN FOR RRA-FC-3	67	145011	N	1 0						F	N
2	R 441 L.8/8.0	P114			150							
RRA-FN-4	FAN FOR RRA-FC-4	67	145012	A	1 0		0 1				F	N
2	R 444 H.5/4.1	P295			245							
RRA-FN-5	FAN FOR RRA-FC-5	67	145011	N	1 0						F	N
2	R 441 K.7/3.8	P114			150							
RRA-FN-6	FAN FOR RRA-FC-6	67	145011	N	1 2						F	N
2	R 441 H.6/7.7	P114			135							
RRC-P-1A	RECIRCULATION PUMP	02B35	233020	B	2 0		0.1				P	N
2	C 508 135 D AZ R22	B260			210079							
RRC-P-1A+	RECIRCULATION PUMP				2 0							
1	C 508 315 D AZ R22											
RRC-P-1B	RECIRCULATION PUMP	02B35	233020	B	2 0		0.1				P	N
2	C 508 315 D AZ R22	B260			210100							
RRC-P-1B+	RECIRCULATION PUMP				2 0							
1	C 508 315 D AZ R22											
RRC-V-16A+	RRC PUMP SEAL PURGE INLE				2 0							
1	C											
RRC-V-16B+	RRC PUMP SEAL PURGE INLE				2 0							
1	C											
RRC-V-23A	24" MO GATE	02B35	361907	B	2 0		0.1			37	P	Y
2	C 503 160 C AZ R16	A585			DWG 921D875V							
RRC-V-23A+	24" MO GATE				2 0							
1	C 503 160 D AZ R16											
RRC-V-23B	24" MO GATE	02B35	361907	B	2 0		0.1			37	P	Y
2	C 502 340 D AZ R17	A585			DWG 921D875V							
RRC-V-23B+	24" MO GATE				2 0							
1	C 502 340 C AZ R17											
RRC-V-60A	IURRC RETURN TO RPV	02B35	361401	C	2 0		0 1			99+	P	N
2	C 506 115 D AZ R24	I207			V999E201							
RRC-V-60A+	RRC RETURN TO RPV				2 0							
1	C 506 115 D AZ R24											
RRC-V-60B	RRC RETURN TO RPV	02B35	361401	C	2 0		0.1			99+	P	N
2	C 506 293 D AZ R24	I207			V999E201							
RRC-V-60B+	RRC RETURN TO RPV				2 0							
1	C 506 293 D AZ R24											

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
RRC-V-67A	24" MO GATE	02B35	361906	B	2 0	1 4	0.1			37		Y
2	C 502 102 D AZ R20	A585			21358-F							
RRC-V-67A+	24" MO GATE				2 0							
1	C 507 102 D AZ R20											
RRC-V-67B	24"MO GATE RRC PUMP DISCHARGE	02B35	361906	B	2 0	1 4	0.1			37		Y
2	C 507 275 D AZ R20	A585			21358-F							
RRC-V-67B+	24" MO GATE				2 0							
1	C 507 275 D AZ R20											
RRC-V-85A	RRC PUMP A SEAL STAGING	02B35		M	2 0		0.0					Y
2	C 501 L7/5.2											
RRC-V-85A+	RRC PUMP A SEAL STAGING				2 0							
1	C 501 L7/5.2											
RRC-V-85B	RRC PUMP B SEAL STAGING	02B35		M	2 0							
2	C 501 K3/6.9											
RRC-V-85B+	RRC PUMP B SEAL STAGING				2 0							
1	C 501 K3/6.9											
RWCU-V-1	6"MO GATE INBOARD ISOL	41A	361742	T	1 3		0 1			70		Y
2	C 540 L/6 150 AZ	V085			DWG P2-3311-N-4							
RWCU-V-1+	RWCU-V-1 INBOARD ISOL VALVE COMPA				1 3							
1	C 540 L/6 150 AZ											
RWCU-V-100	4"MO GATE FROM RECIRC PUMP	41A	361741	T	2 3		0.1				P	Y
2	C 500.69 D AZ R18	V085			DWG P2-3311-N-2							
RWCU-V-100+					2 0							
1	C 500 690 AZ R18											
RWCU-V-101	4"MO GATE RWCU FROM RPV DRAIN	41A	361741	T	2 3		0.1				P	Y
2	C 514 22 D AZ R18	V085			DWG P2-3311-N-2							
RWCU-V-101+					2 3							
1	C 514 22 D AZ R18											
RWCU-V-102	6" MO GLOBE FROM RECIRC PUMP	41B	361004	E	2 3		0 1			76	P	Y
2	C 502 59 D AZ R20	A391			DWG 2655-3							
RWCU-V-102+					2 3							
1	C 502 59 D AZ R20											
RWCU-V-106	4" MO GATE RWCU WATER FROM RECIRC	41A	361741	T	2 3		0 1				P	Y
2	C 501 30 D AZ R17	V085			DWG P2-3311-N-2							
RWCU-V-106+					2 0							
1	C 501 30 D AZ R17											
RWCU-V-4	6"GATE MC CONT ISOL VALVE	41A	361742	B	1 0	2 1	0 1			70		N
2	R 538 H.7/5.0	V085			DWG P2-3311-N-4							
RWCU-V-4+					1 0							
1	R 538 H7/5											
RWCU-V-40	6" GATE MO RWCU RETURN TO RFW LINE	41A	361742	C	1 0	2 1	0 1			70		N
2	R 515 K.0/4.3	V085			DWG P2-3311-N-4							
RWCU-V-40+					1 0							
1	R 516 J1/5											
SGT-AD-1A1	AIR DAMPER FOR SGT-FN-1A1	28		R	1 0							
2	R 576 H.6/7.7											
SGT-AD-1A2	AIR DAMPER FOR SGT-FN-1A2	28		R	1 0							
2	R 576 H.6/7.7											
SGT-AD-1B1	AIR DAMPER FOR SGT-FN-1B1	28		R	1 0							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 576 J.1/7.7											
SGT-AD-1B2	AIR DAMPER FOR SGT-FN-1B2	28		R	1 0							
2	R 576 J.5/7.7											
SGT-AO-2A	MOTOR OPERATOR SGT-V-2A	68	018011	R	1 0							
2	R 580 H.6/5.3	M322			A-508							
SGT-AO-2B	MOTOR OPERATOR SGT-V-2B	68	018011	R	1 0							
2	R 580 H.6/5.3	M322			A508							
SGT-DV-1A1+	DELUGE VALVE ASSY FOR SGT-FL-1A	18			2 0							
1	R 579 H.6/5.7											
SGT-DV-1A2+	DELUGE VALVE ASSY FOR SGT-CF-1A-1	18			2 0							
1	R 579 H.6/6.0											
SGT-DV-1A3+	DELUGE VALVE ASSY FOR SGT-CF-1A-2	18			2 0							
1	R 575 H.6/6.0											
SGT-DV-1B1+	DELUGE VALVE ASSY FOR SGT-FL-1B	18			2 0							
1	R 575 J.4/5.7											
SGT-DV-1B2+	DELUGE VALVE ASSY FOR SGT-CF-1B-1	18			2 0							
1	R 575 J.8/6.0											
SGT-DV-1B3+	DELUGE VALVE ASSY FOR SGT-CF-1B-2	18			2 0							
1	R 578 J.8/6.0											
SGT-FN-1A1	EXHAUST FAN SGT-FU-1A	28	145014	A	1 0		0 1			42	F	N
2	R 576 H.6/7.7	B515			S.C. 74S-9797							
SGT-FN-1A1+	EXHAUST FAN FOR SGT-FU-1A-1				1 0						F	
1	R 576 H.6/7.7											
SGT-FN-1A2	EXHAUST FAN SGT-FU-1A	28	145014	A	1 0		0 1			42	F	N
2	R 576 H.8/7.7	B515			S.C. 74S-9797							
SGT-FN-1A2+	EXHAUST FAN FOR SGT-FU-1A-2	28			1 0						F	
1	R 576 H.8/7.7											
SGT-FN-1B1	EXHAUST FAN SGT-FU-1B	28	145014	A	1 0		0 1			42	F	N
2	R 576 J.1/7.7	B515			S.O. 74S-9798							
SGT-FN-1B1+	EXHAUST FAN FOR SGT-FU-1B-1				1 0						F	
1	R 576 J.1/7.7											
SGT-FN-1B2	EXHAUST FAN SGT-FU-1B	28	145014	A	1 0		0 1			42	F	N
2	R 576 J.5/7.7	B515			S.O. 74S-9798							
SGT-FN-1B2+	EXHAUST FAN FOR SGT-FU-1B-2				1 0						F	
1	R 576 J.5/7.7											
SGT-FU-1A+	STANDBY GAS FILTER UNIT I	18			1 0						F	
1	R 572 H.5/6.2	F030			W.0 59504							
SGT-FU-1B+	STANDBY GAS FILTER UNIT II	18			1 0						F	
1	R 572 J.5/6.4	F030			W.0 59504							
SGT-PCV-F1	2" CONT DELUGE VLV SGT-DV-1A1	18	236005	R	2 0							
2	R 580 H.3/3.8	F030			L-50874							
SGT-PCV-F2	2" CONT DELUGE VLV SGT-DV-1A2	18	236005	R	2 0							
2	R 580 H.3/2.9	F030			L-50871-1							
SGT-PCV-F3	2" CONT DELUGE VLV SGT-DV-1A3	18	236005	R	2 0							
2	R 576 H.3/3.9	F030			L-50871-1							
SGT-PCV-F4	2" CONT DELUGE VLV SGT-DV-1B1	18	236005	R	2 0							
2	R 576 H.3/3.8	F030			L-50871-1							
SGT-PCV-F5	2" CONT DELUGE VLV SGT-DV-1B2	18	236005	R	2 0							
2	R 580 H.3/3.7	F030			L-50871-1							

EQUIPMENT NO.	DESCRIPTION	CONTRACT	QID	QS.	USE	TEST	ANL	F/O	C	FREQ	TM	HL
LV	PLANT LOCATION	MFG			MFG MODEL NO.							
SGT-PC\-F6	2" CONT DELUGE \LV SGT-DV-1B3	18	236005	R	2 0							
2	R 580 H.3/3.8	F030			L-50871							
SGT-V-1A	18" MO BFLY SGT TIE	68	361103	M	1 0		0 1					N
2	R 583 H8/5.3	B250			A-206761							
SGT-V-1A+	18" MC BFLY SGT TIE				1 0							
1	R 583 H8/5.3											
SGT-V-1B	18" MO BFLY SGT TIE	68	361103	M	1 0		0.1					N
2	R 583 J3/5.3	B250			A-206761							
SGT-V-1B+	18" MC BFLY SGT TIE				1 0							
1	R 583 J3/5.3											
SGT-V-2A	18" AO BFLY SGT LINE TO SGT-FU-1A	68	361110	M	1 0		0 1				P	N
2	R 580 H7/5.3	B250			0657							
SGT-V-2A+	18" AC BFLYSGT LINE TO SGT-FU-1A				1 0							
1	R 580 H7/5.3											
SGT-V-2B	18" AO BFLY SGT LINE TO SGT-FU-1B	68	361110	M	1 0		0.1				P	N
2	R 580 J3/5.3	B250			0657							
SGT-V-2B+	18" AC BFLY SGTLINE TO SGT-FU-1B				1 0							
1	R 580 J3/5.3											
SGT-V-3A1	18" MO BFLY SGT-FN-1A2	68	361103	M	1 0		0.1					N
2	R 576 H8/7.7	B250			A-206761							
SGT-V-3A1+	18" MC BFLY SGT-FN-1A2				1 0							
1	R 576 H8/7.7											
SGT-V-3A2	18" MO BFLY SGT-FN-1A1	68	361103	M	1 0		0 1					N
2	R 576 J.0/7.7	B250			A-206761							
SGT-V-3A2+	18" MC BFLY SGT-FN-1A1				1 0							
1	R 576 J.0/7.7											
SGT-V-3B1	18" MC BFLY SGT-FN-1B2 INLET	68	361103	M	1 0		0 1					N
2	R 576 J3/6.8	B250			A-206761							
SGT-V-3B1+	18" MC BFLY SGT-FN-1B2 INLET				1 0							
1	R 576 J3/6.8											
SGT-V-3B2	18" MO BFLY SGT-FN-1B1 INLET	68	361103	M	1 0		0.1				P	N
2	R 576 J3/7.4	B350			A-206761							
SGT-V-3B2+	18" MO BFLY SGT-FN-1B1 INLET				1 0							
1	R 576 J3/7.4											
SGT-V-4A1	18" MC BFLY SGT-FN-1A1 OUTLET	68	361103	M	1 0		0.1					N
2	R 587 H8/7.1	B250			A-206761							
SGT-V-4A1+	18" MO BFLY SGT-FN-1A1 INLET				1 0							
1	R 587 H8/7.1											
SGT-V-4A2	18" MO BFLY SGT-FN-1A2 DISCH	68	361103	M	1 0		0.1			99+		N
2	R 587 J.0/7.0	B250			A-206761							
SGT-V-4A2+	18" MO BFLY SGT-FN-1A2 DISCH.				1 0							
1	R 587 J.0/7.0											
SGT-V-4B1	18" MO BFLY SGT-FN-1B1 DISCH.	68	361103	M	1 0		0 1			99+		N
2	R 585 J2/5.1	B250			A-206761							
SGT-V-4B1+	18" MO BFLY SGT-FN-1B1 DISCH.				1 0							
1	R 585 J2/5.1											
SGT-V-4B2	18" BFLY SGT-FN-1B2 DISCH	68	361103	M	1 0		0 1			99+		N
2	R 585 J6/7.1	B250			A-206761							
SGT-V-4B2+	18" MO BFLY SGT-FN-1B2 DISCH.				1 0							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT	MFG	QID	QS	USE TEST	MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
1	R 585 J6/7.1												
SGT-V-5A1	18 BFLY SGT-FN-1A-1 OUTLET	68		361103	M	1 0		0 1			99+	P	N
2	R 587 H.6/7.0		B250				DWG A206761						
SGT-V-5A1+	18" MC BFLY SGT-FN-1A-1 INLET					1 0							
1	R 587 H.6/7.0												
SGT-V-5A2	18" MO BFLY SGT-FN-1A2 DISCH	68		361103	M	1 0		0 1			99+	P	N
2	R 587 J/7.1		B250				A206761						
SGT-V-5A2+	18" MC BFLY SGT-FN-1A2 DISCH					1 0							
1	R 587 J/7.1												
SGT-V-5B1	18" MC BFLY SGT-FN-1B1 OUTLET	68		361103	M	1 0		0 1			99+	P	N
2	R 587 J2/7		B250				A206761						
SGT-V-5B1+	18" MC BFLY SGT-FN-1B1 OUTLET					1 0							
1	R 585 J2/7												
SGT-V-5B2	18" BFLY SGT-FN-1B2 OUTLET	68		361103	M	1 0		0 1			99+	P	N
2	R 585 J6/7		B250				A206761						
SGT-V-5B2+	18" BFLY SGT-FN-1B2 OUTLET					1 0							
1	R 585 J6/7												
SLC-P-1A	SLC PUMP	02C41		233016	M	1 0		0 1					Y
2	R 548 M.2/3.7		U055				2X3 TD-60						
SLC-P-1A+	COMPOSITE FOR SLC-P-1A	02C41				1 0							
1	R 548 M.2/3.7												
SLC-P-1B	SLC PUMP	02C41		233016	M	1 0		0 1					Y
2	R 549 M.2/3.7		U055				2X3TD-60						
SLC-P-1B+	COMPOSITE FOR SLC-P-1B	02C41				1 0							
1	R 549 M2/3.7												
SLC-TK-1+	COMPOSITE FOR SLC-TK-1					1 0							
1	R 548 M.8/3.7												
SLC-V-1A	4" MO GLOBE SLC TANK OUTLET	41B		361003	A	1 0		0 1			99+		N
2	R 550 M.6 /3.7		A391				DWG 2662-3						
SLC-V-1A+	COMPOSITE FOR SLC-V-1A	41B				1 0							
1	R 550 M6/3.7												
SLC-V-1B	4" MO GLOBE SLC TANK OUTLET	41B		361003	C	1 0		0 1			99+		N
2	R 548 M7/3.7		A391				DWG 2662-3						
SLC-V-1B+	COMPOSITE FOR SLC-V-1B	41B				1 0							
1	R 548 M7/3.7												
SW-AO-38A	AIR OPERATOR	42A			R	4 3						P	
2	B 430 B.5/2.1		F130										
SW-AO-38B	AIR OPERATOR	42A			R	4 3						P	
2	B 430 B.5/2.1		F130										
SW-P-1A	STANDBY SERVICE WATER PUMP	23		233017	M	4 3		0 1			15		N
2	A 441 B3/2.1		B580				28KXH						
SW-P-1A+		23				4 3							
1	A 441 B3/2.1												
SW-P-1B	STAND-BY SERVICE WATER PUMP	23		233017	M	4 3		0 1			15		N
2	B 441 B3/2.5		B580				28 IN KXH+3 STAGE						
SW-P-1B+					R	4 3							
1	B 441 B3/2.5												
SW-PCV-38A	12" GLOBE SYSTEM PRESS CONTROL	42A		236003	T	4 3		0 1			27	P	N
2	B 430 B.5/2.1		F130				53A0711						

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT	MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
SW-PCV-38A+				236003	T	4 3							
1	B 430 B.5/2.1		F130			53A0711							
SW-PCV-38B	12" GLOBE SYSTEM PRESS CONTROL	42A		236003	T	4 3		0.1			27	P	N
2	B 430 B5/2.1		F130			53A0711							
SW-PCV-38B+				236003	T	4 3							
1	B 430 B.5/2.1		F130			53A0711							
SW-PI-3	HPCS PUMP DISCH PRESS	IR-24	02E22		T	4 3	1.1	0.0			21	P	N
2			A501			1279							
SW-RV-1A	RHR HEAT EXCHANGER RELIEF VALVE				R	2 3							
2	R 548 J3/9							H11					
SW-RV-1B	RHR HEAT EXCHANGER RELIEF VALVE				R	2 3							
2	R 548 F3/9												
SW-TCV-11A	2.5" GLOBE COOLING WTR OUT OF WMA	42A		335004	T	4 3		0 1			11+		N
2	W 527 H.5/11.8		F130			NH-92-EO							
SW-TCV-11A+						4 3							
1	W 527 H.5/11.8												
SW-TCV-11B	2.5" GLOBE COOLING WTR OUT OF WMA	42A		335004	T	4 3		0.1			11+		N
2	W 527 L.6/10.4		F130			NH-92-ED							
SW-TCV-11B+						4 3							
1	W 527 L.6/10.4												
SW-V-1B	20" CHECK VLV	41B		361045	R	4 3							
2	B 443 B.3/2.3		A391			DWG 2626-3							
SW-V-12A	18"GATE SSW RETURN TO SPRAY POND	41A		361730	A	4 3		0.1			33		N
2	A 433 C.3/1.2		V085			DWG P2-3313-N-43							
SW-V-12A+						4 3							
1	A 433 C.3/1.2												
SW-V-12B	18"MO GATE RETURN TO SPRAY POND	41A		361730	A	4 3		0.1			33		N
2	B 435 C.2/1.3		V085			DWG P2-3313-N-43							
SW-V-12B+						4 3							
1	B 435 C.2/1.3												
SW-V-165A	18" BFLY POND B RETURN	68		361904	R	4 3						P	
2	B 440 SW PUMPHOUSE		A180			DWG 73912-1							
SW-V-165B	18" BFLY POND A RETURN	68		361904	R	4 3						P	
2	A 440 SW PUMPHOUSE		A180			DWG 73912-1							
SW-V-168A	.75" GLOBE SYPHON VENT A POND	233		361201	B	4 3		0.1			99+		N
2	A 435 IN SPYPND A		B350			P 76590							
SW-V-168B	.75" GLOBE SYPHON VENT B POND	233		361201	B	4 3		0 1			99+		N
2	B 435 IN SPYPND B		B350			P 76590							
SW-V-169A	.75" GLOBE SYPHON VENT - A POND	233		361201	B	4 3		0.1			99+		N
2	A 435 IN SPYPND A		B350			P 76590							
SW-V-169B	.75" GLOBE SYPHON VENT - B POND	233		361201	B	4 3		0 1			99+		N
2	B 435 IN SPYPND B		B350			P 76590							
SW-V-170A	18" BFLY RING HDR - B POND ISOL	68			R	4 3							
2	B 440 R/6.6		A180										
SW-V-170B	18" BFLY RING HDR - A POND ISOL	68			R	4 3							
2	A 440 R/8.4		A180										
SW-V-187A	6" GATE (MO) SW INTO FPX-HX-1A	41A			R	2 3							
2	R 548												
SW-V-187A+	FPC-HX-7A INLET COMPOSITE					2 3							

EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
	1		R													
SW-V-187B	2	6" GATE (MO) SW INTO FPC-HX-1B	R 548	41A				2 3								
SW-V-187B+	1	COIPOSITE TO SW-V-187B	R					2 3								
SW-V-189A+	1	FPC-HX-1A SW OUTLET COMPOSITE	R					2 3								
SW-V-188B+	1	FPC-HX-1B SW OUTLET COMPCSITE	R					2 3								
SW-V-2A	2	20" STANDBY SVC WATER PUMP	A 449 B3/2.6	215	B250	361107	M	4 3	A-216303		0.1			66	P	N
SW-V-2A+	1	SW-P-1B DISCH. COMPOSITE	A 449 B3/2.6					4 3								
SW-V-2B	2	20"MO BFLY SW-P-1B DISCH	B 443 B/1.3	215	B250	361107	M	4 3	A-216303		0.1			66	P	N
SW-V-2E+	1	COIPCSITE TC SW-P-1B	B 443 B/1.3					4 3								
SW-V-202	2	.5" CHECK SAMPLE TO H202 ANALYZER	R 565 N/4.3	220			R	2 0								
SW-V-203	2	.5" CHECK TSW TC H2 O2 ANALY	R 565 N/4.3	220			R	2 0								
SW-V-207	2	.5" CHECK SAMPLE TO H2 O2 ANALYZER	R 565 N15.0	220			R	2 0								
SW-V-208	2	.5" CHECK TSW SAMPLE TO H2 O2 ANAL	R 565 N/5.0	220			R	2 0								
SW-V-211	2	.5" SOLENCID SR-14 DISCHARGE	R 565 N/4.3	220	B350	361203	R	1 0	DWG 38130						P.	
SW-V-24A	2	2" GATE VLV MC RHR PUMP MTR	R 446 L.7/8.3	215	B350	361205	D	1 3	P'79020						P	
SW-V-24A+	1	COMPCSITE OF SW-V-24A	R 446 L.7/8.3					1 3								
SW-V-24B	2	2" GATE VLV MC RHR PUMP MTR	R 447 L.7/8.3	215	B350	361205	D	1 3	P 79020						P.	
SW-V-24B+	1	COMPCSITE OF SW-V-24B	R 447 L.7/8.3				R	1 3								
SW-V-24C	2	2" GATE VLV MC RHR PUMP MTR	R 446 H.7/4.3	215	B350	361205	D	1 3	P'79020.						P	
SW-V-24C+	1	COMPOSITE OF SW-V-24C	R 446 H.7/4.3				R	1 3								
SW-V-25	2	8"MC BFLY HFCS-P-2 DISCH.	A 442 A8/2.2	215	B250	361108	Q	4 0	0652		0.1			99+		N
SW-V-25+	1		A 442 A8/2.2					4 0								
SW-V-3B	2	8" GATE VLV SW	D 444 R.8/8.0	41A	V085	361725	A	4 0	DWG P2-3311-N-27		0 1			99+		N
SW-V-4A	2	DG-ENG-1A	D 443 R.H/6.0	41A	V085	361725	A	4 0	DWG P2-3311-N-28		0 1			99+		N
SW-V-4A+	1	SSW FROM DG-ENG-1C	C 443 R.8/6.0					4 0								

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
SW-V-4B	8" MO GATE SSW OUT OF 1B & COOL	41A	361725	A	4 0		0.1			99+		N
2	D 441 R.4/5.6	V085			DWG P2-3311-N-28							
SW-V-4E+	SSW FROM DG-ENE-1B				4 0							
1	D 441 R.4/5.6											
SW-V-4C	8"GATE SSW OUT OF HPCS DSL ENG GEN	41A	361725	A	4 0							
2	D 441 R.4/5.6	V085			DWG P2-3311-N-28							
SW-V-4C+	COIPOSITE TC SW-V-4B				4 0							
1	D 441 R.4/5.6											
SW-V-44	2" GATE VLV MO LPCS PUMP MTR	218	361205	0	1 0							
2	R 446 K.9/3.8	8350			DWG 79020.							
SW-V-44+	COMPOSITE CF SW-V-44+			R	1 0							
1	R 446 K.9/3.9											
SW-V-54	2" GATE VLV MO HPCS PUMP MOTOR	215	361205	0	1 0							
2	R 450 M.8/3.9	8350			DWG 79020							
SW-V-54+	COMPCSITE CF SW-V-54+			R	1 0							
1	R 450 M.8/3.9											
SW-V-69A+	18" GATE SSW RETURN TO COOL. TOWE.				4 3							
1	A 433 C.4/1.3											
SW-V-69B	18"GATE MO RETURN TO COOL TOWERS	41A	361730	A	4 3		0.1			33		N
2	B 435 C.5/2.0.	V085			DWG P2-3313-N-43							
SW-V-70A	18"MO GATE RETURN TO COOL TOWERS	41A	361730	A	4 3		0.1			33		N
2	A 433 C.4/1.6	V085			DWG P2-3313-N-43							
SW-V-70B	18"MC GATE RETURN TC TOWERS	41A	361730	A	4 3		0 1			33		N
2	B 435 C.5/2.4	V085			DWG P2-3313-N-43							
SW-V-70B+					4 3							
1	B 435 C.5/2.4											
SW-V-75A	2" GLOBE VLV MC TO FUEL POOL	215	361205	0	1 0		0.1			99+		N
2	R 530 H.7/9.4	8350			P 76630-2							
SW-V-75A+	SW TIELINE TO FUEL POOL				1 0							
1	R 530 H.7/9.4											
SW-V-75B	2" GLOBE VLV MC TO FUEL POOL	215	361205	Q	1 0		0.1			99+		N
2	R 530 N.0/9.4	8350			P 76630-2							
SW-V-90	2" GATE VLV DMA-CC-51	215	361205	0	4 0							
2	D 448 R.0/9.8	8350			DWG 79020.							
SW-V-90+	COOLING WATER INTO DMA-C C-51				4 0.							
1	W 448 R.0/9.8											
WEA-AD-51	CONTROL RM EXH DAMPER	216		R	4 3							
2	W 525 K.5/1.5	P014			#							
WEA-AD-51+	CONTROL RM EXHAUST DAMPER				4 3							
1	W 525 K.5/1.5											
WEA-AD-52	CABLE CHASE EXH FAN DAMPER			R	4 3							
2	W 525 J4/14.7	P014			#							
WEA-AD-52+	CABLE CHASE EXHAUST DAMPER				4 3							
1	W 525 J4/14.7											
WEA-FN-51	CONTROL RM EXH FAN	28	145014	D	4 3						P	
2	W 525 K7/14.9	B250			745-9794							
WEA-FN-51+	CONTROL RM EXHAUST FAN				4 3							
1	W 525 K7/14.9											
WEA-FN-52	CABLE CHASE EXH FAN	28	145014	A	4 3					66		N

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	W 525 J4/14.7	B515			745-9794							
WEA-FN-52+	CABLE CHASE EXHAUST FAN				4 3							
1	W 525 J4/14.7											
WEA-FN-53A	BATT RM 1 EXH FAN	28	145014	A	4 3					46		N
2	W 525 J4/14.9	B515			745-9795							
WEA-FN-53A+	BATT RM 1 EXHAUST FAN				4 3							
1	W 525 J4/14.9											
WEA-FN-53B	BATT RM 2 EXH FAN	28	145014	A	4 3					66		N
2	W 525 K5/14.5	B515			745-9796							
WEA-FN-53B+	BATT RM 2 EXHAUST FAN				4 3							
1	W 525 K5/14.5											
WMA-AD-51A1	WMA-AH-51A SUC DAMPER	216	011001	R	4 3							
2	W 535 H8/12.4	P014			630-N-31408							
WMA-AD-51A1+	WMA-AH-51A SUCTION DAMPER				4 3							
1	W 535 H.8/12.4											
WMA-AD-51B1	WMA-AH-51B SUC DAMPER	216		R	4 3							
2	W 535 L.4/11.0	P014			#							
WMA-AD-51B1+	WMA-AH-51B SUCTION DAMPER				4 3							
1	W 535 L.4/11.0											
WMA-AD-52/1	WMA-FN-52B SUCTION DAMPER	216	011001	R	4 3							
2	W 535 L5/11.8	P014			630-N-31408							
WMA-AD-52/1+	WMA-FN-52B SUCTION DAMPER				4 3							
1	W 535 L.5/11.8											
WMA-AD-52/2	WMA-FN-52B SUCTION DAMPER	216	011001	R	4 3							
2	W 535 L5/11.8	P014			630-N-31408							
WMA-AD-52/2+	WMA-FN-52B SUCTION DAMPER				4 3							
1	W 535 L.5/11.8											
WMA-AD-54A1	WMA-FU-54A SUC DAMPER	216	011001	R	4 3							
2	W 535 H7/12.5	P014			630-N-31408							
WMA-AD-54A1+	WMA-FU-54A SUCTION DAMPER				4 3							
1	W 535 H.7/12.5											
WMA-AD-54A2	WMA-FU-54A SUC DAMPER	216	011001	R	4 3							
2	W 535 H5/12.4	P014			630-N-31408							
WMA-AD-54A2+	WMA-FU-54A SUCTION DAMPER				4 3							
1	W 535 H.5/12.4											
WMA-AD-54B1	WMA-FU-54B SUC DAMPER	216	011001	R	4 3							
2	W 535 L5/11.1	P014			630-N-31408							
WMA-AD-54B1+	WMA-FU-54B SUCTION DAMPER				4 3							
1	W 535 L.5/11.1											
WMA-AD-54B2	WMA-FU-54B SUC DAMPER	216	011001	R	4 3							
2	W 535 L5/11	P014			630-N-31408							
WMA-AD-54B2+	WMA-FU-54B SUCTION DAMPER				4 3							
1	W 535 L.5/11.0											
WMA-AH-51A	CONTROL RM AIR HANDLING UNIT	67	012005	N	4 3							N
2	W 525 J4/12	P295			WO-5-5040							
WMA-AH-51A+	CONTROL ROOM AIR HANDLING UNIT			N	4 3							
1	W 525 J.4/12											
WMA-AH-51B	CONTROL RM AIR HANDLING UNIT	67		N	4 3							N
2	W 525 K4/10.5	P295										

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
WMA-AH-51B+	CONTROL ROOM AIR HANDLING UNIT			M	4 3							
1	W 525 K.4/10.5											
WMA-AH-52A	CABLE RM AIR HANDLING UNIT	67	012005	A	4 3	2 1	0 1			11+		N
2	W 525 K2/12.5	P295			WO-5040							
WMA-AH-52A+	CABLE RM AIR HANDLING UNIT			A	4 3							
1	W 525 K2/12.5											
WMA-AH-52B	CABLE RM AIR HANDLING UNIT	67	012005	A	4 3	2 1	0 1			11+		N
2	W 525 K2/12.5	P295			WO-5040							
WMA-AH-52B+	CABLE RM AIR HANDLING UNIT			A	4 3							
1	W 525 K2/12.5											
WMA-AH-53A	CRIT. SWGR RM1 AIR HANDLING UNIT	67	012005	N	4 3							N
2	W 525 J2/10.5	P295			WO-5040							
WMA-AH-53A+	CRIT,SWGR,RM1 AIR HANDLING UNIT			M	4 3							
1	W 525 J.2/10.5											
WMA-AH-53B	CRIT. SWGR RM 2 AIRHANDLING UNIT	67	012005	N	4 3							N
2	W 525 K2/12.5	P295			WO-MS-5040							
WMA-AH-53B+	CRIT,SWGR RM 2 AIR HANDLING UNIT			M	4 3							
1	W 525 K2/12.5											
WMA-FN-51A	SUPPLY FAN FOR WMA-AH-51A	67	145006	N	4 3							N
2	W 525 J4/12	P295			P270							
WMA-FN-51A+	SUPPLY FAN FOR WMA-AH-51A			M	4 3							
1	W 525 J.4/12.0											
WMA-FN-51B	SUPPLY FAN FOR WMA-AH-51B	67	145006	N	4 3							N
2	W 525 K4/10.5	P295			P270							
WMA-FN-51B+	SUPPLY FAN FOR WMA-AH-51A			M	4 3							
1	W 525 K4/10.5											
WMA-FN-52A	SUPPLY FAN FOR WMA-AH-52A	67	145016	A	4 3	2 1	0 1			11+		N
2	W 525 J5/11.4	P295			182-2							
WMA-FN-52B	SUPPLY FAN FOR WMA-AH-52B	67	145016	A	4 3	2 1	0 1			11+		N
2	W 525 K5/11.4	P295			182-2							
WMA-FN-53A	SUPPLY FAN FOR WMA-AH-53A	67	145007	N	4 3							N
2	W 525 J6/10.5	P295			P300							
WMA-FN-53B	SUPPLY FAN FOR WMA-AH-53B	67	145007	N	4 3							N
2	W 525 K6/12	P295			P300.							
WMA-FN-54A	FAN FOR WMA-FU-54A	18	145017	R	4 3							
2	W 535 H4/12	B515			ES11108R8844							
WMA-FN-54B	FAN FOR WMA-FU-54A	18	145018	R	4 3							
2	W 535 L8/10.5	B515			R-8844							
WMA-FU-54A+	CONTROL ROOM FILTER UNIT		158002		4 3							
1	W 535 H.4/12.0	F030			N-190-01							
WMA-FU-54B+	CONTROL ROOM FILTER UNIT		158002		4 3							
1	W 535 L.8/10.5	F030			N-190-01							
WMA-FCV-54A	DELGE DELUGE VALVE ASSEMBLY WMA-D	18	236006	R	4 3							
2	W 530 J.3/12.4	F030			A-48011-6							
WMA-PCV-54B	DELGE DELUGE VALVE ASSEMBLY WMA-D	18	236006	R	4 3							
2	W 530 L.1/12.4	F030			A-48011-6							
WOA-V-51A	12.0"BFLY REMOTE INTAKE "A"(EHO)	216	361109	R	4 3							
2	W 530 K1/14.6	B250			0659							
WOA-V-51A+	12.0" BFLY REMOTE INTAKE "A" (EHO)				4 3							

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1	W 530 K1/14.6												
WOA-V-51B	12.0"BFLY REMOTE INTAKE "B"(EHO)	216		361109	R	4 3							
2	W 530 K2/14.8		B250			0658							
WOA-V-51B+	12.0" BFLY REMOTE INTAKE "B" (EHO)					4 3							
1	W 530 K2/14.8												
WOA-V-51C	12.0"BFLY OUTSIDE AIR INTAKE (EHO)	216		361109	R	4 3							
2	W 530 K2/14.7		B250			0658							
WOA-V-51C+	12.0" BFLY OUTSIDE AIR INTAKE EHO					4 3							
1	W 530 K2/14.7												
WOA-V-51D	6.0" BFLY REMOTE INLET PURGE VLV	216			R	4 3							
2	W 530 K1/14.6		B250										
WOA-V-51D+	6.0" BFLY REMOTE INLET PURGE VLV					4 3							
1	W 530 K1/14.6												
WOA-V-51E	6.0" BFLY REMOTE INLET PURGE VLV	216			R	4 3							
2	W 530 K2/14.7		B250										
WOA-V-51E+	6.0" BFLY REMOTE INLET PURGE VLV					4 3							
1	W 530 K2/14.7												
WOA-V-52A	12.0"BFLY REMOTE INTAKE "A"(EHO)	216		361109	R	4 3							
2	W 531 K1/14.6		B250			0658							
WOA-V-52A+	12.0" BFLY REMOTE INTAKE "A" (EHO)					4 3							
1	W 531 K1/14.6												
WOA-V-52B	12.0"BFLY REMOTE INTAKE "B"(EHO)	216		361109	D	4 3						P	
2	W 531 K2/14.8		B250			0658							
WOA-V-52B+	12.0" BFLY REMOTE AIR INTAKE (EHO)					4 3							
1	W 531 K2/14.8												
WOA-V-52C	12.0"BFLY OUTSIESE AIR INTAKE(EHO)	216		361109	R	4 3							
2	W 531 K2/14.7		B250			0658							
WOA-V-52C+	12.0" BFLY OUTSIDE AIR INTAKE EHO					4 3							
1	W 531 K2/14.7												
WOA-V-52D	6.0" BFLY REMOTE INLET PURGE VLV	216			R	4 3							
2	W 531 K1/14.6		B250										
WOA-V-52D+	6.0" BFLY REMOTE INLET PURGE VLV					4 3							
1	W 531 K1/14.6												
WOA-V-52E	6.0" BFLY REMOTE INLET PURGE VLV	216			R	4 3							
2	W 531 K1/14.7		B250										
WOA-V-52E+	6.0" BFLY REMOTE INLET PURGE VLV					4 3							
1	W 531 K1/14.7												
CAC-AW-1A	SCRUBBER	71		024001	Y	1 0	2 1					F	N
2	R 573 M.5/6.6		A136			0701							
CAC-AW-1B	SCRUBBER	71		024001	Y	1 0	2 1					F	N
2	R 573 M.5/7.5		A136			0701							
CAC-CR-1A		71		275001	R	1 0							
2	R 573 M.5/6.6		A136			0210							
CAC-CR-1B		71		275001	R	1 0							
2	R 573 M.5/7.5		A136			0210							
CAC-EV-1A	AFTERCOOLER	71		125001	Y	1 0	2 1					F	N
2	R 573 M.5/5.6		A136			0212							
CAC-EV-1B	AFTERCOOLER	71		125001	Y	1 0	2 1					F	N
2	R 573 M.5/7.5		A136			0212							

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CAC-FCV-22A 2	1/2" FCV AT CAC-PT-1A R 572 M.6/6.4	71 K085	133008		2 0 NU2702							
CAC-FCV-22B 2	1/2" FCV AT CAC-PT-1B R 572 M.6/7.5	71 K085	133008		2 0 NU2702							
CAC-FCV-8A 2	0.5" GATE TO FLOW INDICATOR 8A R 572 M.6/6.4	71 K085	133006	A	2 0 N28D	2 1					F	N
CAC-FCV-8B 2	0.5" GATE TO FLOW INDICATOR 8B R 572 M.6/7.5	71 K085	133006	A	2 0 P.O. 004-1371-113	2 1					F	N
CAC-FE-1A 2	CAC-HR-1A SUPPLY FROM CAC-FCV-1B R 575 M6/7.3	215 E222	134001	R	1 0 731							
CAC-FE-1B 2	CAC-HR-1B SUPPLY FROM CAC-FCV-1B R 565 J5/7.2	215 E222	134001	R	1 0 731							
CAC-FE-2A 2	CAC-HR-1A DISCH.TO CAC-FCV-2A R 558	215 E222	134001	R	1 0 731							
CAC-FE-2B 2	CAC-HR-1B DISCH.TO CAC-FCV-2A R 560 M5/6.5	215 E222	134001	R	1 0 731							
CAC-FE-3A 2	CAC-HR-1A SUPPLY FROM CAC-FCV-3A R 494 N1/4.3	215 E222	134001	R	1 0 731							
CAC-FE-3B 2	CAC-HR-1B SUPPLY FROM CAC-FCV-3B R 497 M5/7.8	215 E222	134001	R	1 0 731							
CAC-FE-4A 2	CAC-HR-1A DISCH.TO CAC-FCV-4A R 493 M7/7.9	215 E222	134001	R	1 0 731							
CAC-FE-4B 2	CAC-HR-1B DISCH.TO CAC-FCV-4B R 487 N6/6	215 E222	134001	R	1 0 731							
CAC-FE-5A 2	CAC-AW-1A SUPPLY FROM CAC-FCV-5A R 573 M.5/6.6	71 B081	134006	Y	2 0 386	2 1					F	N
CAC-FE-5B 2	CAC-AW-1B SUPPLY FROM CAC-FCV-5B R 573 M.5/7.7	71 A120	134006	Y	2 0 ML61385	2 1						N
CAC-FE-6A 2	CAC-MS-1A OUTLET FLOW ELEMENT R 573 M.5/6.6	71 A120	134005	Y	1 0 ML-60269	2 1						N
CAC-FE-6B 2	CAC-MS-1B OUTLET FLOW ELEMENT R 573 M.5/7.7	71 A120	134005	Y	1 0 ML-61385	2 1						N
CAC-FE-7A 2	CAC-MS-1A OUTLET RECYCLE FLOW EL R 573 M.5/6.6	71 A120	134005	Y	1 0 ML-60269	2 1						N
CAC-FE-7B 2	CAC-MS-1B OUTLET RECYCLE FLOW EL R 573 M.5/7.7	71 A120	134005	Y	1 0 ML-61385	2 1						N
CAC-MS-1A 2	MOISTURE SEPARATOR R 573 M.5/6.6	71 A136	223002	Y	1 0 0214	2 1					F	N
CAC-MS-1B 2	MOISTURE SEPARATOR R 573 M.5/6.6	71 A136	223002	Y	1 0 0214	2 1					F	N
CAC-RD-1A 2	AFTERCOOLER OUTLET RUPTURE DISC R 572 M.6/6.4	71 C594	276002		2 0 63265							
CAC-RD-1B 2	AFTERCOOLER OUTLET RUPTURE DISC R 572 M.6/7.5	71 C594	276002		2 0 63265							
CAC-ST-1A 2	SW STRAINER R 572 M.6/6.4	71 V085		A	2 0		F1					
CAC-ST-1B 2	SW STRAINER R 572 M.6/7.5	71 V085			2 0		F2					
CAS-VX-82E	1" ISOLATION CHK VLV DNSTRM				2 0							

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	2															
CIA-FLX-1A	2	FLEX-CONN MS-TK-4A TO MS-RV-2A	R 540 K.0/6.0	215	M270	144007	R	2	3	P 77262						
CIA-FLX-1B	2	FLEX-CONN MS-TK-4B TC MS -RV-3A	R 540 K.0/6.0	215	M270	144007	R	2	3	P 77262						
CIA-FLX-1C	2	FLEXIBLE CONN.MS-TK-4C TO MS-RV-2D	C	215	M270	144007	R	2	3	P 77262						
CIA-FLX-1D	2	FLEXIBLE CONN.MS-TK-4D TC MS-RV-2C	C	215	M270	144007	R	2	3	P 77262						
CIA-FLX-1E	2	FLEX. CONN. MS-TK-4E TO MS-RV-1B	C	215	M270	144007	R	2	3	P 77262						
CIA-FLX-1F	2	FLEX. CONN. MS-TK-4F TO MS-RV-2B	C	215	M270	144007	R	2	3	P 77262						
CIA-FLX-1G	2	FLEX. CONN. MS-TK-4G TO MS-RV-3C	C	215	M270	144007	R	2	3	P 77262						
CIA-FLX-1H	2	FLEX. CONN. MS-TK-4H TO MS-RV-3B	C	215	M270	144007	R	2	3	P 77262						
CIA-FLX-1J	2	FLEX. CONN. MS-TK-4J TO MS-RV-1A	C	215	M270	144007	R	2	3	P 77262						
CIA-FLX-1K	2	FLEX. CONN. MS-TK-4K TO MS-RV-1D	C	215	M270	144007	R	2	3	P 77262						
CIA-FLX-1L	2	FLEX. CONN. MS-TK-4K TO MS-RV-1C	C	215	M270	144007	R	2	3	P 77262						
CIA-FLX-1M	2	FLEX. CONN. MS-TK-4M TO MS-RV-4C	C	215	M270	144007	R	2	3	P 77262						
CIA-FLX-1N	2	FLEX. CONN. MS-TK-4N TO MS-RV-5C	C	215	M270	144007	R	2	3	P 77262						
CIA-FLX-1P	2	FLEX. CONN. MS-TK-4P TO MS-RV-4D	C	215	M270	144007	R	2	3	P 77262						
CIA-FLX-1R	2	FLEX. CONN. MS-TK-4R TO MS-RV-4B	C	215	M270	144007	R	2	3	P 77262						
CIA-FLX-1S	2	FLEX. CONN. MS-TK-4S TO MS-RV-4A	C	215	M270	144007	R	2	3	P 77262						
CIA-FLX-1U	2	FLEX. CONN. MS-TK-4U TC MS-RV-5B	C	215	M270	144007	R	2	3	P 77262						
CIA-FLX-1V	2	FLEX. CONN. MS-TK-4V TO MS-RV-3D	C	215	M270	144007	R	2	3	P 77262						
CIA-FLX-2M	2	FLEX. CONN. MS-TK-3M TO MS-RV-4C	C	215	M270	144007	R	2	0	P 77262						
CIA-FLX-2N	2	FLEX CONN MS-TK-3N TO MS-RV-5C	C	215	M270	144007	X	2	0	P 77262						
CIA-FLX-2P	2	FLEX. CONN. MS-TK-3P TO MS-RV-4D	C	215	M270	144007	R	2	0	P 77262						
CIA-FLX-2R	2	FLEX CONN MS-TK-3R TO MS-RV-4B	C	215	M270	144007	X	2	0	P 77262						
CIA-FLX-2S	2	FLEX. CONN. MS-TK-3S TC MS-RV-4A	C	215	M270	144007	R	2	0	P 77262						
CIA-FLX-2U	2	FLEX CONN	C	215	M270	144007	X	2	0	P 77262						

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CIA-FLX-2V	FLEX CONN MS-TK-3V TO MS-RV-3D	215	144007	K	2 0							
2	C	M270			P 77262							
CIA-PCV-1	4" GLOBE AO CONTAIN SUPPLY (X456)	42A	236003		2 3							
2	R 522	F130			53A7872							
CIA-RO-1A	CIA SUPPLY TO ADS VALVES	215	286004	R	3 0							
2	R 540 K.0/4.3	B345			BH32							
CIA-RO-1B	CIA SUPPLY TO ADS VALVES	215		R	3 0							
2	R 540 K.0/6.8	F130			BH32							
CIA-RV-5A	5" X'? RELIEF CIA N2 HDR	215		R	3 0							
2	R 455 N.7/7.8											
CIA-RV-5B	5" X'? RELIEF CIA N2 HDR	215		R	3 0							
2	R 455 N.7/7.8											
CIA-RV-6A	0.75IN. RELIEF AT X456 P&C. SUPPLY	215		R	2 3							
2	R 540 J.0/5.0											
CRD-FE-10	COOLING WATER FLOW	02	134007		3 1							
2	R 527 K.2/3.5	A509			AM1002							
CRD-FE-14	STABLIZING WATER FLOW	02	134009		3 1							
2	R 525 N.3/3.5	A509			AM210							
CRD-FE-3	SYSTEM FLOW	02			3 1							
2	R 527 P.6/3.5	A509										
CRD-FE-6	DRIVE WATER FLOW	02	134008		3 1							
2	R 528 K/3.5	A509			AM115A							
CRD-FU-10	CRD-P-1A/1B SUCTION FILTER	02	158004		2 3							
2	R 422 K.6/3.7	D177			21777							
CRD-FU-3A	DRIVE WATER FILTER	02	158003		2 0							
2	R 524 M.5/3.5	A218			52778-01-41-0204							
CRD-FU-3B	DRIVE WATER FILTER	02	158003		2 0							
2	R 524 M.5/3.5	A218			52778-04-41-0204							
CRD-RD-132/0219	N2 ACCUM RUPT DISC 1900-2100.PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/0223	N2 ACCUM RUPT DISC 1900-2100.PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/0227	N2 ACCUM RUPT DISC 1900-2100.PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/0231	N2 ACCUM RUPT DISC 1900-2100.PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/0235	N2 ACCUM RUPT DISC 1900-2100.PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/0239	N2 ACCUM RUPT DISC 1900-2100.PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/0243	N2 ACCUM RUPT DISC 1900-2100.PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/0615	N2 ACCUM RUPT DISC 1900-2100.PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/0619	N2 ACCUM RUPT DISC 1900-2100.PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/0623	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/0627	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/0631	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/0635	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/0639	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/0643	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/0647	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/1011	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/1015	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/1019	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/1023	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/1027	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/1031	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/1035	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/1039	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/1043	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/1047	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/1051	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/1407	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/1411	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/1415	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/1419	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/1423	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/1427	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/1431	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/1435	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG	TEST / MODEL NO.	ANL	F/O	C	FREQ	TM	HL
CRD-RD-132/1439	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/1443	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/1447	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/1451	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/1455	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/1803	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/1807	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/1811	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/1815	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/1819	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/1823	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/1827	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/1831	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/1835	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/1839	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/1843	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/1847	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/1851	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/1855	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/1859	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/2203	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/2207	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/2211	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/2215	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/2219	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/2223	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/2227	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/2231	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/2235	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/2239	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/2243	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/2247	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/2251	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/2255	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/2259	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/2603	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/2607	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/2611	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/2615	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/2619	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/2623	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/2627	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/2631	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/8.4	F103			ST							
CRD-RD-132/2635	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/2639	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/2643	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/2647	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/2651	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							
CRD-RD-132/2655	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/8.4	F103			ST							

EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-RD-132/2659	2	N2 ACCUM RUPT DISC 1900-2100 PSI	R 522 K2/8.4	02C12	F103	276001	B	2 0	ST	1 1	0 2			02		Y
CRD-RD-132/3003	2	N2 ACCUM RUPT DISC 1900-2100 PSI	R 522 L5/8.4	02C12	F103	276001	B	2 0	ST	1 1	0 2			02		Y
CRD-RD-132/3007	2	N2 ACCUM RUPT DISC 1900-2100 PSI	R 522 L5/8.4	02C12	F103	276001	B	2 0	ST	1 1	0 2			02		Y
CRD-RD-132/3011	2	N2 ACCUM RUPT DISC 1900-2100 PSI	R 522 L5/8.4	02C12	F103	276001	B	2 0	ST	1 1	0 2			02		Y
CRD-RD-132/3015	2	N2 ACCUM RUPT DISC 1900-2100 PSI	R 522 L5/8.4	02C12	F103	276001	B	2 0	ST	1 1	0 2			02		Y
CRD-RD-132/3019	2	N2 ACCUM RUPT DISC 1900-2100 PSI	R 522 L5/8.4	02C12	F103	276001	B	2 0	ST	1 1	0 2			02		Y
CRD-RD-132/3023	2	N2 ACCUM RUPT DISC 1900-2100 PSI	R 522 L5/8.4	02C12	F103	276001	B	2 0	ST	1 1	0 2			02		Y
CRD-RD-132/3027	2	N2 ACCUM RUPT DISC 1900-2100 PSI	R 522 L5/8.4	02C12	F103	276001	B	2 0	ST	1 1	0 2			02		Y
CRD-RD-132/3031	2	N2 ACCUM RUPT DISC 1900-2100 PSI	R 522 K2/3.7	02C12	F103	276001	B	2 0	ST	1 1	0 2			02		Y
CRD-RD-132/3035	2	N2 ACCUM RUPT DISC 1900-2100 PSI	R 522 K2/3.7	02C12	F103	276001	B	2 0	ST	1 1	0 2			02		Y
CRD-RD-132/3039	2	N2 ACCUM RUPT DISC 1900-2100 PSI	R 522 K2/3.7	02C12	F103	276001	B	2 0	ST	1 1	0 2			02		Y
CRD-RD-132/3043	2	N2 ACCUM RUPT DISC 1900-2100 PSI	R 522 K2/3.7	02C12	F103	276001	B	2 0	ST	1 1	0 2			02		Y
CRD-RD-132/3047	2	N2 ACCUM RUPT DISC 1900-2100 PSI	R 522 K2/3.7	02C12	F103	276001	B	2 0	ST	1 1	0 2			02		Y
CRD-RD-132/3051	2	N2 ACCUM RUPT DISC 1900-2100 PSI	R 522 K2/3.7	02C12	F103	276001	B	2 0	ST	1 1	0 2			02		Y
CRD-RD-132/3055	2	N2 ACCUM RUPT DISC 1900-2100 PSI	R 522 K2/3.7	02C12	F103	276001	B	2 0	ST	1 1	0 2			02		Y
CRD-RD-132/3059	2	N2 ACCUM RUPT DISC 1900-2100 PSI	R 522 K2/3.7	02C12	F103	276001	B	2 0	ST	1 1	0 2			02		Y
CRD-RD-132/3403	2	N2 ACCUM RUPT DISC 1900-2100 PSI	R 522 L5/3.7	02C12	F103	276001	B	2 0	ST	1 1	0 2			02		Y
CRD-RD-132/3407	2	N2 ACCUM RUPT DISC 1900-2100 PSI	R 522 L5/3.7	02C12	F103	276001	B	2 0	ST	1 1	0 2			02		Y
CRD-RD-132/3411	2	N2 ACCUM RUPT DISC 1900-2100 PSI	R 522 L5/3.7	02C12	F103	276001	B	2 0	ST	1 1	0 2			02		Y
CRD-RD-132/3415	2	N2 ACCUM RUPT DISC 1900-2100 PSI	R 522 L5/3.7	02C12	F103	276001	B	2 0	ST	1 1	0 2			02		Y
CRD-RD-132/3419	2	N2 ACCUM RUPT DISC 1900-2100 PSI	R 522 L5/3.7	02C12	F103	276001	B	2 0	ST	1 1	0 2			02		Y
CRD-RD-132/3423	2	N2 ACCUM RUPT DISC 1900-2100 PSI	R 522 L5/3.7	02C12	F103	276001	B	2 0	ST	1 1	0 2			02		Y
CRD-RD-132/3427	2	N2 ACCUM RUPT DISC 1900-2100 PSI	R 522 L5/3.7	02C12	F103	276001	B	2 0	ST	1 1	0 2			02		Y
CRD-RD-132/3431	2	N2 ACCUM RUPT DISC 1900-2100 PSI	R 522 K2/3.7	02C12	F103	276001	B	2 0	ST	1 1	0 2			02		Y
CRD-RD-132/3435		N2 ACCUM RUPT DISC 1900-2100 PSI		02C12		276001	B	2 0		1 1	0 2			02		Y

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/3439	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/3443	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/3447	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/3451	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/3455	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/3459	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/3803	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/3.7	F103			ST							
CRD-RD-132/3807	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/3.7	F103			ST							
CRD-RD-132/3811	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/3.7	F103			ST							
CRD-RD-132/3815	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/3.7	F103			ST							
CRD-RD-132/3819	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/3.7	F103			ST							
CRD-RD-132/3823	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/3.7	F103			ST							
CRD-RD-132/3827	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/3.7	F103			ST							
CRD-RD-132/3831	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/3835	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/3839	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/3843	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/3847	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/3851	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/3855	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/3859	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/4203	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/3.7	F103			ST							
CRD-RD-132/4207	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/3.7	F103			ST							
CRD-RD-132/4211	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/3.7	F103			ST							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-RD-132/4215	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0.2			02		Y
2	R 522 L5/3.7	F103			ST							
CRD-RD-132/4219	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0.2			02		Y
2	R 522 L5/3.7	F103			ST							
CRD-RD-132/4223	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0.2			02		Y
2	R 522 L5/3.7	F103			ST							
CRD-RD-132/4227	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/3.7	F103			ST							
CRD-RD-132/4231	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/4235	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0.2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/4239	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0.2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/4243	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0.2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/4247	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0.2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/4251	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0.2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/4255	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0.2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/4259	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/4607	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0.2			02		Y
2	R 522 L5/3.7	F103			ST							
CRD-RD-132/4611	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/3.7	F103			ST							
CRD-RD-132/4615	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0.2			02		Y
2	R 522 L5/3.7	F103			ST							
CRD-RD-132/4619	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0.2			02		Y
2	R 522 L5/3.7	F103			ST							
CRD-RD-132/4623	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/3.7	F103			ST							
CRD-RD-132/4627	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/3.7	F103			ST							
CRD-RD-132/4631	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0.2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/4635	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0.2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/4639	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/4643	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/4647	N2 ACCUM RUPT DISC 1900-2100 PST	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/4651	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/4655	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/5011	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/3.7	F103			ST							
CRD-RD-132/5015	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/3.7	F103			ST							
CRD-RD-132/5019	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/3.7	F103			ST							
CRD-RD-132/5023	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/3.7	F103			ST							
CRD-RD-132/5027	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/3.7	F103			ST							
CRD-RD-132/5031	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/5035	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/5039	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/5043	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/5047	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/5051	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/5415	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/3.7	F103			ST							
CRD-RD-132/5419	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/3.7	F103			ST							
CRD-RD-132/5423	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/3.7	F103			ST							
CRD-RD-132/5427	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/3.7	F103			ST							
CRD-RD-132/5431	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/5435	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/5439	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/5443	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/5447	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/5815	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/3.7	F103			ST							
CRD-RD-132/5823	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 L5/3.7	F103			ST							
CRD-RD-132/5827	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	P 522 L5/3.7	F103			ST							
CRD-RD-132/5831	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-RD-132/5835	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/5839	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RD-132/5843	N2 ACCUM RUPT DISC 1900-2100 PSI	02C12	276001	B	2 0	1 1	0 2			02		Y
2	R 522 K2/3.7	F103			ST							
CRD-RO-7A	CRD-P-1A MIN. FLOW TO COND-TK-1A	02			2 0							
2	R 422	6080										
CRD-RO-7B	CRD-P-1B MIN. FLOW TCCOND.-TK-1A	02			2 0							
2	R 422	6080										
CRD-RC-8	CHARGING WATER HEADER	02			2 0							
2	R 522	6080										
CRD-RV-1A	RELIEF CRD-ST-1A INLET 1" X 2"	215	297003		2 0							
2	R 425 N.7/3.9	L265			D/OE							
CRD-RV-1B	RELIEFA CRD-ST-1B INLET 1" X 2"	215	297003		2 0							
2	R 425 N.8/4.7	L265			D/OE							
CRD-RV-12	0.75" X 1.00" RELIEF VALVE	02C12	297017	T	1 3	1 1	0.0			05		N
2	R 527 J.1/4.9	C710			N-55184							
CRD-RV-80	1" RELIEF COOL HDR TO EXH HDR	215			2 0							
2	R 529 N.3/3.5											
CRD-RV-81	1" RELIEF COOL HDR TC EXH HDR	215			2 0							
2	R 529 N.3/3.5											
CRD-ST-2A	UPSTREAM STRAINER CRD-FU-10				2 0							
2	R 423 N.6/3.7	S373										
CRD-ST-2B	BYPASS STRAINER CRD-FU-10				2 0							
2	R 423 N.6/3.7	S373										
CRD-TK-SDIV1A	SCRAM DISCH. IASTR. VOL. TANK				1 3							
2	R 523 J.2/6.9											
CRD-TK-SDIV1B	SCRAM DISCH. IASTR. VOL. TANK				1 3							
2	R 532 J.2/5.0											
CRD-TK-125/0219	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	6080			921D59561							
CRD-TK-125/0223	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	6080			921D59561							
CRD-TK-125/0227	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	6080			921D59561							
CRD-TK-125/0231	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	6080			921D59561							
CRD-TK-125/0235	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	6080			921D59561							
CRD-TK-125/0239	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	6080			921D59561							
CRD-TK-125/0243	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	6080			921D59561							
CRD-TK-125/0615	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	6080			921D59561							
CRD-TK-125/0619	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	6080			921D59561							
CRD-TK-125/0623	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 L5/8.4	6080			921059561							
CRD-TK-125/0627	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	6080			921059561							
CRD-TK-125/0631	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	6080			921059561							
CRD-TK-125/0635	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	6080			921059561							
CRD-TK-125/0639	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	6080			921059561							
CRD-TK-125/0643	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	6080			921059561							
CRD-TK-125/0647	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	6080			921059561							
CRD-TK-125/1011	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	6080			921059561							
CRD-TK-125/1015	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	6080			921059561							
CRD-TK-125/1019	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	6080			921059561							
CRD-TK-125/1023	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	6080			921059561							
CRD-TK-125/1027	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	6080			921059561							
CRD-TK-125/1031	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	6080			921059561							
CRD-TK-125/1035	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0.2			02		Y
2	R 522 K2/8.4	6080			921059561							
CRD-TK-125/1039	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	6080			921059561							
CRD-TK-125/1043	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0.2			02		Y
2	R 522 K2/8.4	6080			921059561							
CRD-TK-125/1047	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0.2			02		Y
2	R 522 K2/8.4	6080			921059561							
CRD-TK-125/1051	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0.2			02		Y
2	R 522 K2/8.4	6080			921059561							
CRD-TK-125/1407	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	6080			921059561							
CRD-TK-125/1411	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	6080			921059561							
CRD-TK-125/1415	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	6080			921059561							
CRD-TK-125/1419	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	6080			921059561							
CRD-TK-125/1423	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	6080			921059561							
CRD-TK-125/1427	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	6080			921059561							
CRD-TK-125/1431	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	6080			921059561							

EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-TK-125/1435	2	HCU SCRAM WATER ACCUMULATOR	R 522 K2/8.4	02C12	6080	343008	B	1 3	921059561	1 1	0 2			02		Y
CRD-TK-125/1439	2	HCU SCRAM WATER ACCUMULATOR	R 522 K2/8.4	02C12	6080	343008	B	1 3	921059561	1 1	0.2			02		Y
CRD-TK-125/1443	2	HCU SCRAM WATER ACCUMULATOR	R 522 K2/8.4	02C12	6080	343008	B	1 3	921059561	1 1	0 2			02		Y
CRD-TK-125/1447	2	HCU SCRAM WATER ACCUMULATOR	R 522 K2/8.4	02C12	6080	343008	B	1 3	921059561	1 1	0.2			02		Y
CRD-TK-125/1451	2	HCU SCRAM WATER ACCUMULATOR	R 522 K2/8.4	02C12	6080	343008	B	1 3	921059561	1 1	0.2			02		Y
CRD-TK-125/1455	2	HCU SCRAM WATER ACCUMULATOR	R 522 K2/8.4	02C12	6080	343008	B	1 3	921059561	1 1	0.2			02		Y
CRD-TK-125/1803	2	HCU SCRAM WATER ACCUMULATOR	R 522 L5/8.4	02C12	6080	343008	B	1 3	921059561	1 1	0.2			02		Y
CRD-TK-125/1807	2	HCU SCRAM WATER ACCUMULATOR	R 522 L5/8.4	02C12	6080	343008	B	1 3	921059561	1 1	0 2			02		Y
CRD-TK-125/1811	2	HCU SCRAM WATER ACCUMULATOR	R 522 L5/8.4	02C12	6080	343008	B	1 3	921059561	1 1	0.2			02		Y
CRD-TK-125/1815	2	HCU SCRAM WATER ACCUMULATOR	R 522 L5/8.4	02C12	6080	343008	B	1 3	921059561	1 1	0.2			02		Y
CRD-TK-125/1819	2	HCU SCRAM WATER ACCUMULATOR	R 522 L5/8.4	02C12	6080	343008	B	1 3	921059561	1 1	0.2			02		Y
CRD-TK-125/1823	2	HCU SCRAM WATER ACCUMULATOR	R 522 L5/8.4	02C12	6080	343008	B	1 3	921059561	1 1	0 2			02		Y
CRD-TK-125/1827	2	HCU SCRAM WATER ACCUMULATOR	R 522 L5/8.4	02C12	6080	343008	B	1 3	921059561	1 1	0 2			02		Y
CRD-TK-125/1831	2	HCU SCRAM WATER ACCUMULATOR	R 522 L5/8.4	02C12	6080	343008	B	1 3	921059561	1 1	0.2			02		Y
CRD-TK-125/1835	2	HCU SCRAM WATER ACCUMULATOR	R 522 K2/8.4	02C12	6080	343008	B	1 3	921059561	1 1	0 2			02		Y
CRD-TK-125/1839	2	HCU SCRAM WATER ACCUMULATOR	R 522 K2/8.4	02C12	6080	343008	B	1 3	921059561	1 1	0 2			02		Y
CRD-TK-125/1843	2	HCU SCRAM WATER ACCUMULATOR	R 522 K2/8.4	02C12	6080	343008	B	1 3	921059561	1 1	0 2			02		Y
CRD-TK-125/1847	2	HCU SCRAM WATER ACCUMULATOR	R 522 K2/8.4	02C12	6080	343008	B	1 3	921059561	1 1	0 2			02		Y
CRD-TK-125/1851	2	HCU SCRAM WATER ACCUMULATOR	R 522 K2/8.4	02C12	6080	343008	B	1 3	921059561	1 1	0.2			02		Y
CRD-TK-125/1855	2	HCU SCRAM WATER ACCUMULATOR	R 522 K2/8.4	02C12	6080	343008	B	1 3	921059561	1 1	0.2			02		Y
CRD-TK-125/1859	2	HCU SCRAM WATER ACCUMULATOR	R 522 K2/8.4	02C12	6080	343008	B	1 3	921059561	1 1	0 2			02		Y
CRD-TK-125/2203	2	HCU SCRAM WATER ACCUMULATOR	R 522 L5/8.4	02C12	6080	343008	B	1 3	921059561	1 1	0 2			02		Y
CRD-TK-125/2207	2	HCU SCRAM WATER ACCUMULATOR	R 522 L5/8.4	02C12	6080	343008	B	1 3	921059561	1 1	0 2			02		Y
CRD-TK-125/2211	2	HCU SCRAM WATER ACCUMULATOR	R 522 L5/8.4	02C12	6080	343008	B	1 3	921059561	1 1	0 2			02		Y
CRD-TK-125/2215		HCU SCRAM WATER ACCUMULATOR		02C12		343008	B	1 3		1 1	0.2			02		Y

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 L5/8.4	6080			921D59561							
CRD-TK-125/2219	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	6080			921D59561							
CRD-TK-125/2223	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	6080			921D59561							
CRD-TK-125/2227	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	6080			921D59561							
CRD-TK-125/2231	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	6080			921D59561							
CRD-TK-125/2235	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0.2			02		Y
2	R 522 K2/8.4	6080			921D59561							
CRD-TK-125/2239	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	6080			921D59561							
CRD-TK-125/2243	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0.2			02		Y
2	R 522 K2/8.4	6080			921D59561							
CRD-TK-125/2247	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0.2			02		Y
2	R 522 K2/8.4	6080			921D59561							
CRD-TK-125/2251	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0.2			02		Y
2	R 522 K2/8.4	6080			921D59561							
CRD-TK-125/2255	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0.2			02		Y
2	R 522 K2/8.4	6080			921D59561							
CRD-TK-125/2259	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0.2			02		Y
2	R 522 K2/8.4	6080			921D59561							
CRD-TK-125/2603	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	6080			921D59561							
CRD-TK-125/2607	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	6080			921D59561							
CRD-TK-125/2611	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	6080			921D59561							
CRD-TK-125/2615	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	6080			921D59561							
CRD-TK-125/2619	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	6080			921D59561							
CRD-TK-125/2623	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	6080			921D59561							
CRD-TK-125/2627	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	6080			921D59561							
CRD-TK-125/2631	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	6080			921D59561							
CRD-TK-125/2635	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	6080			921D59561							
CRD-TK-125/2639	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	6080			921D59561							
CRD-TK-125/2643	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	6080			921D59561							
CRD-TK-125/2647	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	6080			921D59561							
CRD-TK-125/2651	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	6080			921D59561							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE	TEST / MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
CRD-TK-125/2655	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	6080			921D59561							
CRD-TK-125/2659	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	6080			921D59561							
CRD-TK-125/3003	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	6080			921D59561							
CRD-TK-125/3007	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	6080			921D59561							
CRD-TK-125/3011	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	6080			921D59561							
CRD-TK-125/3015	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	6080			921D59561							
CRD-TK-125/3019	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	6080			921D59561							
CRD-TK-125/3023	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	6080			921D59561							
CRD-TK-125/3027	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	6080			921D59561							
CRD-TK-125/3031	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/3035	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/3039	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/3043	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/3047	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/3051	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/3055	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/3059	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/3403	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/3407	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/3411	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/3415	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/3419	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/3423	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/3427	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/3431	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/3435	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/3439	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/3443	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/3447	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/3451	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/3455	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/3459	HCU SCRAM WATER ACCUPULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/3803	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/3807	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/3811	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/3815	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/3819	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/3823	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/3827	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/3831	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/3835	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/3839	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/3843	HCU SCRAP WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/3847	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/3851	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/3855	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/3859	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-12574203	HCU SCRAP WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/4207	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							

WASHINGTON PUBLIC POWER SUPPLY SYSTEM
SAFETY RELATED EQUIPMENT LIST FOR NRC-SQRT

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-TK-125/4211	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/4215	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/4219	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/4223	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/4227	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/4231	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0.2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/4235	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0.2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/4239	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/4243	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/4247	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0.2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/4251	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/4255	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0.2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/4259	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/4607	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/4611	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0.2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/4615	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0.2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/4619	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/4623	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0.2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/4627	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0.2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/4631	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/4635	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/4639	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0.2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/4643	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0.2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/4647	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0.2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/4651	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/4655	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/5011	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/5015	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/5019	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/5023	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/5027	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/5031	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/5035	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/5039	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/5043	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/5047	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/5051	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/5415	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/5419	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/5423	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/5427	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/5431	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/5435	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/5439	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/5443	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/5447	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D59561							
CRD-TK-125/5819	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/5823	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							
CRD-TK-125/5827	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	6080			921D59561							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-TK-125/5831	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0.2			02		Y
2	R 522 K2/3.7	6080			921D5956I							
CRD-TK-125/5835	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0.2			02		Y
2	R 522 K2/3.7	6080			921D5956I							
CRD-TK-125/5839	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	6080			921D5956I							
CRD-TK-125/5843	HCU SCRAM WATER ACCUMULATOR	02C12	343008	B	1 3	1 1	0.2			02		Y
2	R 522 K2/3.7	6080			921D5956I							
CRD-TK-128/0219	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	L237			920D852P3-PPD							
CRD-TK-128/0223	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	L237			920D852P3-PPD							
CRD-TK-128/0227	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	L237			920D852P3-PPD							
CRD-TK-128/0231	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	L237			920D852P3-PPD							
CRD-TK-128/0235	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0.2			02		Y
2	R 522 K2/8.4	L237			920D852P3-PPD							
CRD-TK-128/0239	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0.2			02		Y
2	R 522 K2/8.4	L237			920D852P3-PPD							
CRD-TK-128/0243	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0.2			02		Y
2	R 522 K2/8.4	L237			920D852P3-PPD							
CRD-TK-128/0615	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	L237			920D852P3-PPD							
CRD-TK-128/0619	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	L237			920D852P3-PPD							
CRD-TK-128/0623	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	L237			920D852P3-PPD							
CRD-TK-128/0627	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	L237			920D852P3-PPD							
CRD-TK-128/0631	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	L237			920D852P3-PPD							
CRD-TK-128/0635	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0.2			02		Y
2	P 522 K2/8.4	L237			920D852P3-PPD							
CRD-TK-128/0639	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	L237			920D852P3-PPD							
CRD-TK-128/0643	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0.2			02		Y
2	R 522 K2/8.4	L237			920D852P3-PPD							
CRD-TK-128/0647	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0.2			02		Y
2	R 522 K2/8.4	L237			920D852P3-PPD							
CRD-TK-128/1011	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	L237			920D852P3-PPD							
CRD-TK-128/1015	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	L237			920D852P3-PPD							
CRD-TK-128/1019	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0.2			02		Y
2	R 522 L5/8.4	L237			920D852P3-PPD							
CRD-TK-128/1023	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	L237			920D852P3-PPD							
CRD-TK-128/1027	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE	TEST	ANL	F/O	C	FREQ	TM	HL	MFG MODEL NO.
2	R 522 L5/8.4	L237											920D852P3-PPD
CRD-TK-128/1031	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y	
2	R 522 L5/8.4	L237											920D852P3-PPD
CRD-TK-128/1035	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y	
2	R 522 K2/8.4	L237											920D852P3-PPD
CRD-TK-128/1039	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y	
2	R 522 K2/8.4	L237											920D852P3-PPD
CRD-TK-128/1043	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y	
2	R 522 K2/8.4	L237											920D852P3-PPD
CRD-TK-128/1047	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y	
2	R 522 K2/8.4	L237											920D852P3-PPD
CRD-TK-128/1051	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y	
2	R 522 K2/8.4	L237											920D852P3-PPD
CRD-TK-128/1407	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y	
2	R 522 L5/8.4	L237											920D852P3-PPD
CRD-TK-128/1411	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y	
2	R 522 L5/8.4	L237											920D852P3-PPD
CRD-TK-128/1415	HCU N2 SCRAP ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y	
2	R 522 L5/8.4	L237											920D852P3-PPD
CRD-TK-128/1419	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y	
2	R 522 L5/8.4	L237											920D852P3-PPD
CRD-TK-128/1423	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y	
2	R 522 L5/8.4	L237											920D852P3-PPD
CRD-TK-128/1427	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y	
2	R 522 L5/8.4	L237											920D852P3-PPD
CRD-TK-128/1431	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y	
2	R 522 L5/8.4	L237											920D852P3-PPD
CRD-TK-128/1435	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y	
2	R 522 K2/8.4	L237											920D852P3-PPD
CRD-TK-128/1439	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y	
2	R 522 K2/8.4	L237											920D852P3-PPD
CRD-TK-128/1443	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y	
2	R 522 K2/8.4	L237											920D852P3-PPD
CRD-TK-128/1447	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y	
2	R 522 K2/8.4	L237											920D852P3-PPD
CRD-TK-128/1451	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y	
2	R 522 K2/8.4	L237											920D852P3-PPD
CRD-TK-128/1455	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y	
2	R 522 K2/8.4	L237											920D852P3-PPD
CRD-TK-128/1803	HCU N2 SCRAP ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y	
2	R 522 L5/8.4	L237											920D852P3-PPD
CRD-TK-128/1807	HCU N2 SCPAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y	
2	R 522 L5/8.4	L237											920D852P3-PPD
CRD-TK-128/1811	HCU N2 SCRAP ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y	
2	R 522 L5/8.4	L237											920D852P3-PPD
CPD-TK-128/1815	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y	
2	R 522 L5/8.4	L237											920D852P3-PPD
CRD-TK-128/1819	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y	
2	R 522 L5/8.4	L237											920D852P3-PPD

EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	TEST	ANL	F/O	C	FREQ	TP	HL	MFG MODEL NO.
CRD-TK-128/1823	2	HCU N2 SCRAM ACCUMULATOR	R 522 L5/8.4	02C12	L237	343009	B	1 3	1 1	0.2			02		Y	920D852P3-PPD
CRD-TK-128/1827	2	HCU N2 SCRAM ACCUMULATOR	R 522 L5/8.4	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	920D852P3-PPD
CRD-TK-128/1831	2	HCU N2 SCRAM ACCUMULATOR	R 522 L5/8.4	02C12	L237	343009	B	1 3	1 1	0.2			02		Y	920D852P3-PPD
CRD-TK-128/1835	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/8.4	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	920D852P3-PPD
CRD-TK-128/1839	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/8.4	02C12	L237	343009	B	1 3	1 1	0.2			02		Y	920D852P3-PPD
CRD-TK-128/1843	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/8.4	02C12	L237	343009	B	1 3	1 1	0.2			02		Y	920D852P3-PPD
CRD-TK-128/1847	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/8.4	02C12	L237	343009	B	1 3	1 1	0.2			02		Y	920D852P3-PPD
CRD-TK-128/1851	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/8.4	02C12	L237	343009	B	1 3	1 1	0.2			02		Y	920D852P3-PPD
CRD-TK-128/1855	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/8.4	02C12	L237	343009	B	1 3	1 1	0.2			02		Y	920D852P3-PPD
CRD-TK-128/1859	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/8.4	02C12	L237	343009	B	1 3	1 1	0.2			02		Y	920D852P3-PPD
CRD-TK-128/2203	2	HCU N2 SCRAM ACCUMULATOR	R 522 L5/8.4	02C12	L237	343009	B	1 3	1 1	0.2			02		Y	920D852P3-PPD
CRD-TK-128/2207	2	HCU N2 SCRAM ACCUMULATOR	R 522 L5/8.4	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	920D852P3-PPD
CRD-TK-128/2211	2	HCU N2 SCRAM ACCUMULATOR	R 522 L5/8.4	02C12	L237	343009	B	1 3	1 1	0.2			02		Y	920D852P3-PPD
CRD-TK-128/2215	2	HCU N2 SCRAM ACCUMULATOR	R 522 L5/8.4	02C12	L237	343009	B	1 3	1 1	0.2			02		Y	920D852P3-PPD
CRD-TK-128/2219	2	HCU N2 SCRAM ACCUMULATOR	R 522 L5/8.4	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	920D852P3-PPD
CRD-TK-128/2223	2	HCU N2 SCRAM ACCUMULATOR	R 522 L5/8.4	02C12	L237	343009	B	1 3	1 1	0.2			02		Y	920D852P3-PPD
CRD-TK-128/2227	2	HCU N2 SCRAM ACCUMULATOR	R 522 L5/8.4	02C12	L237	343009	B	1 3	1 1	0.2			02		Y	920D852P3-PPD
CRD-TK-128/2231	2	HCU N2 SCRAM ACCUMULATOR	R 522 L5/8.4	02C12	L237	343009	B	1 3	1 1	0.2			02		Y	920D852P3-PPD
CRD-TK-128/2235	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/8.4	02C12	L237	343009	B	1 3	1 1	0.2			02		Y	920D852P3-PPD
CRD-TK-128/2239	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/8.4	02C12	L237	343009	B	1 3	1 1	0.2			02		Y	920D852P3-PPD
CRD-TK-128/2243	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/8.4	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	920D852P3-PPD
CRD-TK-128/2247	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/8.4	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	920D852P3-PPD
CRD-TK-128/2251	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/8.4	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	920D852P3-PPD
CRD-TK-128/2255	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/8.4	02C12	L237	343009	B	1 3	1 1	0.2			02		Y	920D852P3-PPD
CRD-TK-128/2259		HCU N2 SCRAM ACCUMULATOR		02C12		343009	B	1 3	1 1	0 2			02		Y	

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 K2/8.4	L237			920D852P3-PPD							
CRD-TK-128/2603	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	L237			920D852P3-PPD							
CRD-TK-128/2607	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	L237			920D852P3-PPD							
CRD-TK-128/2611	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	L237			920D852P3-PPD							
CRD-TK-128/2615	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	L237			920D852P3-PPD							
CRD-TK-128/2619	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	L237			920D852P3-PPD							
CRD-TK-128/2623	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	L237			920D852P3-PPD							
CRD-TK-128/2627	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	L237			920D852P3-PPD							
CRD-TK-128/2631	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	L237			920D852P3-PPD							
CRD-TK-128/2635	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	L237			920D852P3-PPD							
CRD-TK-128/2639	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	L237			920D852P3-PPD							
CRD-TK-128/2643	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	L237			920D852P3-PPD							
CRD-TK-128/2647	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	L237			920D852P3-PPD							
CRD-TK-128/2651	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	L237			920D852P3-PPD							
CRD-TK-128/2655	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	L237			920D852P3-PPD							
CRD-TK-128/2659	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	L237			920D852P3-PPD							
CRD-TK-128/3003	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	L237			920D852P3-PPD							
CRD-TK-128/3007	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	L237			920D852P3-PPD							
CRD-TK-128/3011	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	L237			920D852P3-PPD							
CRD-TK-128/3015	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	L237			920D852P3-PPD							
CRD-TK-128/3019	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	L237			920D852P3-PPD							
CRD-TK-128/3023	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	L237			920D852P3-PPD							
CRD-TK-128/3027	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	L237			920D852P3-PPD							
CRD-TK-128/3031	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	L237			920D852P3-PPD							
CRD-TK-128/3035	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	L237			920D852P3-PPD							

EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	TEST	ANL	F/O	C	FREQ	TM	HL	MFG MODEL NO.
CRD-TK-128/3039	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	9200852P3-PPD
CRD-TK-128/3043	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/3.7	02C12	L237	343009	B	1 3	1 1	0.2			02		Y	9200852P3-PPD
CRD-TK-128/3047	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/3.7	02C12	L237	343009	B	1 3	1 1	0.2			02		Y	9200852P3-PPD
CRD-TK-128/3051	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/3.7	02C12	L237	343009	B	1 3	1 1	0.2			02		Y	9200852P3-PPD
CRD-TK-128/3055	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/3.7	02C12	L237	343009	B	1 3	1 1	0.2			02		Y	9200852P3-PPD
CRD-TK-128/3059	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	9200852P3-PPD
CRD-TK-128/3403	2	HCU N2 SCRAM ACCUMULATOR	R 522 L5/3.7	02C12	L237	343009	B	1 3	1 1	0.2			02		Y	9200852P3-PPD
CRD-TK-128/3407	2	HCU N2 SCRAM ACCUMULATOR	R 522 L5/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	9200852P3-PPD
CRD-TK-128/3411	2	HCU N2 SCRAM ACCUMULATOR	R 522 L5/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	9200852P3-PPD
CRD-TK-128/3415	2	HCU N2 SCRAM ACCUMULATOR	R 522 L5/3.7	02C12	L237	343009	B	1 3	1 1	0.2			02		Y	9200852P3-PPD
CRD-TK-128/3419	2	HCU N2 SCRAM ACCUMULATOR	R 522 L5/3.7	02C12	L237	343009	B	1 3	1 1	0.2			02		Y	9200852P3-PPD
CRD-TK-128/3423	2	HCU N2 SCRAM ACCUMULATOR	R 522 L5/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	9200852P3-PPD
CRD-TK-128/3427	2	HCU N2 SCRAM ACCUMULATOR	R 522 L5/3.7	02C12	L237	343009	B	1 3	1 1	0.2			02		Y	9200852P3-PPD
CRD-TK-128/3431	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	9200852P3-PPD
CRD-TK-128/3435	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	9200852P3-PPD
CRD-TK-128/3439	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	9200852P3-PPD
CRD-TK-128/3443	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	9200852P3-PPD
CRD-TK-128/3447	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/3.7	02C12	L237	343009	B	1 3	1 1	0.2			02		Y	9200852P3-PPD
CRD-TK-128/3451	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/3.7	02C12	L237	343009	B	1 3	1 1	0.2			02		Y	9200852P3-PPD
CRD-TK-128/3455	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	9200852P3-PPD
CRD-TK-128/3459	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	9200852P3-PPD
CRD-TK-128/3803	2	HCU N2 SCRAM ACCUMULATOR	R 522 L5/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	9200852P3-PPD
CRD-TK-128/3807	2	HCU N2 SCRAM ACCUMULATOR	R 522 L5/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	9200852P3-PPD
CRD-TK-128/3811	2	HCU N2 SCRAM ACCUMULATOR	R 522 L5/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	9200852P3-PPD
CRD-TK-128/3815		HCU N2 SCRAM ACCUMULATOR		02C12		343009	B	1 3	1 1	0.2			02		Y	

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 L5/3.7	L237			9200852P3-PPD							
CRD-TK-128/3819	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0.2			02		Y
2	R 522 L5/3.7	L237			9200852P3-PPD							
CRD-TK-128/3823	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0.2			02		Y
2	R 522 L5/3.7	L237			9200852P3-PPD							
CRD-TK-128/3827	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	L237			9200852P3-PPD							
CRD-TK-128/3831	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0.2			02		Y
2	R 522 K2/3.7	L237			9200852P3-PPD							
CRD-TK-128/3835	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0.2			02		Y
2	R 522 K2/3.7	L237			9200852P3-PPD							
CRD-TK-128/3839	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	L237			9200852P3-PPD							
CRD-TK-128/3843	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0.2			02		Y
2	R 522 K2/3.7	L237			9200852P3-PPD							
CRD-TK-128/3847	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	L237			9200852P3-PPD							
CRD-TK-128/3851	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	L237			9200852P3-PPD							
CRD-TK-128/3855	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0.2			02		Y
2	R 522 K2/3.7	L237			9200852P3-PPD							
CRD-TK-128/3859	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0.2			02		Y
2	R 522 K2/3.7	L237			9200852P3-PPD							
CRD-TK-128/4203	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	L237			9200852P3-PPD							
CRD-TK-128/4207	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0.2			02		Y
2	R 522 L5/3.7	L237			9200852P3-PPD							
CRD-TK-128/4211	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0.2			02		Y
2	R 522 L5/3.7	L237			9200852P3-PPD							
CRD-TK-128/4215	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	L237			9200852P3-PPD							
CRD-TK-128/4219	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0.2			02		Y
2	R 522 L5/3.7	L237			9200852P3-PPD							
CRD-TK-128/4223	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	L237			9200852P3-PPD							
CRD-TK-128/4227	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	L237			9200852P3-PPD							
CRD-TK-128/4231	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0.2			02		Y
2	R 522 K2/3.7	L237			9200852P3-PPD							
CRD-TK-128/4235	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0.2			02		Y
2	R 522 K2/3.7	L237			9200852P3-PPD							
CRD-TK-128/4239	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	L237			9200852P3-PPD							
CRD-TK-128/4243	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	L237			9200852P3-PPD							
CRD-TK-128/4247	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	L237			9200852P3-PPD							
CRD-TK-128/4251	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	L237			9200852P3-PPD							

EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	TEST	ANL	F/O	C	FREQ	TM	HL	MFG MODEL NO.
CRD-TK-128/4255	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	920D852P3-PPD
CRD-TK-128/4259	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	920D852P3-PPD
CRD-TK-128/4607	2	HCU N2 SCRAM ACCUMULATOR	R 522 L5/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	920D852P3-PPD
CRD-TK-128/4611	2	HCU N2 SCRAM ACCUMULATOR	R 522 L5/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	920D852P3-PPD
CRD-TK-128/4615	2	HCU N2 SCRAM ACCUMULATOR	R 522 L5/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	920D852P3-PPD
CRD-TK-128/4619	2	HCU N2 SCRAM ACCUMULATOR	R 522 L5/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	920D852P3-PPD
CRD-TK-128/4623	2	HCU N2 SCRAM ACCUMULATOR	R 522 L5/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	920D852P3-PPD
CRD-TK-128/4627	2	HCU N2 SCRAM ACCUMULATOR	R 522 L5/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	920D852P3-PPD
CRD-TK-128/4631	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	920D852P3-PPD
CRD-TK-128/4635	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	920D852P3-PPD
CRD-TK-128/4639	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	920D852P3-PPD
CRD-TK-128/4643	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	920D852P3-PPD
CRD-TK-128/4647	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	920D852P3-PPD
CRD-TK-128/4651	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	920D852P3-PPD
CRD-TK-128/4655	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	920D852P3-PPD
CRD-TK-128/5011	2	HCU N2 SCRAM ACCUMULATOR	R 522 L5/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	920D852P3-PPD
CRD-TK-128/5015	2	HCU N2 SCRAM ACCUMULATOR	R 522 L5/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	920D852P3-PPD
CRD-TK-128/5019	2	HCU N2 SCRAM ACCUMULATOR	R 522 L5/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	920D852P3-PPD
CRD-TK-128/5023	2	HCU N2 SCRAM ACCUMULATOR	R 522 L5/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	920D852P3-PPD
CRD-TK-128/5027	2	HCU N2 SCRAM ACCUMULATOR	R 522 L5/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	920D852P3-PPD
CRD-TK-128/5031	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	920D852P3-PPD
CRD-TK-128/5035	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	920D852P3-PPD
CRD-TK-128/5039	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	920D852P3-PPD
CRD-TK-128/5043	2	HCU N2 SCRAM ACCUMULATOR	R 522 K2/3.7	02C12	L237	343009	B	1 3	1 1	0 2			02		Y	920D852P3-PPD
CRD-TK-128/5047		HCU N2 SCRAM ACCUMULATOR		02C12		343009	B	1 3	1 1	0 2			02		Y	

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 K2/3.7	L237			9200852P3-PPD							
CRD-TK-128/5051	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	L237			9200852P3-PPD							
CRD-TK-128/5415	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	L237			9200852P3-PPD							
CRD-TK-128/5419	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	L237			9200852P3-PPD							
CRD-TK-128/5423	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	L237			9200852P3-PPD							
CRD-TK-128/5427	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	L237			9200852P3-PPD							
CRD-TK-128/5431	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	L237			9200852P3-PPD							
CRD-TK-128/5435	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	L237			9200852P3-PPD							
CRD-TK-128/5439	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	L237			9200852P3-PPD							
CRD-TK-128/5443	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	L237			9200852P3-PPD							
CRD-TK-128/5447	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	L237			9200852P3-PPD							
CRD-TK-128/5819	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	L237			9200852P3-PPD							
CRD-TK-128/5823	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	L237			9200852P3-PPD							
CRD-TK-128/5827	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	L237			9200852P3-PPD							
CRD-TK-128/5831	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	L237			9200852P3-PPD							
CRD-TK-128/5835	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	L237			9200852P3-PPD							
CRD-TK-128/5839	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	L237			9200852P3-PPD							
CRD-TK-128/5843	HCU N2 SCRAM ACCUMULATOR	02C12	343009	B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	L237			9200852P3-PPD							
CVB-AO-1A1	AO FOR CVB-SPV-1A1	213			3 0							
2	C 492 6 D AZ R35	A415			N04-3800							
CVB-AO-1A2	AO FOR CVB-SPV-1A2	213	018013		3 0							
2	C 492 6 D AZ R35	A415			N04-3800							
CVB-AO-1B1	AO FOR CVB-SPV-1B1	213	018013		3 0							
2	C 492 6 D AZ R35	A415			N04-3800							
CVB-AO-1B2	AO FOR CVB-SPV-1B1	213	018013		3 0							
2	C 492 6 D AZ R35	A415			N04-3800							
CVB-AO-1C1	AO FOR CVB-SPV-1C1	213	018013		3 0							
2	C 492 27 D AZ R35	A415			N04-3800							
CVB-AO-1C2	AO FOR CVB-SPV-1C2	213	018013		3 0							
2	C 492 27 D AZ R35	A415			N04-3800							
CVB-AO-1D1	AO FOR CVB-SPV-1D1	213	018013		3 0							
2	C 492 27 D AZ R35	A415			N04-3800							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CVB-AO-1D2	AO FOR CVB-SPV-1D2	213	018013		3 0							
2	C 492 27 D AZ R35	A415			N04-3800							
CVB-AO-1E1	AO FOR CVB-SPV-1E1	213	018013		3 0							
2	C 492 90 D AZ R35	A415			N04-3800							
CVB-AO-1E2	AO FOR CVB-SPV-1E2	213	018013		3 0							
2	C 492 90 D AZ R35	A415			N04-3800							
CVB-AO-1F1	AO FOR CVB-SPV-1F1	213	018013		3 0							
2	C 492 90 D AZ R35	A415			N04-3800							
CVB-AO-1F2	AO FOR CVB-SPV-1F2	213	018013		3 0							
2	C 492 90 D AZ R35	A415			N04-3800							
CVB-AO-1G1	AO FOR CVB-SPV-1G1	213	018013		3 0							
2	C 441 153 D AZ R35	A415			N04-3800							
CVB-AO-1G2	AO FOR CVB-SPV-1G2	213	018013		3 0							
2	C 441 153 D AZ R35	A415			N04-3800							
CVB-AO-1H1	AO FOR CVB-SPV-1H1	213	018013		3 0							
2	C 492 153 D AZ R35	A415			N04-3800							
CVB-AO-1H2	AO FOR CVB-SPV-1H2	213	018013		3 0							
2	C 492 153 D AZ R35	A415			N04-3800							
CVB-AO-1J1	AO FOR CVB-SPV-1J1	213	018013		3 0							
2	C 492 175 D AZ R35	A415			N04-3800							
CVB-AO-1J2	AO FOR CVB-SPV-1J2	213	018013		3 0							
2	C 492 175 D AZ R35	A415			N04-3800							
CVB-AO-1K1	AO FOR CVB-SPV-1K1	213	018013		3 0							
2	C 492 175 D AZ R35	A415			N04-3800							
CVB-AO-1K2	AO FOR CVB-SPV-1K2	213	018013		3 0							
2	C 492 175 D AZ R35	A415			N04-3800							
CVB-AO-1L1	AO FOR CVB-SPV-1L1	213	018013		3 0							
2	C 492 196 D AZ R35	A415			N04-3800							
CVB-AO-1L2	AO FOR CVB-SPV-1L2	213	018013		3 0							
2	C 492 196 D AZ R35	A415			N04-3800							
CVB-AO-1M1	AO FOR CVB-SPV-1M1	213	018013		3 0							
2	C 492 196 D AZ R35	A415			N04-3800							
CVB-AO-1M2	AO FOR CVB-SPV-1M2	213	018013		3 0							
2	C 492 196 D AZ R35	A415			N04-3800							
CVB-AO-1N1	AO FOR CVB-SPV-1N1	213	018013		3 0							
2	C 492 196 D AZ R35	A415			N04-3800							
CVB-AO-1N2	AO FOR CVB-SPV-1N2	213	018013		3 0							
2	C 492 196 D AZ R35	A415			N04-3800							
CVB-AO-1P1	AO FOR CVB-SPV-1P1	213	018013		3 0							
2	C 492 260 D AZ R35	A415			N04-3800							
CVB-AO-1P2	AO FOR CVB-SPV-1P2	213	018013		3 0							
2	C 492 260 D AZ R35	A415			N04-3800							
CVB-AO-1Q1	AO FOR CVB-SPV-1Q1	213	018013		3 0							
2	C 492 344 D AZ R35	A415			N04-3800							
CVB-AO-1Q2	AO FOR CVB-SPV-1Q2	213	018013		3 0							
2	C 492 344 D AZ R35	A415			N04-3800							
CVB-AO-1R1	AO FOR CVB-SPV-1R1	213	018013		3 0							
2	C 492 344 D AZ R35	A415			N04-3800							
CVB-AO-1R2	AO FOR CVB-SPV-1R2	213	018013		3 0							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TR	HL
2	C 492 349 D AZ R35	A415			N04-3800							
CVB-AO-1S1	AO FOR CVB-SPV-1S1	213	018013		3 0							
2	C 492 281 D AZ R35	A415			N04-3800							
CVB-AO-1S2	AO FOR CVB-SPV-1S2	213	018013		3 0							
2	C 492 281 D AZ R35	A415			N04-3800							
CVB-AO-1T1	AO FOR CVB-SPV-1T1	213	018013		3 0							
2	C 492 281 D AZ R35	A415			N04-3800							
CVB-AO-1T2	AO FOR CVB-SPV-1T2	213	018013		3 0							
2	C 492 281 D AZ R35	A415			N04-3800							
DCW-FLX-1A1	DCW-TK-2A1 SUPPLY LINE FLEX CONN	215		R	4 0							
2	D 445 R.0/5.6											
DCW-FLX-1A2	DCW-TK-2A2 SUPPLY LINE FLEX CONN.	215		R	4 0							
2	D 445 Q.0/5.6											
DCW-FLX-1B1	DCW-TK-2B1 SUPPLY LINE FLEX CONN.	215		R	4 0							
2	D 445 R.0/7.4											
DCW-FLX-1B2	DCW-TK-2B2 SUPPLY LINE FLEX CONN.	215		R	4 0							
2	D 445 Q.0/7.4											
DCW-FLX-2A1	FLEX CONNECTION TO DCW-HX-1A1	215		R	4 0							
2	D 448 R.0/5.6											
DCW-FLX-2A2	FLEX CONNECTION TO DCW-HX-1A2	215		R	4 0							
2	D 448 Q.0/5.6											
DCW-FLX-2B1	FLEX CONNECTION TO DCW-HX-1B1	215		R	4 0							
2	D 448 R.0/7.4											
DCW-FLX-2B2	FLEX CONNECTION TO DCW-HX-1B2	215		R	4 0							
2	D 448 Q.0/7.4											
DCW-FLX-3	FLEX CONNECTION INTO DCW-P-1C	02		R	4 0							
2	D 447 P.8/5.0											
DCW-FLX-3A1	DCW-TK-1A1 DRAIN FLEX CONNECTION	215	144004	R	4 0							
2	D 445 R.0/5.6				13292-24RE							
DCW-FLX-3A2	DCW-TK-1A2 DRAIN FLEX CONNECTION	215	144004	R	4 0							
2	D 445 Q.0/5.6				13292-24RE							
DCW-FLX-3B1	DCW-TK-1B1 DRAIN FLEX CONNECTION	215	144004	R	4 0							
2	D 445 R.0/7.4				13292-24RE							
DCW-FLX-3B2	DCW-TK-1B2 DRAIN FLEX CONNECTION	215	144004	R	4 0							
2	D 445 Q.0/7.4				13292-24RE							
DCW-FLX-4	FLEX CONNECTION INTO DCW-P-2C	02		R	4 0							
2	D 447 P.8/5.0											
DCW-FLX-4A1	DCW-TK-1A1 SUPPLY LINE FLEX CONN	215		R	4 0							
2	D 445 R.0/5.6											
DCW-FLX-4A2	DCW-TK-1A2 SUPPLY LINE FLEX CONN	215		R	4 0							
2	D 445 Q.0/5.6											
DCW-FLX-4B1	DCW-TK-1B1-SUPPLY LINE FLEX CONN	215		R	4 0							
2	D 445 R.0/7.4											
DCW-FLX-4B2	DCW-TK-1B2 SUPPLY LINE FLEX CONN	215		R	4 0							
2	D 445 Q.0/7.4											
DCW-FLX-5	DCW-TK-2 DRAIN FLEX CONNECTION	215	144004	R	4 0							
2	D 447 P.8/5.0				P 13292-42							
DCW-FLX-5A1	DCW-P-2A1 SUCTION FLEX CONNECTION	53	144006	N	4 0							N
2	D 445 R.0/5.6	S407			P 8350434							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
DCW-FLX-5A2	DCW-P-2A2 SUCTION FLEX CONNECTION	53	144006	N	4 0							N
2	D 445 R.0/5.6	S407			P 8350434							
DCW-FLX-5B1	DCW-P-2B1 SUCTION FLEX CONNECTION	53	144006	N	4 0							N
2	D 445 R.0/7.4	S407			P 8350434							
DCW-FLX-5B2	DCW-P-2B2 SUCTION FLEX CONNECTION	53	144006	N	4 0							N
2	D 445 Q.0/7.4	S407			P 8350434							
DCW-FLX-6	DCW-P-3/4 DW FILL LINE FLEX CONN	215		R	4 0							
2	D 445 P.7/5.1											
DCW-FLX-6A1	DCW-P-1A1 SUCTION FLEX CONNECTION	53	144006	N	4 0							N
2	D 445 Q.0/5.6	S407			P 8350434							
DCW-FLX-6A2	DCW-P-1A2 SUCTION FLEX CONNECTION	53	144006	N	4 0							N
2	D 445 Q.0/5.6	S407			P 8350434							
DCW-FLX-6B1	DCW-P-1B1 SUCTION FLEX CONNECTION	53	144006	N	4 0							N
2	D 445 R.0/7.4	S407			P 8350434							
DCW-FLX-6B2	DCW-P-1B2 SUCTION FLEX CONNECTION	53	144006	N	4 0							N
2	D 445 Q.0/7.4	S407			P 8350434							
DCW-FLX-7	FLEX CONN FROM DCW-TK-1C	02		R	4 0							
2	D 445 P.8/5.0											
DCW-HX-1A1	DG-ENG-1A COOLING WATER HEAT EXCH	53	179001	N	4 0							N
2	D 445 R.0/5.6	S407			DWG 22029							
DCW-HX-1A2	DG-ENG-2A COOLING WATER HEAT EXCH	53	179001	N	4 0							N
2	D 445 R.0/5.6	S407			DWG 22029							
DCW-HX-1B1	DCW-ENG-1B COOLING WATERHEAT EXCH	53	179001	N	4 0							N
2	D 445 R.0/7.4	S407			DWG 22029							
DCW-HX-1B2	DG-ENG-2B COOLING WATER HEAT EXCH	53	179001	N	4 0							N
2	D 445 R.0/7.4	S407			DWG 22029							
DCW-HX-1C	HPCS DIES ENG COOLNG WATER HEAT EX	02	179003	R	4 0							
2	D 445 Q.5/5.0	6100			P 8394117							
DCW-HX-2C	LUBE OIL COOLER-HPCS DIESEL ENG	02	179005	R	4 0							
2	D 441 Q.5/5.0	6100			P 8225303							
DCW-TK-1A1	EXPANSION TANK FOR DIESEL ENG A1	53		N	4 0							N
2	D 445 R.0/5.6	S407										
DCW-TK-1A2	EXPANSION TANK FOR DIESEL ENG A2	53		N	4 0							N
2	D 445 Q.0/5.6	S407										
DCW-TK-1B1	EXPANSION TANK FOR DIESEL ENG B1	53		N	4 0							N
2	D 445 R.0/5.6	S407										
DCW-TK-1B2	EXPANSION TANK FOR DIESEL ENG B2	53		N	4 0							N
2	D 445 Q.0/7.4	S407										
DCW-TK-1C	HPCS GENERATOR WATER EXPAN TANK	02	343010	R	4 0							
2	D 445 Q.5/5.0				8365793							
DCW-TK-2A1	EXPANSION TANK FOR DIESEL ENG A1	53	343006	N	4 0							N
2	D 444 P.2/6.3	S407			21738							
DCW-TK-2A2	EXPANSION TANK FOR DIESEL ENG A2	53	343006	N	4 0							N
2	D 444 R.5/6.3	S407			21738							
DCW-TK-2B1	EXPANSION TANK FOR DIESEL ENG B1	53	343006	N	4 0							N
2	D 444 R.578.0	S407			21738							
DCW-TK-2B2	EXPANSION TANK FOR DIESEL ENG B2	53	343006	N	4 0							N
2	D 444 R.5/8.0	S407			21738							
DE-ES-1	EXH. SILENCER HPCS DIESEL ENGINE	02		R	4 0							

EQUIPMENT NO.	DESCRIPTION	CONTRACT	QID	QS	USE	TEST	ANL	F/O	C	FREQ	TM	HL
LV	PLANT LOCATION	MFG			MFG MODEL NO.							
2	D 460 P.0/5.3											
DE-ES-1A1	EXH SILENCER DIESEL DG-ENG-A1	53		N	4 0							N
2	D 460 P.0/6.5											
DE-ES-1A2	EXH SILENCER DIESEL ENG A2	53		N	4 0.							N
2	D 460 P.0/5.6											
DE-ES-1B1	EXH SILENCER DG-ENG-B1	53		N	4 0							N
2	D 460 P.0/8.2											
DE-ES-1B2	EXH SILENCER DG-ENG-B2	53		N	4 0.							N
2	D 460 P.0/7.6											
DE-F-1	HPCS ENGINE AIR INTAKE FILTER	02		R	4 0							
2	D 441 P.0/5.3				A							
DE-F-1A1	AIR INTAKE FILTER DG-ENG-A1	53	128001	N	4 0.							N
2	D 455 P.3/7.2	A220			D19912							
DE-F-1A2	AIR INTAKE FILTER DG-ENG-A2	53	128001	N	4 0							N
2	D 455 R.5/7.0	A220			D19912							
DE-F-1B1	AIR INTAKE FILTER DG-ENG-B1	53	128001	N	4 0							N
2	C 455 R.5/7.2	A220			D-19912							
DE-F-1B2	AIR INTAKE FILTER DG-ENG-B2	53	128001	N	4 0							N
2	D 455 R.5/7.2	A220			D-19912							
DE-FLX-1A1	DG-ENG-A1 EXHAUST, FLEXIBLE CONN	53		N	4 0							N
2	D 452 R.0/5.6											
DE-FLX-1A2	DG-ENG-A2 EXHAUST, FLEXIBLE CONN	53		N	4 0.							N
2	D 452 Q.0/5.6											
DE-FLX-1B1	DG-ENG-B1 EXHAUST, FLEXIBLE CONN	53		N	4 0							N
2	D 452 R.0/7.4											
DE-FLX-1B2	DG-ENG-B2 EXHAUST, FLEXIBLE CONN	53		N	4 0							N
2	D 452 Q.0/7.4											
DE-FLX-2A1	AIR IN TO DG-ENG-A1 FLEXIBLE CONN	53		N	4 0							N
2	D 451 R.0/5.6											
DE-FLX-2A2	AIR IN TO DG-ENG-A2 FLEXIBLE CONN	53		N	4 0							N
2	D 451 Q.0/5.6											
DE-FLX-2B1	AIR IN TO DG-ENG-B1 FLEXIBLE CONN	53		N	4 0							N
2	D 451 R.0/7.4											
DE-FLX-2B2	AIR IN TO DG-ENG-B2 FLEXIBLE CONN	53		N	4 0							N
2	D 451 Q.0/7.4											
DE-FLX-3	HPCS DIESEL EXHAUST FLEXIBLE CONN	02		R	4 0							
2	D 454 Q.5/5.0											
DE-FLX-4	HPCS DIESEL AIR INTAKE FLEX CONN	02		R	4 0							
2	D 451 Q.5/5.0											
DE-FLX-4A				R	4 0							
2	D 442 P.3/7.0											
DE-FLX-4B				R	4 0							
2	D 442 P.6/8.9											
DE-FLX-5	HPCS ENG.DRIVEN STARTER EXHAUST	215	144005	R	4 0							
2	D 444 R.5/8.1				12006-907							
DE-S-1	INTAKE SILENCER TO HPCS DIESEL ENG	02		R	4 0							
2	D 460 Q.5/5.0											
DLO-F-1A1	LUBE OIL FILTER INLET DCW-HX-2A1	53	128002	N	4 0							N
2	D 441 P.3/6.0	E160			23-800-140IR							

EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
DLO-F-1A2	2	LUBE OIL FILTER INLET DCW-HX-2A2	D 441 R.5/6.0	53	E160	128002	N	4 0	23-800-140IR							N
DLO-F-1B1	2	LUBE OIL FILTER INLET DCW-HX-2B1	C 441 P.3/8.0	53	E160	128002	N	4 0	23-800-140IR							N
DLO-F-1B2	2	LUBE OIL FILTER INLET DCW-HX-2B2	D 441 R.5/8.0	53	E160	128002	N	4 0	23-800-140IR							N
DLO-F-2A1	2	INLET FILTER DG-ENG-A1	D 441 P.3/6.0	53	E160	128002	N	4 0	23-800-140IR							N
DLO-F-2A2	2	INLET FILTER DG-ENG-A2	D 441 R.5/6.2	53	E160	128002	N	4 0	23-800-140IR							N
DLO-F-2B1	2	INLET FILTER DG-ENG-B1	D 441 P.3/8.0	53	E160	128002	N	4 0	23-800-140IR							N
DLO-F-2B2	2	TURBO CHARGER SUPPLY	D 441 R.5/8.0	53	E160	128002	N	4 0	23-800-140IR							N
DLO-F-3A1	2	FILTER INTAKE DG-ENG-A1	D 441 P.3/6.2	53	E160	128002	N	4 0	23-800-140IR							N
DLO-F-3A2	2	FILTER INTAKE DG-ENG-A2	D 441 R.5/6.0	53	E160	128002	N	4 0	23-800-140IR							N
DLO-F-3B1	2	FILTER INTAKE DG-ENG-B1	D 441 P.3/8.0	53	E160	128002	N	4 0	23-800-140IR							N
DLO-F-3B2	2	FILTER INTAKE DG-ENG-B2	D 441 R.5/8.0	53	E160	128002	N	4 0	23-800-140IR							N
DLO-FLT-3	2	LUBE OIL FILTER DCW-HX-2C	D 441 Q.0/5.0	02	6100	143001	R	4 0	P 8350459							
DLO-HX-2A1	2	DG 1A LUBE OIL COOLER ENG NO1	D 445 P.4/6.0	53				4 0								
DLO-HX-2A2	2	DG 1A LUBE OIL COOLER ENG NO2	D 445 R.6/6.0	53				4 0								
DLO-HX-2B1	2	DG 1B LUBE OIL COOLER ENG NO1	D 445 P.4/8.0	53				4 0								
DLO-HX-2B2	2	DG 1B LUBE OIL COOLER ENG NO2	D 445 R.6/8.0	53				4 0								
DLO-PV-1	2	HPCS SCAVENGING PUMP DLO-P-9 DISCH	D 441 Q.5/5.0	02			R	4 0								
DLO-RV-2	2	HPCS LUBE OIL FILTER DLO-FLT-3	D 441 Q.5/5.0	02			R	4 0								
DLO-ST-1A1	2	STRAINER INLET DLO-P-5A1	D 441 P.3/6.0	53	S407	319002	N	4 0	8320144							N
DLO-ST-1A2	2	STRAINER INLET DLO-P-5A2	D 441 R.5/6.2	53	S407	319002	N	4 0	P 8320144							N
DLO-ST-1B1	2	STRAINER INLET DLO-P-5B1	D 441 P.3/8.0	53	S407	319002	N	4 0	P 8320144							N
DLO-ST-1B2	2	STRAINER INLET FOR DLO-P-5B2	D 441 R.5/8.0	53	S407	319002	N	4 0	8320144							N
DLO-ST-2A1	2	STRAINER INLET DLO-P-1A1	D 441 P.3/6.2	53	S407	319003	N	4 0	P 8308586							N
DLO-ST-2A2	2	STRAINER INLET DLO-P-1A2	D 441 R.5/6.2	53	S407	319003	N	4 0	P 8308586							N
DLO-ST-2B1		STRAINER INLET DLO-P-1B1		53		319003	N	4 0								N

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT	MFG	QID	QS	USE TEST / MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
2	D 441 P.3/8.0		S407			P 8308586						
DLO-ST-2B2	STRAINER INLET DLO-P-1B2	53		319003	N	4 0						N
2	D 441 R.5/8.0		S407			P 8308586						
DLO-ST-3	HPCS AUX.LUBE OIL FILTER INLET	02			R	4 0						
2	D 441 Q.5/5.0											
DLO-ST-4A1	STRAINER DLC-P-2A1,3A1 DISCHARGE	53		319004	N	4 0						N
2	D 441 P.3/6.2		S407			P 8280951						
DLO-ST-4A2	STRAINER DLC-2A2,3A2 DISCHARGE	53		319004	N	4 0						N
2	D 441 R.5/6.2		S407			P 8280951						
DLO-ST-4B1	STRAINER DLC-P-2B1,3B1 DISCHARGE	53		319004	N	4 0						N
2	D 441 P.3/8.0		S407			P 8280951						
DLO-ST-4B2	STRAINER DLC-P-2B2,3B2 DISCHARGE	53		319004	N	4 0						N
2	D 441 R.5/8.0		S407			P 8280951						
DMA-CC-11	COOLING COIL INTAKE DMA-FN-11	67		037001	M	4 0	0.1			16		N
2	D 445 Q5/7		C780			6W24-116-5608T						
DMA-CC-12	COOLING COIL INTAKE DMA-FN-11	67		037001	M	4 0	0.1			16		N
2	D 455 P5/7		C780			6W24-116-5608T						
DMA-CC-21	COOLING UNIT INTAKE DMA-FN-21	67		037001	M	4 0	0 1			16		N
2	D 445 Q5/9		C780			6W24-116-5608T						
DMA-CC-22	COOLING COIL INTAKE DMA-FN-22	67		037001	M	4 0	0.1			16		N
2	D 455 P5/9		C780			6W24-116-5608T						
DMA-CC-31	COOLING COIL INTAKE DMA-FN-31	67		037001	M	4 0	0.1			16		N
2	D 460 Q5/4.2		C780			6W24-116-5608T						
DMA-CC-32	COOLING COIL INTAKE DMA-FN-32	67		037001	M	4 0	0 1			16		N
2	D 455 P5/4.2		C780			6W24-116-5608T						
DMA-CC-51	COOLING COIL INTAKE DMA-FN-51	67		037001	M	4 0	0.1			16		N
2	D 441 R.0/9.8		C780			M5-8040						
DMA-FL-51	PREFILTER INTAKE DMA-FN-51	67		142001	M	4 0	0 1			16		N
2	D 441 R.0/9.8		P295			A-76-1111						
DO-F-1A1	DUPLEX FILTER DO-P-3A1 DISCH.	53		128008	N	4 0						N
2	D 441 P.3/6.2		S407			P 8451532						
DO-F-1A2	DUPLEX FILTER DO-P-3A2 DISCH.	53		128008	N	4 0						N
2	D 441 R.5/6.2		S407			P 8451532						
DO-F-1B1	DUPLEX FILTER DO-P-3B1 DISCH.	53		128008	N	4 0						N
2	D 441 P.3/8.0		S407			P 8451532						
DO-F-1B2	DUPLEX FILTER DO-P-3B2 DISCH.	53		128008	N	4 0						N
2	D 441 R.5/8.0		S407			P 8451532						
DO-F-2A1	DUPLEX FILTER DO-P-4A1 DISCH.	53		128008	N	4 0						N
2	D 441 P.3/6.2		S407			P 8451532						
DO-F-2A2	DUPLEX FILTER DO-P-4A2 DISCH.	53		128008	N	4 0						N
2	D 441 R.5/6.2		S407			P 8451532						
DO-F-2B1	DUPLEX OUTPUT DO-P-4B1 DISCH.	53		128008	N	4 0						N
2	D 441 P.3/8.0		S407			P 8451582						
DO-F-2B2	DUPLEX FILTER DO-P-4B2 DISCH.	53		128008	N	4 0						N
2	D 441 R.5/8.0.		S407			P 8451532						
DO-F-3	DUPLEX FILTER DISCH. DO-TK-4	02			R	4 0						
2	D 441 Q.5/5.0											
DO-F-4	DUPLEX FILTER DISCH. DO-TK-4	02			R	4 0						
2	D 441 Q.5/5.0											

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
DO-FA-1A	DO-TK-3A VENT/FLAME ARRESTOR	215	129001	R	4 0							
2	D 473 R.6/7.3	P396			SP832BF							
DO-FA-1B	DO-TK-3B VENT/FLAME ARRESTOR	215	129001	R	4 0							
2	D 473 R.6/7.3	P396			SP832BF							
DO-FA-2	DO-TK-2 VENT/FLAME ARRESTOR	215		R	4 0							
2	D 446 K.0/1.7											
DO-FA-3A	DO-TK-1A VENT/FLAME ARRESTOR	215		R	4 0							
2	D 446 P.3/1.7											
DO-FA-3B	DO-TK-1B VENT/FLAME ARRESTOR	215		R	4 0							
2	D 446 Q.2/1.7											
DO-FA-4	FLAME ARRESTOR DO-TK-3C	215	129001	R	4 0							
2	D 473 R.6/3.9	P396			SP832BF							
DO-FCN-1A	DO-TK-1A FILL CONNECTION	215			4 0							
2	D 444 P/1.6											
DO-FCN-1B	DO-TK-1B FILL CONNECTION	215			4 0							
2	D 444 P/1.7											
DO-FCN-2	DO-TK-2 FILL CONNECTION	215			4 0							
2	D 444 P/1.7											
DO-FLX-1A1	FLEXIBLE CONNECTION DO-P-3A1 INLET	53	144001	N	4 0							N
2	D 441 P.2/6.2	S407			P 21267							
DO-FLX-1A2	FLEXIBLE CONN. DO-P-3A2 INLET	53	144001	N	4 0							N
2	D 441 R.6/6.2	S407			P 21267							
DO-FLX-1B1	FLEXIBLE CONN. DO-P-3B1 INLET	53	144001	N	4 0							N
2	D 441 P.2/8.0	S407			P 21267							
DO-FLX-1B2	FLEXIBLE CONN. DO-P-3B1 INLET	53	144001	N	4 0							N
2	D 441 R.6/8.0	S407			P 21267							
DO-FLX-2A1	FLEXIBLE CONN. DO-P-4A1 INLET	53	144001	N	4 0							N
2	D 441 R.2/6.2	S407			P 21267							
DO-FLX-2A2	FLEXIBLE CONN. DO-P-4A2 INLET	53	144001	N	4 0							N
2	D 441 R.6/6.2	S407			P 21267							
DO-FLX-2B1	FLEXIBLE CONN. DO-P-4B1 INLET	53	144001	N	4 0							N
2	D 441 R.2/8.0	S407			P 21267							
DO-FLX-2B2	FLEXIBLE CONN. DO-P-4B2 INLET	53	144001	N	4 0							N
2	D 441 R.6/8.0	S407			P 21267							
DO-FLX-3A1	FLEXIBLE CONN. RETURN TO DO-TK-3A	53	144001	N	4 0							N
2	D 441 R.2/6.2	S407			P 21266							
DO-FLX-3A2	FLEXIBLE CONN. RETURN TO DO-TK-3A	53	144001	N	4 0							N
2	D 441 R.6/6.2	S407			P 21266							
DO-FLX-3B1	FLEXIBLE CONN. RETURN TO DO-TK-3B	53	144001	N	4 0							N
2	D 441 P.2/8.0	S407			P 21266							
DO-FLX-3B2	FLEXIBLE CONN. RETURN TO DO-TK-3B	53	144001	N	4 0							N
2	D 441 P.6/8.0	S407			P 21266							
DO-FLX-4A1	FLEXIBLE CONN. RETURN TO DO-TK-3A	53	144001	N	4 0							N
2	D 441 R.2/6.2	S407			P 21266							
DO-FLX-4A2	FLEXIBLE CONN. RETURN TO DO-TK-3A	53	144001	N	4 0							N
2	D 441 R.6/6.2	S407			P 21266							
DO-FLX-4B1	FLEXIBLE CONN. RETURN TO DO-TK-3B	53	144001	N	4 0							N
2	D 441 P.2/8.0	S407			P 21266							
DO-FLX-4B2	FLEXIBLE CONN. RETURN TO DO-TK-3B	53	144001	N	4 0							N

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	D 441 R.6/8.0	S407			P 21266							
DO-FLX-5	FLEX CONN HPCS SUPPLY FROM DO-TK3C	215	144002	B	4 0		0 1			41		N
2	D 441 P.7/4.8	M270			7001-166-0183-W-RC-R							
DO-FLX-6	FLEX CONN HPCS SUPPLY FROM DO-TK3C	215	144002	B	4 0		0 1			41		N
2	D 441	M270			7001-166-0183-W-RC-R							
DO-FLX-7	FLEX CONN HPCS RETURN TO DO-TK-3C	215	144002	B	4 0		0 1			41		N
2	D 441	M270			7001-166-0183-W-RC-R							
DO-P-2	DO-TK-2 TRANSFER PUMP	38A			4 0							
2	D 441 Q.2/3.4	C676										
DO-RO-1A	DO-P-1A MIN. FLOW	215		Q	4 0							
2	D 434 P.3/3.6											
DO-RO-1B	DO-P-1B MIN. FLOW	215		Q	4 0							
2	D 436 Q.2/3.6											
DO-RO-2	DO-P-2 MIN.FLOW	215		Q	4 0							
2	D 436 R.0/3.6											
DO-RO-3A1	RETRN.TO DO-TK-3A FRM.INJECTOR HDR	53	286009	N	4 0							N
2	D 441 P.2/6.2	S407			81381							
DO-RO-3A2	RETRN.TO DO-TK-3A FRM.INJECTOR HDR	53	286009	N	4 0							N
2	D 441 R.6/6.2	S407			81381							
DO-RO-3B1	RETRN.TO DO-TK-3B FRM.INJECTOR HDR	53	286009	N	4 0							N
2	D 441 P.2/8.0	S407			81381							
DO-RO-3B2	RETRN.TO DO-TK-3B FRM.INJECTOR HDR	53	286009	N	4 0							N
2	D 441 R.6/8.0	S407			81381							
DO-RO-4A1	RETRN.TO DO-TK-3A FRM.INJECTOR HDR	53	286009	N	4 0							N
2	D 441 P.2/6.2	S407			81381							
DO-RO-4A2	RETRN.TO DO-TK-3A FRM.INJECTOR HDR	53	286009	N	4 0							N
2	D 441 R.6/6.2	S407			81381							
DO-RO-4B1	RETRN.TO DO-TK-3B FRM.INJECTOR HDR	53	286009	N	4 0							N
2	D 441 P.2/8.0	S407			81381							
DO-RO-4B2	RETRN.TO DO-TK-3B FRM.INJECTOR HDR	53	286009	N	4 0							N
2	D 441 R.6/8.0	S407			81381							
DO-RV-1A1	RELIEF DO-P-3A1 DISCH.	53	297010	N	4 0							N
2	D 441 Q.0/6.1	S407			P 8429687							
DO-RV-1A2	RELIEF DO-P-3A2 DISCH.	53	297010	N	4 0							N
2	D 441 R.0/6.1	S407			P 8429687							
DO-RV-1B1	RELIEF DO-P-3B1 DISCH.	53	297010	N	4 0							N
2	D 441 Q.0/7.8	S407			P 8429687							
DO-RV-1B2	RELIEF DO-P-3B2 DISCH.	53	297010	N	4 0							N
2	D 441 R.0/7.8	S407			P 8429687							
DO-RV-10A1	RELIEF DO-RC-3A1 BYPASS	53	297010	N	4 0							N
2	D 441 Q.0/6.1	S407			P 8429687							
DO-RV-10A2	RELIEF DO-RC-3A2 BYPASS	53	297010	N	4 0							N
2	D 441 R.0/6.1	S407			P 8429687							
DO-RV-10B1	RELIEF DO-RC-3B1 BYPASS	53	297010	N	4 0							N
2	D 441 Q.0/7.8	S407			P 8429687							
DO-RV-10B2	RELIEF DO-RC-3B2 BYPASS	53	297010	N	4 0							N
2	D 441 R.0/7.8	S407			P 8429687							
DO-RV-11	RELIEF DO-P-5 DISCH.	53		N	4 0							N
2	D 441 Q.5/5.0											

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
DO-RV-12 2	RELIEF DO-F-3 OUTLET D 441 Q.5/5.0	53		N	4 0							N
DO-RV-13 2	RELIEF HPCS INJECT.HDR PRESS.CONTR D 441 Q.5/5.0	53		N	4 0							N
DO-RV-2A1 2	RELIEF DO-P-4A1 DISCH. D 441 Q.0/6.1	53 S407	297010	N	4 0 P 8429687							N
DO-RV-2A2 2	RELIEF DO-P-4A2 DISCH. D 441 R.0/6.1	53 S407	297010	N	4 0 P 8429687							N
DO-RV-2B1 2	RELIEF DO-P-4B1 DISCH. D 441 Q.0/7.8	53 S407	297010	N	4 0 P 8429687							N
DO-RV-2B2 2	RELIEF DO-P-4B2 DISCH. D 441 R.0/7.8	53 S407	297010	N	4 0 P 8429687							N
DO-RV-3A1 2	RELIEF DO-F-1A1 INLET D 441 Q.0/6.1	53 S407	297011	N	4 0 P 8432311							N
DO-RV-3A2 2	RELIEF DO-F-1A2 INLET D 441 R.0/6.1	53 S407	297011	N	4 0 P 8432311							N
DO-RV-3B1 2	RELIEF DO-F-1B1 INLET D 441 Q.0/7.8	53 S407	297011	N	4 0 P 8432311							N
DO-RV-3B2 2	RELIEF DO-F-1B2 INLET D 441 R.0/7.8	53 S407	297011	N	4 0 P 8432311							N
DO-RV-4A1 2	RELIEF DO-F-2A1 INLET D 441 Q.0/6.1	53 S407	297011	N	4 0 P 8432311							N
DO-RV-4A2 2	RELIEF DO-F-2A2 INLET D 441 R.0/6.1	53 S407	297011	N	4 0 P 8432311							N
DO-RV-4B1 2	RELIEF DO-F-2B1 INLET D 441 Q.0/7.8	53 S407	297011	N	4 0 P 8432311							N
DO-RV-4B2 2	RELIEF DO-F-2B2 INLET D 441 R.0/7.8	53 S407	297011	N	4 0 P 8432311							N
DO-RV-5A1 2	RELIEF DO-F-1A1 OUTLET D 441 Q.0/6.1	53 S407	297012	N	4 0 P 8432311							N
DO-RV-5A2 2	RELIEF DO-F-1A2 OUTLET D 441 R.6/6.2	53 S407	297012	N	4 0 2495-GPR-20							N
DO-RV-5B1 2	RELIEF DO-F-1B1 OUTLET D 441 P.2/8.0	53 S407	297012	N	4 0 P 2495-6PP-20							N
DO-RV-5B2 2	RELIEF DO-F-1B2 OUTLET D 441 R.0/7.8	53 S407	297012	N	4 0 2495-GPR-20.							N
DO-RV-7A1 2	RELIEF INJECTOR HDR DG-ENG-A1 D 441 P.2/6.2	53 S407	297013	N	4 0 P 2593-6P2							N
DO-RV-7A2 2	RELIEF INJECTOR HDR DG-ENG-A2 D 441 R.5/6.2	53 S407	297013	N	4 0 P 2593-6P2							N
DO-RV-7B1 2	RELIEF INJECTOR HDR DG-ENG-B1 D 441 P.2/8.0	53 S407	297013	N	4 0 P 2593-6P2							N
DO-RV-7B2 2	RELIEF INJECTOR HDR DG-ENG-B2 D 441 R.5/8.0	53 S407	297013	N	4 0 P 2593-6P2							N
DO-RV-8A1 2	RELIEF INJECTOR HDR DG-ENG-A1 D 441 P.2/6.2	53 S407	297013	N	4 0 P 2593-6P2							N
DO-RV-8A2 2	RELIEF INJECTOR HDR DG-ENG-A2 D 441 R.2/6.2	53 S407	297013	N	4 0 P 2593-6P2							N
DO-RV-8B1	RELIEF INJECTOR HDR DG-ENG-B1	53	297013	N	4 0							N

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2	D 441 Q.0/7.8	S407			P 2593-6P2							
DO-RV-8B2	RELIEF INJECTOR HDR DG-ENG-B2	53	297013	N	4 0							N
2	D 441 R.0/7.8	S407			P 2593-6P2							
DO-RV-9A1	RELIEF INJECTOR HDR DG-ENG-A1	53	297010	N	4 0							N
2	D 441 Q.0/6.1	S407			P 8429687							
DO-RV-9A2	RELIEF INJECTOR HDR DG-ENG-A2	53	297010	N	4 0							N
2	D 441 R.0/6.1	S407			P 8429687							
DO-RV-9B1	RELIEF INJECTOR HDR DG-ENG-B1	53	297010	N	4 0							N
2	D 441 Q.0/7.8	S407			P 8429687							
DO-RV-9B2	RELIEF INJECTOR HDR DG-ENG-B2	53	297010	N	4 0							N
2	D 441 R.0/7.8	S407			P 8429687							
DO-ST-1A1	FILTER INTAKE DO-P-3A1	53	319005	N	4 0							N
2	D 441 P.2/6.2	S407			P 8341983							
DO-ST-1A2	FILTER INTAKE DO-P-3A2	53	319005	N	4 0							N
2	D 441 R.5/6.2	S407			P 8341983							
DO-ST-1B1	STRAINER INTAKE DO-P-3B1	53	319005	N	4 0							N
2	D 441 P.2/8.0	S407			P 8341983							
DO-ST-1B2	STRAINER INTAKE DO-P-3B2	53	319005	N	4 0							N
2	D 441 R.5/8.0	S407			P 8341983							
DO-ST-2A1	FILTER INTAKE DO-P-4A	53	319005	N	4 0							N
2	D 441 P.2/6.2	S407			P 8341983							
DO-ST-2A2	STRAINER INTAKE DO-P-4A2	53	319005	N	4 0							N
2	D 441 P.5/6.2	S407			P 8341983							
DO-ST-2B1	STRAINER INTAKE DO-4B1	53	319005	N	4 0							N
2	D 441 P.2/8.0	S407			P 8341983							
DO-ST-2B2	STRAINER INTAKE DO-P-4B2	53	319005	N	4 0							N
2	D 441 P.5/8.0	S407			P 8341983							
DO-ST-3	STRAINER INTAKE DO-P-6	02		R	4 0							
2	D 441 Q.5/5.0											
DO-ST-4	STRAINER INTAKE DO-P-5	02		R	4 0							
2	D 441 Q.5/5.0											
DO-TK-1A	D O STORAGE TANK	24	343001	R	4 0							
2	D 431 P.3/3.6	H305										
DO-TK-1A+	DIESEL OIL STORAGE TANK 1A			R	4 0							
1	D 431 P.3/3.6											
DO-TK-1B	D O STORAGE TANK	24	343001	R	4 0							
2	D 431 Q.2/3.6	H305										
DO-TK-1B+	DIESEL OIL STORAGE TANK 1B			R	4 0							
1	D 431 Q.2/3.6											
DO-TK-2	DO STORAGE TANK HPCS (DG-ENG-1C)	24			4 0							
2	D 430 R/3.6	H305										
DO-TK-2+	DIESEL OIL STORAGE TANK (HPCS DG)				4 0							
1	D 430 R.0/3.6											
DO-TK-3A	D O DAY TANK	53	343002	N	4 0							N
2	D 441 R.2/7.2	R155			DWG D-75-615							
DO-TK-3A+	DIESEL OIL DAY TANK DG1				4 0							
1	D 441 R.2/7.2											
DO-TK-3B	D O DAY TANK	53	343002	N	4 0							N
2	D 441 R.2/9.2	R155			DWG D-75-615							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TK	HL
DO-TK-3B+	DIESEL OIL DAY TANK DG2				4 0							
1	D 441 R.2/9.2											
DO-TK-3C	HPCS D-G DAY TANK (SAME AS TK-4)	53	343002	N	4 0							N
2	D 441 R2/3.5	R155			DWG D-75-615							
DO-TK-3C+	DIESEL OIL DAY TANK HPCS DG				4 0							
1	D 441 R.2/3.5											
DOA-FL-11/1	INTAKE FILTER DIV I D-G ROOM	216		R	4 0							
2	D 455 R/9.3											
DOA-FL-11/2	INTAKE PREFILTER DIV I D-G ROOM	216		R	4 0							
2	D 455 R/9.3											
DOA-FL-21/1	INTAKE FILTER DIV II D-G ROOM	216		R	4 0.							
2	D 455 R/7.3											
DOA-FL-21/2	INTAKE PREFILTER DIV II D-G ROOM	216		R	4 0							
2	D 455 R/7.3											
DOA-FL-31/1	INTAKE FILTER HPCS D-G ROOM	216		R	4 0							
2	D 455 R/3.9											
DOA-FL-31/2	INTAKE PREFILTER HPCS D-G ROOM	216		R	4 0.							
2	D 455 R/3.9											
DSA-AR-1A	STARTING AIR RECEIVER SKID	02			4 0							
2	D 446	B504										
DSA-AR-1B	STARTING AIR RECEIVER SKID	02			4 0							
2	D 446	B504										
DSA-AR-1C	SPARE AIR RECEIVER FOR HPCS DG	02	019001	R	4 0							
2	D 446 P.2/4.2	B504										
DSA-AR-1C+	COIPCSITE TC DSA-AR-1C				4 0							
1	D 446 P.2/4.2											
DSA-AR-2C	AIR RECEIVER TO HPCS DG	02	019001	R	4 0							
2	D 446 P.2/4.2	B504										
DSA-AR-2C+	COIPCSITE TC DSA-AR-2C				4 0							
1	D 446 P.2/4.2											
DSA-FLX-1A	DSA-AR-1C TO HPCS DIESEL ENG	02		R	4 0							
2	D 442 Q.3/4.7											
DSA-FLX-1B	DSA-AR-2C TC HPCS DIESEL ENG	02			4 0							
2	D 442 Q.3/5											
DSA-FLX-2A1	AIR COMPRESSOR TO DIESEL ENG A1	53	144001	N	4 0							N
2	D 441 P.6/6.9	S407			21269							
DSA-FLX-2A2	AIR COMPRESSCR TO DIESEL ENG A2	53	144001	N	4 0							N
2	D 441 P.616.9	S407			21269							
DSA-FLX-2B1	AIR COMPRESSCR TO DIESEL ENG B1	53	144001	N	4 0							N
2	D 441 P.8/9.2	S407			21269							
DSA-FLX-2B2	AIR COMPRESSCR TC DIESEL ENG B2	53	144001	N	4 0							N
2	D 441 P.8/9.3	S407			21269							
DSA-FLX-3A1	AIR COMPRESSCR TO DIESEL ENG A1	53	144001	N	4 0							N
2	D 444 Q.4/6.3	S407			21269							
DSA-FLX-3A2	AIR COMPRESSOR TC DIESEL ENG A2	53.	144001	N	4 0.							N
2	D 444 Q.5/6.3	S407			21269							
DSA-FLX-3B1	AIR COMPRESSCR TC DIESEL ENG B1	53	144001	N	4 0							N
2	D 444 Q.4/9.2	S407			21269							
DSA-FLX-3B2	AIR COMPRESSCR TO DIESEL ENG B2	53	144001	N	4 0							N

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	D 444 Q.5/8.2	S407			21269							
DSA-FLX-4A	FLEX CONN DGIA TO TK1A/2A	53			4 0							
2	D 442 P.3/7											
DSA-FLX-4B	FLEX CONN DEIB TO TK1B/2B	53			4 0.							
2	D 442 P.6/8.9											
DSA-FLX-5A	FLEX CONN DGIA TO TK3A/4A	53			4 0							
2	D 442 P.3/7											
DSA-FLX-5B	FLEX CONN DEIB TO TK3B/4B	53			4 0							
2	D 442 P.6/9.1											
DSA-FLX-6A	FLEX CONN AIR COMPRESSOR DISCH	215			4 0							
2	D 443 P.6/9.1											
DSA-FLX-6B	FLEX CONN DEIC TO AR-2C	215			4 0.							
2	D 443 P.3/4.0											
DSA-RV-1B	RELIEF DSA-C-1B1	53	297014	N	4 0							N
2	D 444 P.4/7.3	S407			FIG 105C							
DSA-RV-10A	RELIEF DSA-TK-6A	53	297001	N	4 0							N
2	D 448 P.4/7.3	S407			55-S0-3/4X1							
DSA-RV-10B	RELIEF DSA-TK-6B	53	297001	N	4 0							N
2	D 448 P.4/9.2	S407			55-S0-3/4X1							
DSA-RV-11A	RELIEF DSA-TK-2A	53	297001	N	4 0							N
2	D 448 P.4/7.3	S407			55-S0-3/4X1							
DSA-RV-11B	RELIEF DSA-TK-2B	53	297001	N	4 0							N
2	D 448 P.4/9.2	S407			55-S0-3/4X1							
DSA-RV-12A	RELIEF DSA-TK-1A	53	297014	N	4 0							N
2	D 448 P.4/7.3	V052			FIG 105C							
DSA-RV-12B	RELIEF DSA-TK-1B	53	297001	N	4 0							N
2	D 448 P.4/9.2	S407			55-S0-3/4X1							
DSA-RV-13	RELIEF DSA-AR-1C	53		N	4 0.							N
2	D 448 P.2/3.9											
DSA-RV-14	RELIEF DSA-AR-2C	53		N	4 0.							N
2	D 448 P.2/3.9											
DSA-RV-2A	RELIEF DSA-C-1A1 DISCH	53	297014	N	4 0							N
2	D 444 P.4/7.3	S407			FIG 105C							
DSA-RV-2B	RELIEF DSA-C-1B1 DISCH	53	297014	N	4 0							N
2	D 444 P.4/9.2	S407			FIG 105C							
DSA-RV-3A	RELIEF DSA-TK-7A	53	297001	N	4 0							N
2	D 448 P.4/7.3	S407			55-S0-3/4X1							
DSA-RV-3B	RELIEF DSA-TK-7B	53	297001	N	4 0							N
2	D 448 P.4/9.2	S407			55-S0-3/4X1							
DSA-RV-4A	RELIEF DSA-TK-8A	53	297001	N	4 0							N
2	D 448 P.4/7.3	S407			55-S0-3/4X1							
DSA-RV-4B	RELIEF DSA-TK-8B	53	297001	N	4 0							N
2	D 448 P.4/9.2	V052			55-S0-3/4X1							
DSA-RV-5A	RELIEF DSA-TK-4A	53	297001	N	4 0							N
2	C 448 P.4/7.3	V052			55-S0-3/4X1							
DSA-RV-5B	RELIEF DSA-TK-4B	53	297001	N	4 0							N
2	D 448 P.4/9.2	V052			55-S0-3/4X1							
DSA-RV-6A	RELIEF DSA-TK-3A	53	297001	N	4 0							N
2	D 448 P.4/7.3	V052			55-S0-3/4X1							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT	MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
DSA-RV-6B	RELIEF DSA-TK-3B	53		297001	N	4 0							N
2	D 448 P.4/9.2		V052			55-SO-3/4X1							
DSA-RV-7A	RELIEF DSA-C-1A2 DISCH	53		297014	N	4 0							N
2	D 448 P.4/7.3		S407			FIG 105C							
DSA-RV-7B	RELIEF DSA-C-1B2 DISCH	53		297014	N	4 0							N
2	D 448 P.4/9.2		S407			FIG 105C							
DSA-RV-8A	RELIEF DSA-C-1A2 DISCH	53		297014	N	4 0							N
2	D 448 P.4/7.3		S407			FIG 105C							
DSA-RV-8B	RELIEF DSA-C-1B2 DISCH	53		297014	N	4 0							N
2	D 448 P.4/9.2		S407			FIG 105C							
DSA-RV-9A	RELIEF DSA-TK-5A	53		297001	N	4 0							N
2	D 448 P.4/7.3		V052			55-SO-3/4X1							
DSA-RV-9B	RELIEF DSA-TK-5B	53		297001	N	4 0							N
2	D 448 P.4/9.2		V052			55-SO-3/4X1							
DSA-TK-1A	DG-ENG-A1,A2 BKUP START AIR RECVER	53		343005	R	4 0							
2	D 447 P.9/7.3		M071			V 3024							
DSA-TK-1B	DG-ENG-A1,A2 BKUP START AIR RECVER	53		343005	R	4 0							
2	D 447 P.3/9.3		M071			V 3024							
DSA-TK-2A	DG-ENG-A1,A2 BKUP START AIR RECVER	53		343005	R	4 0							
2	D 447 P.7/7.3		M071			V 3034							
DSA-TK-2B	DG-ENG-B1,B2 BKUP START AIR RECVER	53		343005	R	4 0							
2	D 447 P.3/9.1		M071			V 3034							
DSA-TK-3A	DG-ENG A1,A2 STARTING AIR RECEIVER	53		343005	R	4 0							
2	D 447 P.4/7.3		M071			V 3024							
DSA-TK-3B	DG-ENG-B1,B2 STARTING AIR RECEIVER	53		343005	R	4 0							
2	D 447 P.3/8.9		M071			V 3024							
DSA-TK-4A	DG-ENG-A1,A2 STARTING AIR RECEIVER	53		343005	R	4 0							
2	D 447 P.3/7.2		M071			V 3024							
DSA-TK-4B	DG-ENG-B1,B2 STARTING AIR RECEIVER	53		343005	R	4 0							
2	D 447 P.3/8.7		M071			V 3024							
DSA-TK-5A	DG-ENG-A1,A2 BKUP START AIR RECVER	53		343005	R	4 0							
2	D 447 P.9/7.1		M071			V 3024							
DSA-TK-5B	DG-ENG-B1,B2 BKUP START AIR RECVER	53		343005	R	4 0							
2	D 447 P.5/9.3		M071			V 3024							
DSA-TK-6A	DG-ENG-A1,A2 BKUP START AIR RECVER	53		343005	R	4 0							
2	D 447 P.7/7.1		M071			V 3024							
DSA-TK-6B	DG-ENG-B1,B2 BKUP START AIR RECVER	53		343005	R	4 0							
2	D 447 P.5/9.1		M071			V 3024							
DSA-TK-7A	DG-ENG-A1,A2 STARTING AIR RECEIVER	53		343005	R	4 0							
2	D 447 P.4/7.1		M071			V 3024							
DSA-TK-7B	DG-ENG-B1,B2 STARTING AIR RECEIVER	53		343005	R	4 0							
2	D 447 P.5/8.9		M071			V 3024							
DSA-TK-8A	DG-ENG-A1,A2 STARTING AIR RECEIVER	53		343005	R	4 0							
2	D 447 P.2/7.1		M071			V 3024							
DSA-TK-8B	DG-ENG-B1,B2 STARTING AIR RECEIVER	53		343005	R	4 0							
2	D 447 P.3/8.7		M071			V 3024							
EDR-RO-1A	WEST RX BLDG DRAIN HDR ORIFICE	26			R	3 0							
2	R 525 K2/9.1												
EDR-RO-1B	EAST RX BLDG DRAIN HDR ORIFICE	26			R	3 0							

EQUIPMENT NO.	DESCRIPTION	CONTRACT	QID	QS	USE	TEST	ANL	F/O	C	FREQ	TM	HL
LV	PLANT LOCATION	MFG			MFG MODEL NO.							
2	R 525 L8/2.4											
EDR-RO-2	EDR-HX-2 INLET	26		R	3 0							
2	R 427 M.4/3.5				HT-51177							
EDR-RO-2A	WEST RX BLDG DRAIN HDR ORIFICE	26		R	3 0							
2	R 504 K2/9.4											
EDR-RO-2B	EAST RX BLDG DRAIN HDR ORIFICE	26		R	3 0							
2	R 503 L8/3.5											
EDR-RO-3A	WEST RX BLDG DRAIN HDR ORIFICE	26		R	3 0							
2	R 445 M.1/8.0											
EDR-RO-3B	EAST RX BLDG DRAIN HDR ORIFICE	26		R	3 0							
2	R 467 M.5/4.7											
FDR-RO-10A	RX BLDG 606 EL SOUTH WALL DRN HDR	206		Q	3 0							
2	R 575 N.7/8.3											
FDR-RO-10B	RX BLDG 606 EL DRAIN HDR	206		Q	3 0							
2	R 576 H.3/7.7											
FDR-RO-10C	RX BLDG 606 EL DRAIN HDR	206		Q	3 0							
2	R 576 H.3/4.3											
FDR-RO-10D	RX BLDG 606 EL DRAIN HDR	206		Q	3 0							
2	R 576 M.0/3.4											
FDR-RO-11A	RX BLDG 572 EL SOUTH WALL DRN HDR	206		Q	3 0							
2	R 557 N7/8											
FDR-RO-11B	RX BLDG 572 EL DRAIN HDR	206		Q	3 0							
2	R 551 H.3/3.7											
FDR-RO-11C	RX BLDG 572 EL DRAIN HDR	206		Q	3 0							
2	R 551 H.3/4.3											
FDR-RO-11D	RX BLDG 572 EL DRAIN HDR	206		Q	3 0							
2	R 551 M.0/3.4											
FDR-RO-12A	RX BLDG 548 EL SOUTH WALL DRN HDR	206		Q	3 0							
2	R 525 M4/9.3	A391										
FDR-RO-12B	RX BLDG 548 EL DRAIN HDR	206		Q	3 0							
2	R 531 H.3/7.7											
FDR-RO-12C	RX BLDG 548 EL DRAIN HDR	206		Q	3 0							
2	R 531 H.3/4.3											
FDR-RO-12D	RX BLDG 548 EL DRAIN HDR	206		Q	3 0							
2	R 531 M.0/3.4											
FDR-RO-13A	RX BLDG 522 EL DRAIN HDR	206		Q	3 0							
2	R 505 M.0/9.4											
FDR-RO-13B	RX BLDG 522 EL DRAIN HDR	206		Q	3 0							
2	R 505 J.0/9.4											
FDR-RO-13C	RX BLDG 522 EL DRAIN HDR	206		Q	3 0							
2	R 505 M.3/4.3											
FDR-RO-13D	RX BLDG 522 EL DRAIN HDR	206		Q	3 0							
2	R 505 M.0/3.4											
FDR-RO-14A	RX BLDG 501 EL DRAIN HDR	206		Q	3 0							
2	R 476 M.0/9.4											
FDR-RO-14B	RX BLDG 501 EL DRAIN HDR	206		Q	3 0							
2	R 476 J.0/9.4											
FDR-RO-14C	RX BLDG 501 EL DRAIN HDR	206		Q	3 0							
2	R 476 H.3/4.3											

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE	TEST / MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
FDR-RO-14D	RX.BLDG 501 EL DRAIN HDR	206		Q	3 0							
2	R 476 F.0/3.4											
FDR-RO-15A	RX BLDG 471 EL DRAIN HDR	206		Q	3 0							
2	R 445 M.0/9.4											
FDR-RO-15B	RX BLDG 471 EL DRAIN HDR	206		Q	3 0							
2	R 445 M.0/9.4											
FDR-RO-15C	RX BLDG 471 EL DRAIN HDR	206		Q	3 0							
2	R 445 H.3/4.3											
FDR-RO-15D	RX BLDG 471 EL DRAIN HDR	206		Q	3 0							
2	R 445 M.0/3.4											
FPC-FE-16	FUEL POOL RECIRC FLOW				2 3							
2												
FPC-HX-1A	FUEL POOL HEAT EXCHANGER 1A	26	179006	R	2 3							
2	R 548 K.8/9.0	S445				DWG 1-72-06-3135001						
FPC-HX-1B	FUEL POOL HEAT EXCHANGER 1B	26	179006	R	2 3							
2	R 548 L.2/9.0	S445				DWG 1-72-06-3135001						
FPC-RV-117A	FPC-HX-1A RELIEF VALVE	26	297002		2 3							
2	R 554 L.0/9.4	L265				LCT-11						
FPC-RV-117B	FPC-HX-1B RELIEF VALVE	26	297002		2 3							
2	R 554 L.0/9.4	L265				LCT-11						
FPC-ST-1A	FPC CIRC PUMP 1A INLET STRAINER	215			2 3							
2	R 551 L5/8.6					NO TAG						
FPC-ST-1B	FPC CIRC PUMP 1B INLET STRAINER	215			2 3							
2	R 551 L5/8.8					NO TAG						
FPC-TK-1A	SKIMMER SURGE TANK 1A	206		R	2 3							
2	R 572 K.2/6.8											
FPC-TK-1B	SKIMMER SURGE TANK 1B	206		R	2 3							
2	R 572 L.8/6.8											
HPCS-AC-5	AIR OPERATOR HPCS-V-5	69	018012	R	2 0							
2	C 548 231 D AZ	V085				DWG P2-2767-N-2						
HPCS-FE-7	HPCS-P-1 DISCH	02		M	1 0		0.0					N
2	R 445 L.9/3.5	D012					37153					
HPCS-PI-1	HPCS-P-1 SUCTION H22-P024	02	243001	R	2 0							
2	R 473 L.2/3.9	R290				613B						
HPCS-PI-16	HPCS-P-3 DISCH	58		R	2 0							
2	R 426 L.8/3.5	J035										
HPCS-PI-2	CCND-TK-1A,B RETURN LINE H22-P024	02	243001	R	2 0							
2	R 473 L.2/3.9	R290				613B						
HPCS-PX-1	LOCAL PRESS IND FOR HPCS-P-1 SUCT	215			2 0							
2	R 422											
HPCS-PX-2	LOCAL PRESS IND FOR HPCS-P-1 SUCT	215			2 0							
2	R 422											
HPCS-PX-3	LOCAL PRESS IND FOR HPCS-P-1 DISCH	215			2 0							
2	R 422											
HPCS-RC-1	MIN FLOW TO SUPPRESSION CHAMBER	215	286003	Q	2 0		0 1			99+		N
2	R 430 L.473.6	P175				DWG 556-30530						
HPCS-RC-2	HPCS-P-1 DISCH TO RX VESSEL	215		Q	2 0							
2	R 538 M.8/7.2	T035										
HPCS-RC-3	HPCS-P-3 MIN FLOW	215		Q	2 0							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 426 L.8/3.5											
HPCS-RC-4	HPCS-P-1 TEST LINE	215	286001	Q	2 0							
2	R 425 M.2/3.7	P175			NB# 255							
HPCS-RV-14	.75" X 1" RELIEF HPCS-P-3 SUCTION	215	297002	T	2 0		0 1			73		N
2	R 427 M.0/3.4	L265			LCT-20.							
HPCS-RV-35	1" X 2" RELIEF HPCS-P-3 DISCH	215	297003	T	2 0		0.1			99+		N
2	R 434 M.0/3.5	L265			D-700							
HPCS-ST-1	24" CONICAL STRAINER HPCS-P-1 SUCT	215	319000	R	2 0							
2	R 425 M.6/3.7	A510			NONE							
HPCS-ST-2	HPCS-P-1 SUCTION STRAINER	215		R	2 0							
2	C											
HPCS-ST-3	HPCS-P-1 SUCTION STRAINER	215		R	2 0							
2	C											
HPCS-TX-1	LOCAL TEMP IND FOR HPCS-P-1 SUCT	215	359001		2 0							
2	R 422				A-10402							
HY-F-A1/21	FILTER, 10 MICRON PUMP DISCHARGE	02835	128003	R	3 3							
2	R 522 M3/4.3	S067			TF50-1A10H-F-M5							
HY-F-A1/23	FILTER FULLERS EARTH	02835	128004	R	3 3							
2	R 522 M3/4.3	H193			F8-000-1							
HY-F-A1/37	FILTER SUMP VENT	02835	128005	R	3 3							
2	R 522 M3/4.3	B120			65AL							
HY-F-A2/21	FILTER, 10 MICRON PUMP DISCHARGE	02835	128003	R	3 3							
2	R 522 M3/4.3	S067			TF50-1A10H-F-M5							
HY-F-A2/23	FILTER FULLERS EARTH	82835	128004	R	3 3							
2	C 522 M3/4.3	H193			F8-000-1							
HY-F-A2/37	FILTER SUMP VENT	82835	128005	R	3 3							
2	R 522 M3/4.3	B120			65AL							
HY-F-B1/21	FILTER, 10 MICRON PUMP DISCHARGE	02835	128003	R	3 3							
2	R 522 J8/7.6	S067			TF50-1A10H-F-M5							
HY-F-B1/23	FILTER FULLERS EARTH	02835	128004	R	3 3							
2	R 522 J8/7.6	H193			F8-000-1							
HY-F-B1/37	FILTER SUMP VENT	02835	128005	R	3 3							
2	R 522 J8/7.6	B120			65AL							
HY-F-B2/21	FILTER, 10 MICRON PUMP DISCHARGE	02835	128003	R	3 3							
2	R 522 J8/7.6	S067			TF50-1A10H-F-M5							
HY-F-B2/23	FILTER FULLERS EARTH	02835	128004	R	3 3							
2	R 522 J8/7.6	H193			F8-000-1							
HY-F-B2/37	FILTER SUMP VENT	82835	128005	R	3 3							
2	R 522 J8/7.6	B120			65AL							
HY-FCN-A1/30	SUMP FILL CONNECTION	02835	132001	R	3 3							
2	R 522 M3/4.3	L152			FCS-537-W							
HY-FCN-A2/30	SUMP FILL CONNECTION	02835	132001	R	3 3							
2	R 522 M3/4.3	L152			FCS-537-W							
HY-FCN-B1/30	SUMP FILL CONNECTION	02835	132001	R	3 3							
2	R 522 J8/7.6	L152			FCS-537-W							
HY-FCN-B2/30	SUMP FILL CONNECTION	02835	132001	R	3 3							2
2	R 522 J8/7.6	L152			FCS-537-W							
HY-HX-A1/19	HEAT EXCHANGER	02835	179001	R	3 3							
2	C 522 M3/4.3	R403			71174,MOD.2.6SFA-27F							

EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
HY-HX-A2/19	2	HEAT EXCHANGER	C 522 M3/4.3	02B35	R403	179001	R	3 3	71174,MOD.2.6SFA-27F							
HY-HX-B1/19	2	HEAT EXCHANGER	R 522 J8/7.6	02B35	R403	179001	R	3 3	71174,MOD.2.6SFA-27F							
HY-HX-B2/19	2	HEAT EXCHANGER	R 522 J8/7.6	02B35	R403	179001	R	3 3	71174,MOD.2.6SFA-27F							
HY-ST-A1/22	2	PUMP SUCTION STRAINER	C 522 M3/4.3	02B35	M088	319001	R	3 3	120M100							
HY-ST-A2/22	2	PUMP SUCTION STRAINER	C 522 M3/4.3	02B35	M088	319001	R	3 3	120M100							
HY-ST-B1/22	2	PUMP SUCTION STRAINER	R 522 J8/7.6	02B35	M088	319001	R	3 3	120M100							
HY-ST-B2/22	2	PUMP SUCTION STRAINER	R 522 J8/7.6	02B35	M088	319001	R	3 3	120M100							
HY-TK-A1/20	2	ACCUMULATOR ON PUMP DISCHARGE	C 522 M3/4.3	02B35	6250	343004	R	3 3	A107-200-6							
HY-TK-A2/20	2	ACCUMULATOR ON PUMP DISCHARGE	C 522 M3/4.3	02B35	6250	343004	R	3 3	A107-200-6							
HY-TK-B1/20	2	ACCUMULATOR ON PUMP DISCHARGE	R 522 J8/7.6	02B35	6250	343004	R	3 3	A107-200-6							
HY-TK-B2/20	2	ACCUMULATOR ON PUMP DISCHARGE	R 522 J8/7.6	02B35	6250	343004	R	3 3	A107-200-6							
LD-FG-16	2	RHR-V-8 LEAK OFF FLOW GLASS	R 504 N./6.9	215	F120	135002		2 0	10E1207							
LD-FG-17A	2	RHR-V-42A LEAK OFF FLOW GLASS	R 526	215	F120	135002		2 0	10E1207							
LD-FG-17B	2	RHR-V-42B LEAK OFF FLOW GLASS	R 526 N.1/6.1	215	F120	135002		2 0	10E1207							
LD-FG-17C	2	RHR-V-42C LEAK OFF FLOW GLASS	R 526	215	F120			2 0	10E1207							
LD-FG-18A	2	RHR-V-53C LEAK OFF FLOW GLASS	R 526	215	F120	135002		2 0	10E1207							
LD-FG-18B	2	RHR-V-53B LEAK OFF FLOW GLASS	R 504 L.1/.4	215	F120	135002		2 0	10E1207							
LD-FG-5	2	RCIC-V-8 LCC-AL-	R 504 K.9/8.2	215	F120	135002		2 0	10E1207							
LD-FG-6	2	RCIC-V-13 LCC-AL-	R 549 K.8/6.7	215	F120	135002		2 0	10E1207							
LD-FG-8	2	RCIC-V-64 LCC-AL-	R	215	F120	135002		2 0	10E1207							
LD-FG-9	2	SIGHT GLASS RCIC-V-65	R	215	F120	135002		2 0	10E1207							
LPCS-AC-6	2	AIR OPERATOR LPCS-V-6	C 547 140 D A2 R17	E9	V085	018012	R	3 0	DWG P2-2767-N						P	
LPCS-FE-2	2	LPCS-P-1 DISCH	R 444 K.1/3.6		D012		M	2 0	37153		0.0					
LPCS-PI-1	2	LPCS-P-1 SUCTION	R 471 K.0/4.2	02	R290	243001	R	2 0	6138							
LPCS-PI-2		LPCS-P-1 DISCH H22-P001		02		243001	R	2 0								

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 471 K.0/4.2	R290			613B							
LPCS-PWS-1/1	PIPE WHIP RESTRAINT TYPE 1	90		R	2 0							
2	R 558 120 AZ 17 R											
LPCS-RO-1	6" MIN FLOW LPCS-P-1	215	286003	Q	2 0		0.1			99+		N
2	R 427 K.0/3.6	P175			DWG 556-30530							
LPCS-RO-2	16" LPCS-P-1 DISCH TO VESSEL	215		Q	2 0							
2	R 524 L.7/4.3	A510										
LPCS-RO-3	1.5" LPCS-P-2 MIN FLOW	215		Q	2 0							
2	R 428 J.8/3.7											
LPCS-RO-4	12." TEST LINE LPCS-P-1	215		Q	2 0							
2	R 451 J.8/3.8	P175										
LPCS-RV-18	1.5" X12" RELIEF LPCS-P-1 TO	215	297004	T	2 0		0.1			99+		N
2	R 528 L.8/4.1	L265			D-30F							
LPCS-RV-31	3/4" X 1" LPCS-P-2 SUCTION	215	297002	T	2 0		0.1			73		N
2	R 426 K.0/3.7	L265			LCT20							
LPCS-ST-1	24" CONICAL LPCS-P-1 SUCTION	215	319006	R	2 0							
2	R 425 K.7/3.7	A510			NONE							
LPCS-ST-2	LPCS-P-1 SUCTION STRAINER			R	2 0							
2	C 426 J7/3.5											
LPCS-ST-3	LPCS-P-1 SUCTION STRAINER			R	2 0							
2	C											
MS-CU-2	COND CHAMB VESSEL HEAD LEVEL	02B22	060001	B	1 0		0 1					
2	C	6082										
MS-CU-4A	COND CHAMB VESSEL FLANGE PRESSURE	02B22	060001	B	1 0		0 1				W	
2	C 571 340 D AZ R17	6080										
MS-CU-4B	COND CHAMB VESSEL FLANGE PRESSURE	02B22	060001	B	1 0		0 1				W	
2	C 571 200 D AZ R17	6080										
MS-CU-4C	COND CHAMB VESSEL FLANGE PRESSURE	02B22	060001	B	1 0		0 1				W	
2	C 571 167 D AZ R17	6080										
MS-CU-4D	COND CHAMB VESSEL FLANGE PRESSURE	02B22	060001	B	1 0		0 1				W	
2	C 571 20 D AZ R17	6080										
MS-CU-6A	COND CHAMB HI STEAM FLOW IN LINE A	02B22	060001	B	1 0		0 1				P	N
2	C 530 AZ 10 R20	6080			CLASS 1							
MS-CU-6B	COND CHAMB HI STEAM FLOW IN LINE B	02B22	060001	B	1 0		0 1				P	N
2	C 530 AZ 20 R20	6080			CLASS 1							
MS-CU-6C	COND CHAMB HI STEAM FLOW IN LINE C	02B22	060001	B	1 0		0 1				P	N
2	C 530 AZ 340 R20	6080			CLASS 1							
MS-CU-6D	COND CHAMB HI STEAM FLOW IN LINE D	02B22	060001	B	1 0		0 1				P	N
2	C 530 AZ 350 R20	6080			CLASS 1							
MS-CU-7A	COND CHAMB HI STEAM FLOW IN LINE A	02	060001	R	1 0						P	
2	C 530 AZ 10 R20	6080			CLASS 1							
MS-CU-7B	COND CHAMB HI STEAM FLOW IN LINE B	02	060001	R	1 0						P	
2	C 530 AZ 20 R20	6080			CLASS 1							
MS-CU-7C	COND CHAMB HI STEAM FLOW IN LINE C	02	060001	R	1 0						P	
2	C 530 AZ 340 R20	6080			CLASS 1							
MS-CU-7D	COND CHAMB HI STEAM FLOW IN LINE D	02	060001	R	1 0						P	
2	C 530 AZ 350 R20	6080			CLASS 1							
MS-CU-8A	COND CHAMB HI STEAM FLOW IN LINE A	02B22	060001	B	1 0		0 1				P	
2	C 530 AZ 10 R20	6080			CLASS 1							

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MS-CU-8B	COND CHAMB HI STEAM FLOW IN LINE B	02822	060001	B	1 0		0.1				P	
2	C 530 AZ 20 R20	6080			CLASS 1							
MS-CU-8C	COND CHAMB HI STEAM FLOW IN LINE D	02822	060001	B	1 0		0.1				P	
2	C 530 AZ 340 R20	6080			CLASS 1							
MS-CU-8D	COND CHAMB HI STEAM FLOW IN LINE D	02822	060001	B	1 0		0.1				P	
2	C 530 AZ 350 R20	6080			CLASS 1							
MS-CU-9A	COND CHAMB HI STEAM FLOW IN LINE A	02822	060001	B	1 0		0.1				P	N
2	C 530 AZ 10 R20	6080			CLASS 1							
MS-CU-9B	COND CHAMB HI STEAM FLOW IN LINE B	02822	060001	B	1 0		0.1				P	N
2	C 530 AZ 20 R20	6080			CLASS 1							
MS-CU-9C	COND CHAMB HI STEAM FLOW IN LINE 3	02822	060001	B	1 0		0.1				P	N
2	C 530 AZ 340 R20	6080			CLASS 1							
MS-CU-9D	COND CHAMB HI STEAM FLOW IN LINE D	02822	060001	B	1 0		0.1				P	N
2	C 530 AZ 350 R20	6080			CLASS 1							
MS-FE-5A	MAIN STM LINE A FLOW	02822	134003	Q	1 0		0.0					N
2	C 524 AZ 15 R25	A510			10505143 LINEA							
MS-FE-5B	MAIN STM LINE B FLOW	02822	134003	Q	1 0		0 0					N
2	C 524 AZ 25 R25	A510			10505143 LINEB							
MS-FE-5C	MAIN STM LINE C FLOW	02822	134003	Q	1 0		0.0					N
2	C 524 AZ 345 R25	A510			10505143 LINEC							
MS-FE-5D	MAIN STM LINE D FLOW	02822	134003	Q	1 0		0.0					N
2	C 524 AZ 330 R25	A510			10505143 LINED							
MS-RO-1	MS DRAIN RESTRICTION ORI	215	286002	Q	2 0		0 1					N
2	T 487 6.3/6.0				RM-P1088-11							
MS-RO-65	MS DRAIN RESTRICTION ORI	215	286002	Q	2 0		0 1					N
2	T 496 6.5/6.5				RM-P1088-12							
MS-RPV-3	REACTOR PRESSURE VESSEL	02813	288001	R	1 3							
2	C 547 AZ 0 R0	C172			T-45							
MS-RPV-3+	REACTOR PRESSURE VESSEL				1 3							
1	C 547 AZ 0 R0											
MS-TK-1A	ISOLATION AIR ACCUMULATOR (INNER)	215		R	1 0							
2	C 505 6 DEG AZ											
MS-TK-1B	ISOLATION VALVES AIR ACCUMULATOR (	215		R	1 0							
2	C 505 20 DEG AZ											
MS-TK-1C	ISOLATION VALVES AIR ACCUMULATOR (	215		R	1 0							
2	C 505 340 DEG AZ											
MS-TK-1D	ISOLATION AIR ACCUMULATOR (INNER)	215		R	1 0							
2	C 505 355 DEG AZ											
MS-TK-2A	ISOLATION VALVES AIR ACCUMULATOR (	215		R	1 0							
2	R 502 H.8/6.0											
MS-TK-2B	ISOLATION VALVES AIR ACCUMULATOR (	215		R	1 0							
2	R 502 H.8/6.0											
MS-TK-2C	ISOLATION VALVES AIR ACCUMULATOR (	215		R	1 0							
2	R 502 H.8/6.0											
MS-TK-2D	ISOLATION VALVES AIR ACCUMULATOR (	215		R	1 0							
2	R 502 H.2/6.0											
MS-TK-3M	MS-RV-4C ADS AIR ACCUM	215		R	1 0							
2	C											
MS-TK-3N	AIR ACCUMULATOR (ADS) FOR MS-RV-5C	215		R	1 0							

EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
	2		C 522													
MS-TK-3P	2	RELIEF VALVE AIR ACCUMU	C	215			R	1 0								
MS-TK-3R	2	AIR ACCUMULATOR (ADS) FOR MS-RV-4B	C 522	215			R	1 0								
MS-TK-3U	2	AIR ACCUMULATOR (ADS) FOR MS-RV-5B	C 522	215			R	1 0								
MS-TK-3V	2	AIR ACCUMULATOR (ADS) FOR MS-RV-3D	C 522	215			R	1 0								
MS-TK-4A	2	RELIEF VALVES AIR ACCUMU	C	215			M	1 0			0 1					Y
MS-TK-4B	2	RELIEF VALVES AIR ACCUMU	C	215			M	1 0			0 1					Y
MS-TK-4C	2	RELIEF VALVES AIR ACCUMULATOR (REV	C	215			M	1 0			0 1					Y
MS-TK-4D	2	RELIEF VALVES AIR ACCUMULATOR (REV	C	215			M	1 0			0 1					Y
MS-TK-4E	2	RELIEF VALVES AIR ACCUMU	C	215			M	1 0			0 1					Y
MS-TK-4F	2	RELIEF VALVES AIR ACCUMU	C	215			M	1 0			0 1					Y
MS-TK-4G	2	RELIEF VALVES AIR ACCUMULATOR	C	215			M	1 0			0 1					Y
MS-TK-4H	2	RELIEF VALVES AIR ACCUMU	C 522	215			R	1 0								
MS-TK-4J	2	RELIEF VALVES AIR ACCUMULATOR (REV	C	215			M	1 0			0 1					Y
MS-TK-4K	2	RELIEF VALVES AIR ACCUMU	C	215			M	1 0			0 1					Y
MS-TK-4L	2	RELIEF VALVES AIR ACCUMU	C	215			M	1 0			0 1					Y
MS-TK-4M	2	RELIEF VALVES AIR ACCUMU	C	215			M	1 0			0 1					Y
MS-TK-4N	2	RELIEF VALVES AIR ACCUMULATOR (REV	C	215			M	1 0			0 1					Y
MS-TK-4P	2	RELIEF VALVES AIR ACCUMULATOR (REV	C	215			M	1 0			0 1					Y
MS-TK-4R	2	RELIEF VALVES AIR ACCUMU	C	215			M	1 0			0 1					Y
MS-TK-4S	2	RELIEF VALVES AIR ACCUMU	C	215			M	1 0			0 1					Y
MS-TK-4U	2	RELIEF VALVES AIR ACCUMULATOR (REV	C	215			M	1 0			0 1					Y
MS-TK-4V	2	RELIEF VALVES AIR ACCUMU	C	215			M	1 0			0 1					Y
MSLC-F-1	2	2" AIR INLET FILTER MSLC-V-11	R 471	215				2 0								
MSLC-F-2	2	2" AIR INLET FILTER MSLC-V-12	R 501	215				2 0								

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HSLC-FE-11 2	FROM AIR INLET R	215			2 0						
HSLC-FE-26 2	FROM AIR INLET TO MSLC-FN-2 R	218			2 0						
MSLC-PI-1 2	LOW PRESSURE MANIFOLD IR-73 R 522 H.4/4.2	220 A501			2 0 T1279						
HSLC-PI-2 2	TO MSLC-FN-2 IR-74 R 522 H.4/7.1	220 A501			2 0 T1279						
NSSE-EQ-1B 1	FUEL PREPARATION MACHINES R 601	2 6080	120004	R	3 0 238X759G001						
NSSE-EQ-10A 1	IN VESSEL RACKS R 601	2 6080	120001	M	3 0 729E269G015	0 2			10		N
NSSE-EQ-10B 1	IN VESSEL RACKS R 601	2 6080	120001	M	3 0 729E269G015	0.2			10		N
NSSE-EQ-11A 1	DEFECT FUEL STORAGE CONTAINER R 601	2 6080	120002	M	3 0 117C2072G004	0 0					Y
NSSE-EQ-11B 1	DEFECT FUEL STORAGE CONTAINER R 601	2 6080	120002	M	3 0 117C2072G004	0 0					Y
NSSE-EQ-11C 1	DEFECT FUEL STORAGE CONTAINER R 601	2 6080	120002	M	3 0 117C2072G004	0 0					Y
NSSE-EQ-11D 1	DEFECT FUEL STORAGE CONTAINER R 601	2 6080	120002	M	3 0 117C2072G004	0.0					Y
NSSE-EQ-11E 1	DEFECT FUEL STORAGE CONTAINER R 601	2 6080	120002	M	3 0 117C2072G004	0.0					Y
NSSE-EQ-11F 1	DEFECT FUEL STORAGE CONTAINER R 601	2 6080	120002	M	3 0 117C2072G004	0.0					Y
NSSE-EQ-11G 1	DEFECT FUEL STORAGE CONTAINER R 601	2 6080	120002	M	3 0 117C2072G004	0.0					Y
NSSE-EQ-11H 1	DEFECT FUEL STORAGE CONTAINER R 601	2 6080	120002	M	3 0 117C2072G004	0.0					Y
NSSE-EQ-14 1	DRYER AND SEPARATOR SLING R 606	2 6080	120006	R	3 0 767E438P001						
NSSE-EQ-15 1	HEAD STRONG BACK R 606	2 6080	120006	R	3 0 767E187P001						
NSSE-EQ-2 1	NEW FUEL INSPECTION STAND R 606	2 6080		R	3 0						
NSSE-EQ-22 1	CRD GUIDE TUBE GRAPPLE R 606	2 6080	120003	R	3 0 148F478G001						
NSSE-EQ-23A 1	MAIN STEAM LINE PLUG R 601	2 6080	120005	R	3 0 731E860G027						
NSSE-EQ-23B 1	MAIN STEAM LINE RUG R 601	2 6080	120005	R	3 0 731E860G027						
NSSE-EQ-23C 1	MAIN STEAM LINE PLUG R 601	2 6080	120005	R	3 0 731E860G027						
NSSE-EQ-23D 1	MAIN STEAM LINE PLUG R 601	2 6080	120005	R	3 0 731E860G027						
PI-EFCX-106 2	1" EXCESS FLOW RPV SENSING R 570 J.5/5.8	220 D232	108001	R	2 3 P 12583					P	
PI-EFCX-107	1* EXCESS FLOW RPV SENSING	220	108001	R	2 3					P	

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	2		R 563 J.5/5.8		D232				P 12583							
PI-EFCX-108	2	1" EXCESS FLOW RPV SENSING	R 550 J5/5.8	220	D232	108001	R	2 3	P 12583						P	
PI-EFCX-109	2	1" EXCESS FLOW RPV SENSING	R 570 M.5/6.4	220	D232	108001	R	2 3	P 12583						P	
PI-EFCX-110	2	1" EXCESS FLOW CHECK RPV SENSING	R 563 M.5/6.4	220	D232	108001	R	2 3	P 12583						P	
PI-EFCX-111	2	1" EXCESS FLOW CHECK RPV SENSING	R 550 M.5/6.4	220	D232	108001	R	2 3	P 12583						P	
PI-EFCX-112	2	1" EXCESS FLOW CHECK RPV SENSING	R 570 M.3/5.2	220	D232	108001	R	2 3	P 12583						P	
PI-EFCX-113	2	1" EXCESS FLOW CHECK RPV SENSING	R 550 M.3/5.2	220	D232	108001	R	2 3	P 12583						P	
PI-EFCX-114	2	1" EXCESS FLOW CHECK RPV SENSING	R 570 J.7/6.5	220	D232	108001	R	2 3	P 12583						P	
PI-EFCX-115	2	1" EXCESS FLOW CHECK RPV SENSING	R 550 J.7/6.5	220	D232	108001	R	2 3	P 12583						P	
PI-EFCX-18A	2	1" EXCESS FLO CHECK A STEAM LINE P:	R 501 0.D AZ	220	D232		R	2 3	P 12583							
PI-EFCX-18B	2	1" EXCESS FLO CHECK B STEAM LINE B	R 501 0 D AZ	220	D232		R	2 3	P 12583							
PI-EFCX-18C	2	1" EXCESS FLO CHECK C STEAM LINE P	R 501 0 D AZ	220	D232		R	2 3	P 12583							
PI-EFCX-18D	2	1" EXCESS FLO CHECK D STEAM LINE P	R 501 0 D AZ	220	D232		R	2 3	P 12583							
PI-EFCX-29D	2	1" EXCESS FLOW CHECK VALVE PT-6	R 536 J.0/4.1	220	D232			2 3	P 12583							
PI-EFCX-29F	2	1" EXCESS FLOW CHECK VALVE PT-2	R 536 J.0/4.1	220	D232		R	2 3	P 12583							
PI-EFCX-30A	2	1" EXCESS FLOW CHECK VALVE PT-5	M.0/7.7	220	D232			2 3	P 12583							
PI-EFCX-30F	2	1" EXCESS FLOW CHECK VALVE PT-1	R 536 M.0/7.7	220	D232		R	2 3	P 12583							
PI-EFCX-37E	2	1" EXCESS FLOW CHK RHR DELTA PRESS	R 536 K/7.7	220	D232	108001	R	2 3	P 12583						P	
PI-EFCX-37F	2	1" EXCESS FLOW CHK RHR DELTA PRESS	R 536 K/7.7	220	D232	108001	R	2 3	P 12583						P	
PI-EFCX-38A	2	1" EXCESS FLOW CHK HIGH SIDE FLOW	R 514 105 C AZ	220	D232	108001	R	2 3	P 12583						P	
PI-EFCX-38B	2	1" EXCESS FLCW CHK LCW SIDE FLOW	R 514 105 D AZ	220	D232	108001	R	2 3	P 12583						P	
PI-EFCX-38C	2	3/4" EXCESS FLOW CHECK FOR DPIS-7B	R 514 105 C AZ	220	D232	108001	R	2 3	P 12583							
PI-EFCX-38D	2	3/4" EXCESS FLOW CHECK FOR DPIS-7B	R 514 105 D AZ	220	D232	108001	R	2 3	P 12583							
PI-EFCX-38E	2	1" EXCESS FLOW CHECK FOR DPIS-13B	R 514 105 C AZ	220	D232	108001	R	2 3	P 12583							
PI-EFCX-38F	2	1" EXCESS FLOW CHECK FOR DPIS-13B	R 514 105 D AZ	220	D232	108001	R	2 3	P 12583							

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PI-EFCX-39A	1" EXCESS FLOW HI SIDE FLOW	220	108001	R	2 3						P	
2	R 514 105 D AZ	D232			P 12583							
PI-EFCX-39B	1" EXCESS FLOW LOW SIDE FLOW	220	108001	R	2 3						P	
2	R 514 320 D AZ	D232			P 12583							
PI-EFCX-39D	1" EXCESS FLOW RHR DELTA PRESSURE	220	108001	R	2 3						P	
2	R 514 320 D AZ	D232			P 12583							
PI-EFCX-39E	1" EXCESS FLOW RHR DELTA PRESSURE	220	108001	R	2 3						P	
2	R 514 320 D AZ	D232			P 12583							
PI-EFCX-40C	1" EXCESS FLOW RECIRC LOOP A F	220		R	2 3							
2	R 514				P 12583							
PI-EFCX-40D	1" EXCESS FLOW RECIRC LOOP A F	220	108001	R	2 3						P	
2	R 514 110 D AZ	D232			P 12583							
PI-EFCX-40E	1 EXCESS FLOW RRC-P-1A NO. 2	220	108001	R	2 3							
2	R 514 110 D AZ	D232			R 12583							
PI-EFCX-40F	1" EXCESS FLOW RRC-P-1A NO. 1	220	108001	R	2 3						P	
2	R 514 110 D AZ	D232			P 12583							
PI-EFCX-41C	1" EXCESS FLOW RRC-P-1B D/P	220	108001	R	2 3						P	
2	R 514 315 D AZ	D232			P 12583							
PI-EFCX-41D	1" EXCESS FLOW RRC-P-1B D/P	220	108001	R	2 3						P	
2	R 514 315 D AZ	D232			P 12583							
PI-EFCX-41E	1" EXCESS FLOW RRC-P-1B NO. 2	220	108001	R	2 3						P	
2	R 514 315 D AZ	D232			P 12583							
PI-EFCX-41F	1" EXCESS FLOW RRC-P-1B NO. 1	220	108001	R	2 3						P	
2	R 514 315 D AZ	D232			12583							
PI-EFCX-42A	1" EXCESS FLOW HI SIDE FLOW	220		R	2 3							
2	R 514 95 D AZ	D232			P 12583							
PI-EFCX-42B	1" EXCESS FLOW LOW SIDE FLOW	220	108001	R	2 3						P	
2	R 514 95 D AZ	D232			P 12583							
PI-EFCX-42F	1" EXCESS FLOW RPV SENSING	220			2 3							
2		D232			P 12583							
PI-EFCX-44AA	1" EXCESS FLOW JET PUMP NO.11	220	108001	R	2 3						P	
2	R 506 322 D AZ	D232			P 12583							
PI-EFCX-44AB	1" EXCESS FLOW JET PUMP NO. 12	220	108001	R	2 3						P	
2	R 506 322 D AZ	D232			P 12583							
PI-EFCX-44AC	1" EXCESS FLOW JET PUMP NO. 13	220	108001	R	2 3						P	
2	R 506 322 D AZ	D232			P 12583							
PI-EFCX-44AD	1" EXCESS FLOW JET PUMP NO. 14	220	108001	R	2 3						P	
2	R 506 322 D AZ	D232			P 12583							
PI-EFCX-44AE	1" EXCESS FLOW JET PUMP NO. 15	220	108001	R	2 3						P	
2	R 506 322 D AZ	D232			P 12583							
PI-EFCX-44AF	1" EXCESS FLOW JET PUMP NO. 16	220	108001	R	2 3						P	
2	R 506 322 D AZ	D232			P 12583							
PI-EFCX-44AG	1" EXCESS FLOW JET PUMP NO. 17	220	108001	R	2 3						P	
2	R 506 322 D AZ	D232			P 12583							
PI-EFCX-44AH	1" EXCESS FLOW JET PUMP NO. 18	220	108001	R	2 3						P	
2	R 506 322 D AZ	D232			12583							
PI-EFCX-44AJ	1" EXCESS FLOW JET PUMP NO. 19	220	108001	R	2 3						P	
2	R 506 322 D AZ	D232			12583							
PI-EFCX-44AK	1" EXCESS FLOW JET PUMP NO. 2	220	108001	R	2 3						P	

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 506 322 C AZ	D232			12583							
PI-EFCX-44AL	1" EXCESS FLOW JET PUMP NO. 19	220	108001	R	2 3						P	
2	R 506 322 C AZ	D232			12583							
PI-EFCX-44AM	1" EXCESS FLOW JET PUMP NO. 20	220	108001	R	2 3						P	
2	R 506 322 C AZ	D232			12583							
PI-EFCX-44BA	1" EXCESS FLOW JET PUMP NO. 1	220	108001	R	2 3						P	
2	R 506 140 D AZ	D232			12583							
PI-EFCX-44BB	1" EXCESS FLOW JET PUMP NO. 2	220	108001	R	2 3						P	
2	R 506 140 C AZ	D232			12583							
PI-EFCX-44BC	1" EXCESS FLOW JET PUMP NO. 3	220	108001	R	2 3						P	
2	R 506 140 D AZ	D232			12583							
PI-EFCX-44BD	1" EXCESS FLOW JET PUMP NO. 4	220	108001	R	2 3						P	
2	R 506 140 C AZ	D232			12583							
PI-EFCX-44BE	1" EXCESS FLOW JET PUMP NO. 5	220	108001	R	2 3						P	
2	R 506 140 D AZ	D232			12583							
PI-EFCX-44BF	1" EXCESS FLOW JET PUMP NO. 6	220	108001	R	2 3						P	
2	R 506 140 C AZ	D232			12583							
PI-EFCX-44BG	1" EXCESS FLOW JET PUMP NO. 7	220	108001	R	2 3						P	
2	R 506 140 D AZ	D232			12583							
PI-EFCX-44BH	1" EXCESS FLOW JET PUMP NO. 8	220	108001	R	2 3						P	
2	R 506 140 D AZ	D232			12583							
PI-EFCX-44BJ	1" EXCESS FLOW JET PUMP NO. 9	220	108001	R	2 3						P	
2	R 506 140 C AZ	D232			12583							
PI-EFCX-44BK	1" EXCESS FLOW JET PUMP NO. 10	220	108001	R	2 3						P	
2	R 506 140 D AZ	D232			P 12583							
PI-EFCX-44BL	1" EXCESS FLOW JET PUMP NO. 9	220	108001	R	2 3						P	
2	R 506 140 C AZ	D232			P 12583							
PI-EFCX-44BM	1" EXCESS FLOW JET PUMP NO. 10.	220	108001	R	2 3						P	
2	R 506 140 D AZ	D232			P 12583							
PI-EFCX-61A	1" EXCESS FLOW RECIRC LOOP A F	220	108001	R	2 3						P	
2	R 514 140 C AZ	D232			P 12583							
PI-EFCX-61B	1" EXCESS FLOW RECIRC LOOP A F	220		R	2 3							
2	R 514				P 12583							
PI-EFCX-61C	1" EXCESS FLOW RPV SENSING	220			2 3							
2		D232			P 12583							
PI-EFCX-62B	1" EXCESS FLOW CHECK RPV SENSING	220			2 3							
2		D232			P 12583							
PI-EFCX-62C		220			2 3							
2	R 514 J.5/7.5	D232			P 12583							
PI-EFCX-62D		220			2 3							
2	R 514 J.5/7.5	D232			P 12583							
PI-EFCX-69A	1" EXCESS FLOW HI SIDE FLOW	220	108001	R	2 3							
2	R 514 325 C AZ	D232			P 12583							
PI-EFCX-69B	1" EXCESS FLOW LOW SIDE FLOW	220	108001	R	2 3							
2	R 514 325 D AZ	D232			P 12583							
PI-EFCX-69E		220			2 3							
2	R 514 J.2/7.2	D232			P 12583							
PI-EFCX-69F	1" EXCESS FLOW CHECK RPV SENSING	220			2 3							
2		D232			P 12583							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	TM
PI-EFCX-70A	1" EXCESS FLOW HI SIDE FLOW	220	108001	R	2 3		P
2	R 514 100 D AZ	D232			P 12583		
PI-EFCX-70B	1" EXCESS FLOW LOW SIDE FLOW	220	108001	R	2 3		P
2	R 514 100 C AZ	D232			P 12583		
PI-EFCX-70C	1" EXCESS FLOW HI SIDE FLOW	220	108001	R	2 3		P
2	R 514 100 D AZ	D232			P 12583		
PI-EFCX-70D	1" EXCESS FLOW LOW SIDE FLOW	220	108001	R	2 3		P
2	R 514 100 D AZ	D232			P 12583		
PI-EFCX-70E	1" EXCESS FLOW RRC-P-1A D/P	220	108001	R	2 3		P
2	R 514 100 C AZ	D232			P 12583		
PI-EFCX-70F	1" EXCESS FLOW RRC-P-1A D/P	220	108001	R	2 3		P
2	R 514 100 D AZ	D232			P 12583		
PI-EFCX-71A	1" EXCESS FLOW HI SIDE FLOW	220	108001	R	2 3		P
2	R 514 300 C AZ	D232			P 12583		
PI-EFCX-71B	1" EXCESS FLOW LOW SIDE FLOW	220	108001	R	2 3		P
2	R 514 300 D AZ	D232			P 12583		
PI-EFCX-71C	1" EXCESS FLOW CHECK FOR DPIS-7A	220	108001	R	2 3		
2	R 514 300 D AZ	D232			P 12583		
PI-EFCX-71D	1" EXCESS FLOW CHECK FOR DPIS-7A	220	108001	R	2 3		
2	R 514 300 D AZ	D232			P 12583		
PI-EFCX-71E	3/4" EXCESS FLO CHECK FOR DPIS-13A	220	108001	R	2 3		
2	R 514 300 C AZ	D232			P 12583		
PI-EFCX-71F	EXCESS FLO CK FOR INSTR PENE X-71F	220		R	2 3		
2	R 514 300 D AZ	D232			P 12583		
PI-EFCX-72A	1" EXCESS FLOW RPV STEAM DOME	220	108001	R	2 3		
2	R 538 M.8/6.3	D232			P 12583		
PI-EFCX-72B		220			2 3		
2	R 536 M.8/6.2	D232			P 12583		
PI-EFCX-73A	1" EXCESS FLOW HPCS DELTA PRESSURE	220	108001	R	2 3		
2	R 538 J.7/4.8	D232			P 12583		
PI-EFCX-73C	1" EXCESS FLOW CHECK VALVE	220			2 3		
2	R 536 J.7/4.7	D232			P 12583		
PI-EFCX-74A	1" EXCESS FLOW PRESSURE BELOW	220	108001	R	2 3		P
2	R 506 325 C AZ	D232			P 12583		
PI-EFCX-74B	1" EXCESS FLOW TO DPIS-E12-NC	220	108001	R	2 3		P
2	R 506 325 C AZ	D232			P 12583		
PI-EFCX-74E	1" EXCESS FLOW RRC DELTA PRESSURE	220	108001	R	2 3		P
2	R 506 325 C AZ	D232			P 12583		
PI-EFCX-74F	1" EXCESS FLOW RRC DELTA PRESSURE	220	108001	R	2 3		P
2	R 506 325 C AZ	D232			P 12583		
PI-EFCX-75A	1" EXCESS FLOW PRESSURE BELOW	220	108001	R	2 3		P
2	R 506 325 C AZ	D232			P 12583		
PI-EFCX-75B	1" EXCESS FLOW PRESSURE ABOVE	220	108001	R	2 3		P
2	R 506 325 C AZ	D232			P 12583		
PI-EFCX-75C	1" EXCESS FLOW RECIRC LOOP B F	220	108001	R	2 3		P
2	R 506 325 C AZ	D232			P 12583		
PI-EFCX-75D	1" EXCESS FLOW RECIRC LOOP B F	220	108001	R	2 3		P
2	R 506 325 C AZ	D232			P 12583		
PI-EFCX-75E	1" EXCESS FLOW RECIRC LOOP B F	220	108001	R	2 3		P

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 506 325 D AZ	D232			P 12583							
PI-EFCX-75F	1" EXCESS FLOW RECIRC LOOP B.F	220	108001	R	2 3						P	
2	R 506 325 D AZ	D232			P 12583							
PI-EFCX-78B	1" EXCESS FLOW RHR DELTA PRESSURE	220	108001	R	2 3						P	
2	R 506 133 C AZ	D232			P 12583							
PI-EFCX-78C	1" EXCESS FLOW RWCU FLOW TRAN	220	108001	R	2 3						P	
2	R 506 133 D AZ	D232			P 12583							
PI-EFCX-78F	1" EXCESS FLOW RRC-P-1A SUCTION	220		R	2 3							
2	R 522	D232			P 12583							
PI-EFCX-79A	1" EXCESS FLOW RWCU FLOW TRAN	220	108001	R	2 3							
2	R 534 M.0/4.6	D232			P 12583							
PI-EFCX-79B	1" EXCESS FLOW RWCU FLOW TRAN	220	108001	R	2 3							
2	R 533 M.0/4.6	D232			P 12583							
PI-EFCX-82B	1" EXCESS FLOW CHECK VALVE PT-3	220		R	2 3							
2	R 479 230.D AZ	D232			P 12583							
PI-EFCX-84A	1" EXCESS FLOW VALVE PT-4	220		R	2 3							
2	R 479 40.D AZ	D232			P 12583							
PI-EFCX-86A	1" EXCESS FLOW VALVE LT-1	220		R	2 3							
2	R 471.45 D AZ	D232			P 12583							
PI-EFCX-86B	1" EXCESS FLOW VALVE LT-1	220	108001	R	2 3							
2	R 462 45 D AZ	D232			P 12583							
PI-EFCX-87A	1" EXCESS FLOW VALVE LT-2	220		R	2 3							
2	R 471 245 C AZ	D232			P 12583							
PI-EFCX-87B	1" EXCESS FLOW VALVE LT-2	220		R	2 3							
2	R 471 245 C AZ	D232			P 12583							
PI-RO-X106	PENETRATION X-106 FLOW LIMITER	220		R	2 3							
2	C 571 AZ 20 R18											
PI-RO-X107	PENETRATION X-107 FLOW LIMITER	220		R	2 3							
2	C 564 AZ 12 R18											
PI-RO-X108	PENETRATION X-108 FLOW LIMITER	220		R	2 3							
2	C 564 AZ 20 R16											
PI-RO-X109	PENETRATION X-109 FLOW LIMITER	220		R	2 3							
2	C 570 AZ 190 R31											
PI-RO-X110	PENETRATION X-110 FLOW LIMITER	220		R	2 3							
2	C 564 AZ 190 R31											
PI-RO-X111	PENETRATION X-111 FLOW LIMITER	220		R	2 3							
2	C 551 AZ 200 R18											
PI-RO-X112	PENETRATION X-112 FLOW LIMITER	220		R	2 3							
2	C 570 AZ 165 R14											
PI-RO-X113	PENETRATION X-113 FLOW LIMITER	220		R	2 3							
2	C 551 AZ 160 R17											
PI-RO-X114	PENETRATION X-114 FLOW LIMITER	220		R	2 3							
2	R 570											
PI-RO-X115	PENETRATION X-115 FLOW LIMITER	220		R	2 3							
2	C 551 AZ 340 R23											
PI-RO-X37E	PENETRATION X-37E FLOW LIMITER	220		R	2 3							
2	C 509 145 C AZ R23											
PI-RO-X37F	PENETRATION X-37F FLOW LIMITER	220		R	2 3							
2	C 536											

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
PI-RO-X38A / 2	PENETRATION X-38A FLOW LIMITER / C 514 105 D AZ R33	220		R	2 3							
PI-RO-X38B / 2	PENETRATION X-38B FLOW LIMITER / C 514 105 D AZ R33	220		R	2 3							
PI-RO-X38C / 2	RESTRICT ORIFICE FOR PENETR X-38C / C 550 140 D AZ R21	220		R	2 3							
PI-RO-X38D / 2	RESTRICT ORIFICE FOR PENETX-38D / C	220		R	2 3							
PI-RO-X38E / 2	RESTRICT ORIFICE FOR PENETR X-38E / C 514 35 D AZ R35	220		R	2 3							
PI-RO-X38F / 2	RESTRICT ORIFICE FOR PENETR X-38F / C	220		R	2 3							
PI-RO-X39A / 2	PENETRATION X-39A FLOW LIMITER / R 514	220		R	2 3							
PI-RO-X39B / 2	PENETRATION X-39B FLOW LIMITER / R 506 330 D AZ R15	220		R	2 3							
PI-RO-X39D / 2	RESTRICT ORIFICE FOR PENET X-39D / C	220		R	2 3							
PI-RO-X39E / 2	RESTRICT ORIFICE FOR PEANET X-39E / C 564 333 D AZ R20	220		R	2 3							
PI-RO-X40C / 2	PENETRATION X-40C FLOW LIMITER / C 517 170 D AZ R15	220		R	2 3							
PI-RO-X40D / 2	PENETRATION X-40D FLOW LIMITER / C 514 110 D AZ	220		R	2 3							
PI-RO-X40E / 2	PENETRATION X-40E FLOW LIMITER / C 504 130 D AZ R20	220		R	2 3							
PI-RO-X40F / 2	PENETRATION X-40F FLOW LIMITER / C 504 130 D AZ R20	220		R	2 3							
PI-RO-X41C / 2	PENETRATION X-41C FLOW LIMITER / C 505 325 D AZ R20	220		R	2 3							
PI-RO-X41D / 2	PENETRATION X-41D FLOW LIMITER / C 509 306 D AZ R24	220		R	2 3							
PI-RO-X41E / 2	PENETRATION X-41E FLOW LIMITER / C 514 315 D AZ R34	220		R	2 3							
PI-RO-X41F / 2	PENETRATION X-41F FLOW LIMITER / C 514 315 D AZ R33	220		R	2 3							
PI-RO-X42A / 2	PENETRATION X-42A FLOW LIMITER / C 514 315 C AZ R33	220		R	2 3							
PI-RO-X42B / 2	PENETRATION X-42B FLOW LIMITER / C 514 95 D AZ R33	220		R	2 3							
PI-RO-X44AA / 2	C 533 285 D AZ R15	220			2 3							
PI-RO-X44AB / 2	C 533 285 D AZ R15	220			2 3							
PI-RO-X44AC / 2	C 533 285 D AZ R15	220			2 3							
PI-RO-X44AD / 2	C 533 285 D AZ R15	220			2 3							
PI-RO-X44AE	PENETRATION X-44AE FLOW LIMITER	220		R	2 3							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	C 533 285 C AZ R15											
PI-RO-X44AF		220			2 3							
2	C 533 285 C AZ R15											
PI-RO-X44AG		220			2 3							
2	C 533 285 C AZ R15											
PI-RO-X44AH		220			2 3							
2	C 533 285 C AZ R15											
PI-RO-X44AJ		220			2 3							
2	C 533 285 D AZ R15											
PI-RO-X44AK	PENETRATION X-44AK FLOW LIMITER	220		R	2 3							
2	C 533 285 D AZ R15											
PI-RO-X44AL	PENETRATION X-44AL FLOW LIMITER	220		R	2 3							
2	C 533 285 C AZ R15											
PI-RO-X44AM	PENETRATION X-44AM FLOW LIMITER	220		R	2 3							
2	C 533 285 C AZ R15											
PI-RO-X44BA		220			2 3							
2	C 533 105 D AZ R16											
PI-RO-X44BB		220			2 3							
2	C 533 105 D AZ R16											
PI-RO-X44BC		220			2 3							
2	C 533 105 D AZ R16											
PI-RO-X44BD	PENETRATION X-44BD FLOW LIMITER	220		R	2 3							
2	C 533 105 D AZ R16											
PI-RO-X44BE	PENETRATION X-44BE FLOW LIMITER	220		R	2 3							
2	C 533 105 D AZ R15											
PI-RO-X44BF		220			2 3							
2	C 533 105 D AZ R16											
PI-RO-X44BG		220			2 3							
2	C 533 105 C AZ R16											
PI-RO-X44BH		220			2 3							
2	C 533 105 D AZ R16											
PI-RO-X44BJ		220			2 3							
2	C 533 105 C AZ R16											
PI-RO-X44BK	PENETRATION X-44BK FLOW LIMITER	220		R	2 3							
2	C 533 105 D AZ R15											
PI-RO-X44BL	PENETRATION X-44BL FLOW LIMITER	220		R	2 3							
2	C 533 105 C AZ R15											
PI-RO-X44BM	PENETRATION X-44BM FLOW LIMITER	220		R	2 3							
2	C 533 105 D AZ R15											
PI-RO-X61A	PENETRATION X-61A FLOW LIMITER	220		R	2 3							
2	C 533 105 D AZ R15											
PI-RO-X61B	PENETRATION X-61B FLOW LIMITER	220		R	2 3							
2	C 510 180 D AZ R15											
PI-RO-X62C		220			2 3							
2	C 504 355 C AZ R17											
PI-RO-X62D		220			2 3							
2	C 504 355 C AZ R17											
PI-RO-X69A	PENETRATION X-69A FLOW LIMITER	220		R	2 3							
2	C 512 358 C AZ R17											

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
PI-RO-X69B	PENETRATION X-69B FLOW LIMITER	220		R	2 3							
2	C 514 325 D AZ R33											
PI-RO-X69E		220			2 3							
2	C 512 355 D AZ R18											
PI-RO-X70A	PENETRATION X-70A FLOW LIMITER	220		R	2 3							
2	C 514 100 D AZ R33											
PI-RO-X70B	PENETRATION X-70B FLOW LIMITER	220		R	2 3							
2	C 514 100 D AZ R33											
PI-RO-X70C	PENETRATION X-70C FLOW LIMITER	220		R	2 3							
2	C 514 100 C AZ R33											
PI-RO-X70D	PENETRATION X-70D FLOW LIMITER	220		R	2 3							
2	C 514 100 C AZ R33											
PI-RO-X70E	PENETRATION X-70E FLOW LIMITER	220		R	2 3							
2	C 514 100 D AZ R18											
PI-RO-X70F	PENETRATION X-70F FLOW LIMITER	220		R	2 3							
2	C 514 100 C AZ											
PI-RO-X71A	PENETRATION X-71A FLOW LIMITER	220		R	2 3							
2	C 515 330 D AZ R34											
PI-RO-X71B	PENETRATION X-71B FLOW LIMITER	220		R	2 3							
2	C 515 330 D AZ R34											
PI-RO-X71C	RESTRICT ORIFICE FOR PENET X-71C	220		R	2 3							
2	C 515 330 D AZ R34											
PI-RO-X71D	RESTRICT ORIFICE FOR PNETR X-71D	220		R	2 3							
2	C 515 330 C AZ R34											
PI-RO-X71E	RESTRICT ORIFICE FOR PENETR X-71E	220		R	2 3							
2	C 515 330 D AZ R34											
PI-RO-X71F	RESTRICT ORIFICE FOR PENETR X-71F	220		R	2 3							
2	C 515 330 C AZ R34											
PI-RO-X72A	PENETRATION X-72A FLOW LIMITER	220		R	2 3							
2	C 594 244 D AZ R5											
PI-RO-X73A	PENETRATION X-73A FLOW LIMITER	220		R	2 3							
2	C 536 45 D AZ											
PI-RO-X74A	PENETRATION X-74A FLOW LIMITER	220		R	2 3							
2	C 512 190 C AZ R18											
PI-RO-X74B	RESTRICT ORIFICE FOR PENET X-74B	220		R	2 3							
2	C 564 23 D AZ R20											
PI-RO-X74E	RESTRICT ORIFICE FOR PENET X-74E	220		R	2 3							
2	C 509 204 C AZ R16											
PI-RO-X74F	RESTRICT ORIFICE FOR PENET X-74F	220		R	2 3							
2	C 511 195 C AZ R17											
PI-RO-X75A	PENETRATION X-75A FLOW LIMITER	220		R	2 3							
2	C 506 320 C AZ R37											
PI-RO-X75B	PENETRATION X-75B FLOW LIMITER	220		R	2 3							
2	C 506 320 C AZ R37											
PI-RO-X75C	PENETRATION X-75C FLOW LIMITER	220		R	2 3							
2	C 506 320 C AZ R37											
PI-RO-X75D	PENETRATION X-75D FLOW LIMITER	220		R	2 3							
2	C 506 320 C AZ R37											
PI-RO-X75E	PENETRATION X-75E FLOW LIMITER	220		R	2 3							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	C 512 350.D AZ R15											
PI-RO-X75F	PENETRATICN X+75F FLCW LIMITER	220		R	2 3							
2	C 512 350 C AZ R15											
PI-RO-X78B	PENETRATICN X+78B FLOW LIMITER	220		R	2 3							
2	C 561 242 D AZ R16											
PI-RO-X78C	PENETRATICN X+78C FLOW LIMITER	220		R	2 3							
2	C 512 15 D AZ R16											
PI-RO-X78F	PENETRATICN X+78F FLOW LIMITER	220		R	2 3							
2	C 512 180 D AZ R17											
PI-RO-X79A	PENETRATICN X+79A FLOW LIMITER	220		R	2 3							
2	C 537 AZ 136 R21											
PI-RO-X79B	PENETRATICN X+79B FLOW LIMITER	220		R	2 3							
2	C 533 AZ 136 R21											
PRA-CC-1A	COOLING COIL PRA-FC-1A	67		M	4 3		0 1			24		N
2	A 441 C.6/1.5	P295										
PRA-CC-1B	COOLING CCIL PRA-FC-1B	67.		M	4 3		0.1			24		N
2	A 441 D.4/1.6	P295										
PRA-FC-1A	SW PUMPHOUSE A ROOM SUPPLY COOLING	67	130007	M	4 3		0 1			24	F	N
2	A 447 D.6/1.5	P295			P270							
PRA-FC-1A+	SW PUMPHOUSE A ROOM SUPPLY COOLING				4 3							
1	A 447 D.6/1.5				P L-75-135-GR61E							
PRA-FC-1B	SW PUMPHOUSE B ROOM SUPPLY COOLING	67	130007	M	4 3		0.1			24		N
2	B 441 C.4/1.6	P295			W.O. MS-5040							
PRA-FC-1B+					4 3							
1	B 441 D.4/1.6											
RCC-RV-34A	FPC HX 1A RELIEF VALVE	26	297002		2 3							
2	R 554 K.7/9.2	L265			LCT-11							
RCC-RV-34B	RELIEF VALVE .75" X 1"	26	297002		2 3							
2	R 554 L.2/9.2	L265			LCT-11							
RCC-TX-10A	THERMOWELL FOR TEMP SW RCC-TS-10A	215	359001		2 3							
2	R				A-10402							
RCC-TX-10B	FPC HX 1B OUTLET TX	215	359001		2 3							
2	R 548 L1/9				A-10402							
RCIC-F-1	RCIC LUBE OIL DUPLEX FILTER		128009		3 1							
2	R 422 H.5/6.8	T147			IBD-1							
RCIC-FE-1	RCIC-P-1 DISCHARGE			M	1 1		0 0				P	
2	R 424 H.3/2.8	D012			37153							
RCIC-HX-1	RCIC BAROMETRIC CONDENSE	02		R	3 1							
2	R 425 H.5/6.9	A033			DWG 14-3334							
RCIC-HX-1+					3 1							
1	R 425 H.5/6.9											
RCIC-HX-2	RCIC LUBE OIL COOLER HT EXCH			R	3 1							
2	R 425 H.5/7.2	W180			DWG A-26790							
RCIC-HX-2+		02			3 1							
1	R 425 H.5/7.2											
RCIC-PCV-15	1" GLOBE LUBE OIL COOLING	42A	236001	M	3 1		0 1			39		N
2	R 425 H5/6.6	F130			6S7080							
RCIC-PCV-15+					3 1							
1	R 425 H.5/6.6											

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
RCIC-PCV-16	.75" AO GLOBE TK-1 VAC TK PRESS		236009	R	3 1						R	
2	R 426 H3/7.3	F127			98-H							
RCIC-RC-1	RUPTURE DISC RCIC-DT-1 VENT ATMO	215	276003	R	3 1						P	
2	R 443 H.4/7.8	B295			BRV							
RCIC-RD-2	RUPTURE DISC TURBINE OVERPRESS	215	276003	R	3 1						P	
2	R 443 H4/7.8	B295			BRV							
RCIC-RC-10A	RESTR. ORIFICE TO 10" DRIPLEG	215	286005	R	3 1						P	
2	R 425 H.3/7.2	V157			0-156							
RCIC-RC-10B	RESTRICTION ORIFICE TO 10" DRIPLEG	215	286005	R	3 1						P	
2	R 425 H.3/7.2	V157			0-156							
RCIC-RC-11	RCIC-P-3 DISCHARGE ORIFICE	215		R	3 1						P	
2	R 426 H.5/8.0											
RCIC-RO-3	RESTRICTION ORIFICE RCIC-P-4 DISC	215	286005	R	3 1						P	
2	R 427 H.3/8.3	V157			0-156							
RCIC-RC-5	RESTRICTION ORIFICE	215	286006	R	3 1						P	
2	R 435 H.4/7.3	S160			9-818							
RCIC-RO-6	RESTRICTION ORIFICE ATE	215	286003	B	3 1		0 1					N
2	R 435 H4/8.0	P175			DWG 556-30530							
RCIC-RC-8	RESTRICTION ORIFICE	215		R	3 1							
2	R 447 H.4/3.8											
RCIC-RO-9	RESTRICTION ORIFICE	215		R	3 1						P	
2	R 426 H.8/8.4											
RCIC-ST-1	CONICAL STRAINER SUCT RCIC-P-1	215		R	3 1							
2	R 428 H.3/7.7				A510							
RCIC-ST-2	SUPRESSION POOL STRAINER	213		R	3 1							
2	C 452 J.3/6.8											
RCIC-ST-3	SUPRESSION POOL STRAINER	213		R	3 1							
2	C 452 J.3/6.8											
RCIC-T-3	STEAM TRAP	215	325001	R	3 1							
2	R 423 H.3/7.7	Y010										
RCIC-T-4	STEAM TRAP RB EXH	215	325001	R	3 1							
2	R 423 H.3/7.7	Y010										
RCIC-T-5	STEAM TRAP	215	325001	R	3 1							
2	R 564 N.1/8.7	Y010										
RCIC-T-6	STEAM TRAP	215	325001	R	3 1							
2	R 549 110 D AZ	Y010										
RCIC-T-7	STEAM TRAP	215	325001	R	3 1							
2	R 565 H.7/8.8	Y010										
RCIC-TK-1	RCIC VACUUM TANK				3 1							
2	R 424 H.5/6.8	6080			DWG 14-3334							
RCIC-TK-1+	RCIC VACUUM TANK				3 1							
1	R 424 H.5/6.8				DWG 14-3334							
REA-FN-1A	REACTOR BUILDING EXHAUST FAN	22A	145022		3 3							
2	R 592 M.2/4.2	J127			54-26 1/2-1770							
REA-FN-1A+					3 3							
1	R 592 M.2/4.2											
REA-FN-1B	REACTOR BUILDING EXHAUST FAN	22A	145022		3 3							
2	R 585 M.2/4.2	J127			54-26 1/2-1770							
REA-FN-1B+					3 3							

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1	R 585 M.2/4.2											
RHR-FE-12	HEAD SPRAY FLOW ELEMENT			M	2 3		0 0					
2	R 560 M.7/5.0											
RHR-FE-14A	LOOP-A-FLOW ELEMENT			M	1 3		0.0.					
2	R 548											
RHR-FE-14B	FLOW ELEMENT FOR LOOP 2			M	1 3		0.0					
2	R 548											
RHR-FE-14C	FLOW ELEMENT LOOP C RETURN TO RPV			M	1 0		0.0					
2	R 441											
RHR-HX-1A	RHR HEAT EXCHANGER LOOP A		179002	B	1 3		0.2					Y
2	R 572 J.4/8.5	D100			P.O. 205-AF481							
RHR-HX-1A+	RHR HEAT EXCHANGER LOOP A COMPOSIT			R	1 3							
1	R 572 J.4/8.5											
RHR-HX-1B	RHR HEAT EXCHANGER LOOP B		179002	B	1 3		0.2					Y
2	R 572 M.7/8.6	D100			P.O. 205-AF481							
RHR-HX-1B+	RHR HEAT EXCHANGER LOOP B COMPOSIT			R	1 3							
1	R 572 M.7/8.6											
RHR-RO-1A	RESTRICTION ORIFICE LOOP A	215	286003	Q	2 3		0 1			99+		N
2	R 447 K.0/9.4	P175			N-1400							
RHR-RO-1B	RESTRICTION ORIFICE LOOP B	215	286003	Q	2 3		0 1			99+		N
2	R 447 M.0/9.4	P175			N1401							
RHR-RO-1C	RESTRICTION ORIFICE LOOP C	215	286003	Q	2 0		0.1			99+		N
2	R 447 J.0/5.0	P175			N1402							
RHR-RO-2	RESTRICTING ORIFICE(E12-D002)	215		Q	2 3							
2	R 426 H.4/4.9											
RHR-RO-3A	RESTRICTION ORIFICE-RHR TESTLINE A	215		Q	2 0							
2	R 478 J.3/7.7											
RHR-RO-3B	RESTRICTION ORIFICE-RHR TESTLINE B	215		Q	2 0							
2	R 490 M.4/8.0											
RHR-RO-4	RESTRICTING ORIFICE LOOP C TO RPV	215		Q	2 0.							
2	R 450 H3/5.9											
RHR-RV-1A	3/4"X1 1/2" RELIEF RHR-HX-1A SHELL	215		R	2 0							
2	R 580 J.0/9.0	6080										
RHR-RV-1B	3/4"X1 1/2" RELIEF RHR-HX-1B SHELL	215		R	2 0.							
2	R 580 N.0/8.3	6080.										
RHR-RV-25A	RELIEF VALVE-TEST LINE LOOP A	215	297003	T	2 0		0 1			99+		N
2	R 475 J/8	L265			D-30D							
RHR-RV-25B	RELIEF VALVE-TEST LINE LOOP B	215	297003	T	2 0		0.1			99+		N
2	R 477 M/8.2	L265			D-30D							
RHR-RV-25C	RELIEF VALVE-TEST LINE LOOP C	215	297003	T	2 0		0 1			99+		N
2	R 449 H.3/5.9	L265			D-30D							
RHR-RV-30	RELIEF VALVE-P-1B SUCT. DRAIN LINE	215	297002	T	2 0		0.1			99+		N
2	R 475	L265			LCT-11							
RHR-RV-36	RELIEF VALVE-STEAM CONDENSING OUTL	215	297003	T	2 0		0 1			99+		N
2	R 474 K/8.3	L265			D-10P							
RHR-RV-5	RELIEF VALVE-SHUTDOWN COOL SUCTION	215	297003	T	2 0		0 1			99+		N
2	R 503 M.1/7.1	L265			D-20D							
RHR-RV-55A	RELIEF VALVE-STEAM CONDENSING INLE	215	297007	R	2 0							
2	R 479 8.0/K.5	C710			N59398							

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RHR-RV-55B	RELIEF VALVE-STEAM CONDENSING-INLE	215	297007	R	2 0							
2	R 479 L4/8	C710			N59398							
RHR-RV-86A	3/4"X1" PUMP 2A SUCTION RELIEF	215		T	2 0		0 1			99+		N
2	R 422											
RHR-RV-88B	3/4"X1" RHR PUMP 2B SUCTION RELIEF	215		T	2 0		0 1			99+		N
2	R 422											
RHR-RV-88C	3/4"X1" RHR PUMP 2C SUCTION RELIEF	215	297002	T	2 0		0 1			99+		N
2	R	L265			LCT-11							
RHR-RV-95A	RELIEF VALVE-STEAM CONDENSING-INLE	215	297007	R	2 0							
2	R 479 8/K.5	C710			N59398							
RHR-RV-95B	RELIEF VALVE-STEAM CONDENSING-INLE	215	297007	R	2 0							
2	R 479 L5/8	C710			N59398							
RHR-ST-3A	SUPP POOL STRAINER SUPPLY LOOP B	213A		R	2 0							
2	C											
RHR-ST-3B	SUPP POOL STRAINER SUPPLY LOOP B	213A		R	2 0							
2	C											
RHR-ST-4A	SUPP POOL STRAINER PUMPC SPLYLOCPC	213A		R	2 0							
2	C											
RHR-ST-4B	SUPP POOL STRAINER PUMPC SPLYLOCPC	213A		R	2 0							
2	C											
RHR-ST-5A	SUPP POOL STRAINER SUPPLY LOOP A	213A		R	2 0							
2	C											
RHR-ST-5B	SUPP POOL STRAINER SUPPLY LOOP A	213A		R	2 0							
2	C											
RRC-AO-85A	AIR OPERATOR RRC-V-85A	02B35		R	2 0							
2	C 501 L.7/5.2											
RRC-AO-85B	AIR OPERATOR RRC-V-85B	02B35		R	2 0							
2	C 501 K.3/6.9											
RRC-FC-2A	SEAL PURGE FLOW REG TO RRC-P-1A	02			2 0							
2	R 504 M.7/4.3	K022			C 2FA9-18							
RRC-FC-2B	SEAL PURGE FLOW REG TO RRC-P-1B	02			2 0							
2	R 508 K.0/7.9	K022			C 2FA9-18							
RRC-HO-60A	RRC-FCV-60A HYD ACT	02B35	170002		2 0							
2	C 506 115 C AZ R24	0067			SERIES 2TH STYLE BBH							
RRC-HO-60B	RRC-FCV-60B HYD ACT	02B35	170002		2 0							
2	C 506 293 C AZ R24	0067			SERIES 2TH STYLE BBH							
RRC-PI-1A	PRESSURE INDICATOR	58			2 0							
2	R 471 L.5/4.1	R290			613B							
RRC-PI-1B	PRESSURE INDICATOR	58			2 0							
2	R 471 M.6/8.1	R290			613B							
RRC-PI-2A	PRESSURE INDICATOR	58			2 0							
2	R 471 L.5/4.1	R290			613B							
RRC-PI-2B	PRESSURE INDICATOR	58			2 0							
2	R 471 M.6/8.1	R290			613B							
RRC-PI-5	PRESSURE INDICATOR	58			2 0							
2	R 518 J.5/8.3	R290			613B							
RRC-RO-1A	RESTRICTION ORIFICE				2 0							
2	R 506 M.5/4.5	I012										
RRC-RO-1B	RESTRICTION ORIFICE				2 0							

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2	R 506 J.2/7.3	I012										
RRC-RV-15A	3/4" X 1" RELIEF VALVE	02B35	297017	X	2 0							
2	R	C710			JR-SPEC							
RRC-RV-15B	3/4" X 1" RELIEF VALVE	02B35	297017		2 0							
2	R 504 K.0/7.9	C111			55250							
RWCU-FE-35	RWCU SUPPLY FLOW FROM RECIRC LOOP	02	134004	R	2 3							
2	C	V110			145C3227P043							
RWCU-FE-40	RWCU RETURN FLOW TO RFW	02	134004	R	2 3							
2	R 514 H.8/5.1	V110			145C3227P042							
RWCU-PWS-36/1	PIPE WHIP RESTRAINT TYPE 4A	90		R	2 3							
2	R 500 251 AZ 11 R											
RWCU-PWS-36/14	PIPE WHIP RESTRAINT TYPE 4A	90		R	2 3							
2	R 540 150 AZ 24 R											
RWCU-PWS-36/15	PIPE WHIP RESTRAINT TYPE 4A	90		R	2 3							
2	R 538 150 AZ 24 R											
RWCU-PWS-36/16	PIPE WHIP RESTRAINT TYPE 4A	90		R	2 3							
2	R 538 150 AZ 24 R											
RWCU-PWS-36/17	PIPE WHIP RESTRAINT TYPE 3B	90		R	2 3							
2	R 538 113 AZ 22 R											
RWCU-PWS-36/18	PIPE WHIP RESTRAINT TYPE 3B	90		R	2 3							
2	R 538 80 AZ 22 R											
RWCU-PWS-36/19	PIPE WHIP RESTRAINT TYPE 4	90		R	2 3							
2	R 538 70 AZ 22 R											
RWCU-PWS-36/2	PIPE WHIP RESTRAINT TYPE 4	90		R	2 3							
2	R 500 247 AZ 13 R											
RWCU-PWS-36/20	PIPE WHIP RESTRAINT TYPE 4A	90		R	2 3							
2	R 535 67 AZ 23 R											
RWCU-PWS-36/21	PIPE WHIP RESTRAINT TYPE 3D	90		R	2 3							
2	R 502 67 AZ 23 R											
RWCU-PWS-36/22	PIPE WHIP RESTRAINT TYPE 3D	90		R	2 3							
2	R 501 28 AZ 21 R											
RWCU-PWS-36/23	PIPE WHIP RESTRAINT TYPE 3A	90		R	2 3							
2	R 511 28 AZ 21 R											
RWCU-PWS-36/3	PIPE WHIP RESTRAINT TYPE 4	90		R	2 3							
2	R 500 241 AZ 16 R											
RWCU-PWS-36/4	PIPE WHIP RESTRAINT TYPE 4	90		R	2 3							
2	R 500 232 AZ 10 R											
RWCU-PWS-36/5	PIPE WHIP RESTRAINT TYPE 4	90		R	2 3							
2	R 500 232 AZ 13 R											
SGT-CF-1A1	ACTIVATED CARBON IODINE ABSORBER	18	039001	R	1 0						F	
2	R 574 H.6/6.0	F030			L-43064							
SGT-CF-1A2	ACTIVATED CARBON IODINE ABSORBER	18	039001	R	1 0						F	
2	R 574 H.6/6.0	F030			L-43064							
SGT-CF-1B1	ACTIVATED CARBON IODINE ABSORBER	18	039001	R	1 0						F	
2	R 574 J.8/6.0	F030			L-43064							
SGT-CF-1B2	ACTIVATED CARBON IODINE ABSORBER	18	039001	R	1 0						F	
2	R 574 J.8/6.0	F030			L-43064							
SGT-FE-1A1	FLOW ELEMENT AFTER SGT-FN-1A-1	215	134010		1 0							
2	583 H.8/7.0	E222			761							

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SGT-FE-1A2	FLOW AFTER SGT-FN-1A2	215	134010		1 0							
2	R 574 H.7/7.0	E222			761							
SGT-FE-1B1	FLOW AFTER SGT-FN-1B-1	215	134010		1 0							
2	R 583 J.3/7.5	E222			761							
SGT-FE-1B2	FLOW AFTER SGT-FN-1B-2	215	134010		1 0							
2	R 583 J.6/7.5	E222			761							
SGT-FL-1A	PREFILTERS FOR SGT-FU-1A	18	142004	R	1 0						F	
2	R 574 H.6/5.7	F030			C-17913-8							
SGT-FL-1B	PREFILTERS FOR SGT-FU-1B	18	142004	R	1 0						F	
2	R 574 J.4/5.7	F030			C-17913-8							
SGT-HF-1A1	HIGH EFF FILTER	18	168001	R	1 0							
2	R 574 H.6/6.0	F030			A47056-3							
SGT-HF-1A2	HIGH EFF FILTER	18	168001	R	1 0						F	
2	R 574 H.6/6.5	F030			A47056-3							
SGT-HF-1B1	HIGH EFF FILTER	18	168001	R	1 0						F	
2	R 574 V.4/6.0	F030			A-470563							
SGT-HF-1B2	HIGH EFF FILTER	18	168001	R	1 0						F	
2	R 574 V.4/6.5	F030			A-470563							
SGT-MS-1A	MOISTURE SEPARATOR FOR SGT-FU-1A	18	223001	R	1 0						F	
2	R 574 A.6/5.7	F030			68-44-3142							
SGT-MS-1B	MOISTURE SEPARATOR FOR SGT-FU-1B	18	223001	R	1 0						F	
2	R 574 V.2/5.7	F030			68-44-3142							
SGT-PI-6A1	DELUGE VALVE ASS. SGT-DV-1A-2 LOC-	18	243005		2 0							
2	R 580 H.3/3.8	F030			DWG L-50862							
SGT-PI-6B1	DELUGE VALVE ASS. SGT-DV-1B-2 LOC-	18	243005		2 0							
2	580 H.3/3.8	F030			DWG L-50862							
SGT-PI-7A1	DELUGE VALVE ASS SGT-DV-1A-3	18	243005		2 0							
2	580 H.3/3.8	F030			DWG L-50862							
SGT-PI-7B1	DELUGE VALVE ASS SGT-DV-1B-3	18	243005		2 0							
2	580 H.3/3.8	F030			DWG L-50862							
SGT-PI-8A1	DELUGE VLV ASS SGT-DV-1A-1	18	243005		2 0							
2	580 H.3/3.8	F030			DWG L-50862							
SGT-PI-8B1	DELUGE VALVE ASS SGT-DV-1B 1	18	243005		2 0							
2	576 H.3/3.8	F030			DWG L-50862							
SGT-RO-6A1	RESTRICTION ORIFICE SGT-DV-6A1 - -	18	286008	R	2 0							
2	R 576 H.3/3.8	F030			L-50853							
SGT-RO-6B1	RESTRICTION ORIFICE SGT-DV-6B1 - -	18	286008	R	2 0							
2	R 576 H.3/3.9	F030			L-50853							
SGT-RO-7A1	RESTRICTION ORIFICE SGT-DV-7A1 - -	18	286008	R	2 0							
2	R 580 H.3/3.8	F030			L-50853							
SGT-RO-7B1	RESTRICTION ORIFICE SGT-DV-7B1 - -	18	286008	R	2 0							
2	R 580 H.3/3.8	F030			L-50853							
SGT-RO-8A1	RESTRICTION ORIFICE SGT-DV-8A1 - -	18	286008	R	2 0							
2	R 576 H.3/3.8	F030			L-50853							
SGT-RO-8B1	RESTRICTION ORIFICE SGT-DV-8B1 - -	18	286008	R	2 0							
2	R 580 H.3/3.8	F030			L-50853							
SGT-ST-F1A	25" Y STRAINER SGT-RC-F8A-1 INLET	18	319007		2 0							
2	R 572 H3/3.4	F030			DWG L-50865							
SGT-ST-F2A	25" Y STRAINER SGT-RC-F6A-1 INLET	18	319007		2 0							

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2	R 572 H3/3.4	F030			DWG L-50865							
SGT-ST-F3A	25" Y STRAINER SGT-RO-F7A-1 INLET	18	319007		2 0							
2	R 572 H3/3.4	F030			DWG L-50865							
SGT-ST-F4A	25" Y STRAINER SGT-RO-F8B1 INLET	18	319007		2 0							
2	R 572 H3/3.4	F030			DWG L-50865							
SGT-ST-F5A	25" Y STRAINER SGT-RO-F6B-1 INLET	18	319007		2 0							
2	R 572 H3/3.4	F030			DWG L-50865							
SGT-ST-F6A	25" Y STRAINER SGT-RO-F7B-1 INLET	18	319007		2 0							
2	R 572 H3/3.4	F030			DWG L-50865							
SLC-LG-1	SLC-TK-2 LEVEL	215			2 0							
2												
SLC-PI-3	SLC PRESSURE - -	02	243099	T	2 0	1 1	0 0			21		N
2	R 552 N.0/3.7	R290			017							
SLC-RO-1	RESTRICTION ORIFICE	215		R	2 0							
2	R 553 M.5/3.7											
SLC-PV-29A	RELIEF VALVE 1" X 2"	215	297008	B	2 0							
2	R 552 M.0/3.6	L265			0-500/54							
SLC-RV-29B	RELIEF VALVE 1" X 2"	215	297008	B	2 0							
2	R 552 M.0/3.6	L265			0-500/54							
SLC-TK-1	SLC STORAGE TANK	215		R	2 0							
2	R 548 M.8/3.7	6080										
SLC-TK-2	SLC TEST TANK	215			2 0							
2	R M6/3.4	6080										
SLC-TK-2+	SLC TEST TANK COMPOSITE	215			2 0							
1												
SW-EJ-1A	20" EXPANSION JOINT SW-P-1A OUTLET	215		R	4 3							
2	A 443 B.0/2.1	T330										
SW-EJ-1B	20" EXPANSION JOINT SW-P-1B OUTLET	215		R	4 3							
2	B 443 B.0/2.1	T330										
SW-EJ-2	EXPANSION JOINT	215		R	4 3							
2	B 443 B.0/2.1	T330										
SW-FE-6A	RHR-HX-1A INLET FLOW	02		M	1 3		0 0				P	N
2	R 550 K.0/8.3											
SW-FE-6B	RHR-HX-1B INLET FLOW	02		M	1 3		0 0				P	N
2	R 550 N.0/8.3											
SW-FLX-1A1	FLEXIBLE CONN TO DCW-HX-1A1	215	144003	B	4 3		0.1			99+		N
2	D 441	M270			77246							
SW-FLX-1A2	FLEXIBLE CONN TO DCW-HX-1A2	215	144003	B	4 3		0.1			99+		N
2	D 441	M270			77246							
SW-FLX-1B1	FLEXIBLE CONN DCW-HX-1B1 INLET	215	144003	B	4 3		0.1			99+		N
2	D	M270			77246							
SW-FLX-1B2	FLEXIBLE CONN DCW-HX-1B2 INLET	215	144003	B	4 3		0 1			99+		N
2	D	M270			77246							
SW-FLX-2A1	FLEXIBLE CONN DCW-HX-1A1 OUTLET	215	144003	B	4 3		0 1			99+		N
2	D	M270			77246							
SW-FLX-2A2	FLEXIBLE CONN DCW-HX-1A2	215	144003	B	4 3		0 1			99+		N
2	D	M270			77246							
SW-FLX-2B1	FLEXIBLE CONN DCW-HX-1B1 OUTLET	215	144003	B	4 3		0 1			99+		N
2	D	M270			77246							

EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TR	HL
SW-FLX-2B2	2	FLEXIBLE CONN DCW-HX-1B2	D	215	M270	144003	B	4 3	77246		0 1			99+		N
SW-FLX-3	2	8" FLEX CONN DCW-HX-1C	D	215	M270	144003	B	4 3	77246		0 1			99+		N
SW-FLX-4	2	8" FLEX CONN DCW-HX-1C	D	215	M270	144003	B	4 3	77246		0 1			99+		N
WMA-CC-51A1	2	COOLING COIL FOR WMA-AH-51A	W 535 H8/12.4	67	C780	037004	R	4 3								
WMA-CC-51A2	2	COOLING COIL (CHILLED WATER) PART	W	67	C780	037004	R	4 3								
WMA-CC-51B1	2	COOLING COIL FOR WMA-AH-51B	W 535 L4/11	67	C780	037004	R	4 3								
WMA-CC-51B2	2	COOLING COIL (CHILLED WATER) PART	W	67	P295	[illegible]	[illegible]	4 3								
WMA-CC-52A1	2	COOLING COIL FOR WMA-AH-52A	W 535 L5/11.8	67	C780	037004	N	4 3		2 1	0 1			11		N
WMA-CC-52A2	2	COOLING COIL (CHILLED WATER) PART	W	67	C780	037004	N	4 3		2 1	0 1			11		N
WMA-CC-52B1	2	COOLING COIL FOR WMA-AH-52B	W 535 L5/11.8	67	C780	037004	N	4 3		2 1	0 1			11		N
WMA-CC-52B2	2	COOLING COIL (CHILLED WATER) PART	W	67	C780	037004	N	4 3		2 1	0 1			11		N
WMA-CC-53A1	2	COOLING COIL FOR WMA-AH-53A	W 525 L/10.5	67	C780	037004	R	4 3								
WMA-CC-53A2	2	COOLING COIL (SERVICE WATER) PART	W	67	C780	037004	R	4 3								
WMA-CC-53B1	2	COOLING COIL FOR WMA-AH-53B	W 525 K.9/12	67	C780	037004	R	4 3								
WMA-CC-53B2	2	COOLING COIL (SERVICE WATER) PART	W	67	C780	037004	R	4 3								
WMA-CF-54A	2	CHARCOAL ADSORBER FOR WMA-FU-54A	W 535 H.4/12	18	F030	039002	R	4 3	NPP-1 C43060							
WMA-CF-54B	2	CHARCOAL ADSORBER FOR WMA-FU-54B	W 535 L.8/10.9	18	F030	039002	R	4 3	NPP-1 C43060							
WMA-DV-54A	2	DELUGE VALVE ASSY FOR WMA-FU-54A	W 530 J.8/12.5		F030	100001	R	4 3	D-54898-1							
WMA-DV-54B	2	DELUGE VALVE ASSY FOR WMA-FU-54B	W 530 L.5/12.5	216	F030	100001	R	4 3	D-54898-1							
WMA-FL-51A	2	FILTER FOR WMA-AH-51A	W 535 J.4/12.0	67	P295		N	4 3								N
WMA-FL-51B	2	FILTER FOR WMA-AH-51B	W 535 L.8/10.9	67	P295		N	4 3								N
WMA-FL-52A	2	ROLL FILTER FOR WMA-AH-52A	W 525 J2/11.4	67	C047	142003	A	4 3	HAR4-7D	2 1	0 1			11+		N
WMA-FL-52B	2	ROLL FILTER FOR WMA-AH-52B	W 525 K9/11.4	67	C047	142003	A	4 3	HAR4-7D	2 1	0 1			11+		N
WMA-FL-53A	2	ROLL FILTER FOR WMA-AH-53A	W 525 J2/10.5	67	C047	142003	N	4 3	HAR6-11D							N
WMA-FL-53B		ROLL FILTER FOR WMA-AH-53B		67		142003	N	4 3								N

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

8203030584

FEB 1 6 1982

Docket No: 50-397

MEMORANDUM FOR: Robert L. Tedesco, Assistant Director for Licensing, DL

FROM: L. S. Rubenstein, Assistant Director for Core and Plant Systems, DSI

SUBJECT: SAFETY EVALUATION REPORT - WPPSS NUCLEAR PROJECT NO. 2

Plant Name: WPPSS Nuclear Project No. 2
Licensee: Washington Public Power Supply System
Docket No: 50-397
Licensing Stage: OL
Project Manager: R. Auluck
Systems Integration Branch: Power Systems
PSB Reviewers: S. Rhow/R. Giardina
Review Status: Awaiting Information

The enclosed Safety Evaluation Report (SER) was prepared by the Power Systems Branch, DSI for inclusion in the WNP-2 SER. This report applies to Sections 8.1, 8.2, 8.3.1, 8.3.2, 9.5.2 through 9.5.8, 10.2, 10.3, 10.4.1 and 10.4.4 of the Standard Review Plan for which the PSB has review responsibility.

A listing of open items is presented in Enclosure 1 and they have been categorized in accordance with Enclosure 2.

The above open issues have been discussed with the applicant and he is aware of our requirements to resolve them, and is providing the necessary information for items 1, 2, 9 and 10. Items 4, 6 and 8 are being pursued by the staff with the applicant and the engine manufacturer. Upon receipt of the needed information, we will report on the resolution of these items in a supplement to this report.

L. S. Rubenstein

L. S. Rubenstein, Assistant Director
for Core and Plant Systems
Division of Systems Integration

Enclosures:
As stated

cc: See page 2

Contact:
S. Rhow x29488 R. Giardina x29484

FEB 1 6 1982

cc w/o enclosures:
D. Eisenhut
M. Srinivasan

cc w/enclosure:
R. Mattson
B. Youngblood
R. Auluck
J. Knight
A. Ungaro
R. Giardina
S. Rhow

ENCLOSURE 1

WNP-2 ITEM LIST

1. Adequacy of Station Electric Distribution System Voltages (section 8.2.6) compliance with position PSB-1 (Open - Category 3)

2. DC emergency lighting has not been provided in certain vital areas of the plant that may be needed for safe plant shutdown (section 9.5.3) (Open-Category 3)

3. Relocation of the engine mounted controls and monitoring instrumentation to floor mounted panel (section 9.5.4.1) (Closed by licensing condition - Category 1)

4. The quality group classification for the D/G auxiliary systems are not in conformance with Regulatory Guide 1.26 (section 9.5.4 through 9.5.8) (Open-Category 3, 4)

5. The D/G fuel oil system does not conform to ANSI N195 and Regulatory Guide 1.137 position C.2 (section 9.5.4.2) (Closed by licensing condition - Category 1)

6. The diesel engine cooling water preheat system is not adequately addressed (section 9.5.5) (Open - Category 3, 4)

7. Installation of the air dryer in the D/G air start system prior startup (section 9.5.6) (Closed by licensing condition - Category 1)

8. The diesel engine lube oil system ability to preclude dry starting of the engine is inadequate (section 9.5.7) (Open - Category 3, 4)

9. Blockage of the D/G combustion air intake and exhaust system due to various meteorological events and its effect on engine operation has not been adequately addressed (section 9.5.8) (Open - Category 3)

10. Portions of the diesel engine exhaust system are not tornado missile protection (section 9.5.8) (Open - Category 3)

ENCLOSURE 2

Category Identification	Disposition
1. Fundamental technical disagreement Between staff & applicant	If agreement can't be reached -- use license condition.
2. New requirement or issue (a) Origin at Branch level (b) Origin above Branch level	Elevate for decision on application to case at hand at rate of one management step per three working days.
3. Delay because requested information not received from applicant. (a) Request for information for applicant outstanding for at least 3 months (b) Recent request by staff	If request goes beyond reasonable response period use license condition if appropriate - otherwise hold as open item.
4. Resource constraint, e.g., single reviewer on staff with appropriate expertise is critical path.	
5. Staff review incomplete	Resolution required by Division Director
6. Generic items	Subject to resolution upon generic staff position
7. Confirmatory Items	Awaiting completion of agreed upon action by applicant

ENCLOSURE 3

8.0 ELECTRIC POWER SYSTEMS - GENERAL

8.1 Acceptance Criteria

The acceptance criteria used as the basis for our evaluation are set forth in Table 8-1 of the Standard Review Plan (SRP), NUREG-0800. The primary bases within the criteria detailed in Table 8-1 of the SRP are provided by General Design Criterion (GDC) 5, "Sharing of Structures, Systems and Components," GDC 17, "Electric Power Systems," and GDC 18, "Inspection and Testing of Electric Power Systems," contained in 10 CFR 50, Appendix A, and the review guidance in Regulatory Guide 1.6, "Independence Between Redundant Standby (Onsite) Power Sources and Between Their Distribution Systems," Regulatory Guide 1.9, "Selection of Diesel Generator Set Capacity for Standby Power Supplies," Regulatory Guide 1.75, "Physical Independence of Electric Systems," Regulatory Guide 1.63, "Electric Penetration Assemblies in Containment Structures for Light Water Cooled Nuclear Power Plants," Regulatory Guide 1.32, "Criteria for Safety Related Electric Power Systems for Nuclear Power Plants," and IEEE Standard 308-1974, "Criteria for Class 1E Power Systems for Nuclear Power Generating Stations." Additional guidance is provided by other Regulatory Guides, and Power Systems Branch Technical Positions also delineated in Table 8-1 of the SRP.

Conformance with the acceptance criteria forms the basis for concluding that electric power systems satisfy the applicable regulations of 10 CFR 50.

The following subsections provide our evaluation of the design criteria and design description in the Final Safety Analysis Report.

8.2 Offsite Power System

8.2.1 General Description

The offsite power system is the preferred source of power for the plant. This system includes the grid, transmission lines, transformers, switchyard components, and associated control systems provided to supply electric power to safety-related and other equipment. The electrical grid is the source of energy for the offsite power system. The safety function of the offsite power system (assuming that the onsite power systems are not available) is to provide sufficient capacity and capability to ensure that the specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundry (RCPB) will not be exceeded and to ensure that core cooling, containment integrity, and other vital functions will be maintained in the event of postulated accidents. The objectives of the staff review are to determine that the offsite power system (1) satisfies the criteria set forth in Section 8.1 of this report and (2) can reliably perform its design functions during normal plant operation, anticipated operational occurrences, and accident conditions.

The Washington Public Power Supply System's 500 kv transmission system serves as the main outlet and source of power for the Nuclear Project No. 2. The generator is connected to the system through a 22/500 kv step-up transformer, and 500 kv overhead lines to the Ashe Switchyard of the Bonneville Power Administration (BPA) located 3000 feet north of the plant. The generator is connected to the step-up main transformer bank with forced air cooled, isolated phase bus duct. Separate isolated phase bus ducts are tapped from the main bus power supply to the normal auxiliary transformers. The main transformer bank consists of four single phase transformers (one transformer is a spare). The bank is delta connected on the primary side (low voltage), and Wye connected on the secondary high side with a solidly grounded neutral. The main transformer bank is protected against faults by high-speed differential relays and by sudden pressure relays. Relay signals from any of the generator or main transformer bank protective devices will trip the generator field, the

500 kv Ashe Switchyard power circuit breaker, and appropriate plant auxiliary distribution system breakers. Fast transfer to the plant startup transformer would also be initiated automatically by the generating unit trip system. The 500 kv bus at Ashe Switchyard will be a three-position ring bus at the time the plant 500 kv line is connected. The plant line is connected to one line position. The other two 500 kv lines are connected to the other two positions: one line to Hanford, 19 miles long and the second line to Lower Monumental, 35 miles long. Each line has a load capacity of about 3000 megawatts. The 500 kv switchyard is a two-bus arrangement with transmission lines terminating at individual positions on alternate buses.

Primary and secondary protective relaying systems provide redundant protection for the 500 kv transmission lines. The primary and secondary protective relaying systems are dual direct-underreaching, permissive-overreaching transfer trip scheme via the BPA microwave system. A breaker failure scheme is provided so that in the event of breaker failure to trip on a fault, only the bus section adjacent to the failed breaker is lost. The power source for the solid state microwave equipment located at this plant is the non-Class 1E 120/240 volt plant uninterruptible power system.

Two independent offsite circuits supply electric power to the offsite distribution for the WNP No. 2, one circuit at 230 kv level and the second circuit at 115 kv level. The 230 kv circuit from the 230 kv H. J. Ashe Switchyard is the immediately available source for safe plant shutdown. This circuit is connected to the plant Startup Auxiliary Power Transformer TR-S. The 230 kv Ashe Switchyard has a main bus-transfer bus type configuration and accommodates two transmission lines: one from the Department of Energy (DOE) 230 kv loop, 9.5 miles long, and one from the BPA White Bluffs Substation, 5 miles long. Each line has a capacity of about 350 megawatts. The protective relaying scheme for the line to the DOE 230 kv loop has dual protective relaying consisting of a carrier current directional comparison blocking scheme and transfer trip scheme via carrier. The protective relaying on the line to the White Bluffs is a carrier current transfer trip scheme.

The second immediately available offsite power source is the 115 kv feeder, approximately four miles long, from the 115 kv Benton Switchyard. This 115 kv line is connected to the Backup Auxiliary Power Transformer TR-B. The Benton 115 kv Switchyard has a main bus-transfer bus type configuration. Power to the Benton Switchyard is supplied by a line to the Midway Switchyard, 29 miles long, two lines to the Franklin Substation, 21 miles long, and a line to the White Bluffs substation, 11 miles long. Each of these lines has a capacity of about 100 megawatts. The protective relaying for all the lines connecting to the Benton Switchyard consists of 3-zone phase distance relays and directional ground overcurrent relays.

Two physically independent and redundant sources of offsite power are available for plant startup and safe shutdown of the unit. Safety-related 4.16 kv buses are powered from the two independent Startup Transformers through the non-safety 4.16 kv buses. During normal plant operation, 4.16 kv power is supplied by the unit's auxiliary transformer. Power for plant startup and shutdown is supplied by the preferred startup transformer. In the event the preferred startup transformer is unavailable, an automatic transfer scheme connects the backup (alternate) startup transformer to the Class 1E buses.

The startup transformer (TR-S) has the capacity to supply full startup, normal running, and ESF shutdown loads for Divisions 1, 2 and 3. The backup startup transformer has the capacity to supply the full power requirements of the engineered safety feature system for both Division 1 and Division 2.

Protective relaying provided for each transformer includes differential current and sudden pressure relays to sense

internal transformer faults, and primary relays to provide backup for secondary faults. These relays in turn actuate the affected transformer lockout relay. The startup transformers are also provided with overcurrent relays in the primary grounding connection. Protective relay signals from the startup transformer will trip and lockout corresponding feeder circuit breakers and appropriate plant auxiliary distribution system breakers.

The transmission lines interconnecting the plant with the utility systems are designed and constructed in accordance with industry standards for environmental conditions prevalent in the area with regard to wind, ice loading, temperature, lightning and flood, so as to minimize the possibility of line failures from such causes. The 500 kv plant output and 230 kv plant offsite power supply lines originating at the H. J. Ashe Switchyard run parallel to each other, on separate rights-of-way. The backup 115 kv offsite power supply line from the Benton Switchyard is geographically separated from the 500 kv and 230 kv transmission lines to preclude a simultaneous outage of all offsite sources. None of these lines cross each other.

Based upon the above, we find that this aspect of the offsite power system design meets the requirements of GDC 17, "Electric Power Systems," and is acceptable.

8.2.2 Capability

The offsite power system provides adequate capacity and capability to supply all station auxiliary loads as well as start and operate all safety related equipment. Each of the two offsite circuits to the WNP No. 2 onsite distribution system is immediately available and sized to accommodate the entire onsite load. In addition, the offsite power system provides sufficient redundancy and electrical and physical independence such that no single event is likely to cause a simultaneous outage of both circuits to the onsite power distribution system in such a way that neither circuit can be returned to service in time to prevent fuel design limits and design conditions of the reactor coolant pressure boundary from being exceeded. This requirement of GDC 17 applies only to the circuits and assumes that the power grid itself is available. We find the capacity and capability of the offsite power system and its circuit ties to the onsite distribution system to be in accordance with the requirements of GDC 17, "Electrical Power Systems," and therefore acceptable.

8.2.3 Grid Stability

The stability of the Bonneville Power Administration (BPA) Grid has been analyzed for the worst case line fault in the vicinity of WNP No. 2 and for loss of the WNP No. 2 unit generator as well as loss of the largest generating station on the system. The stability studies demonstrate that the unit generator and the applicant grid are stable for a three-phase fault at the Ashe end of the Ashe-Hanford 500 kv line and at the Hanford end of the Hanford-John Day 500 kv line. These faults represent the worst single contingency at Ashe and the worst single contingency on the applicant grid in the vicinity of the WNP No. 2 plant. Also, the stability study demonstrates that the BPA grid is stable for simultaneous loss of the WNP No. 2 unit generator and the largest generating station (Grand Coulee) on the grid for system peak load conditions.

The stability of the BPA Grid is continuously studied as the load demand and generating and transmission facilities are increased. The reliability and availability of the BPA Grid is stringently controlled in accordance with the BPA " Reliability Criteria and Standards." This document is continually updated and will be applicable at startup and throughout the operation life of WNP No. 2. The applicant states that the BPA will not interrupt nor reduce the delivery of power to the WNP No. 2 plant without the prior concurrence of the Washington Public Power Supply System.

Based on our review of the applicant's results of the stability studies presented in the Final Safety Analysis Report, there is reasonable assurance that the ability of the Washington Public Power Supply System grid to provide offsite power to the Washington Nuclear Project No. 2 will not be impaired by the loss of the largest external single supply to the grid, the loss of the most critical transmission line, or the loss of a WNP No. 2 unit itself. This capability satisfies the requirements of GDC 17 with respect to this aspect of the design and is acceptable.

8.2.4 Testability

The two circuits to the startup transformers from the 230 kv and 115 kv switchyards are independent of each other. The three circuits from the startup transformer and the two circuits from the backup startup transformer to the emergency buses are routed separately. Due to this separation, a failure of one circuit will not cause the failure of the other circuits. All of the protective relay systems in the 230 kv and 115 kv systems are redundant and independent. Where the relay systems are redundant, each scheme is supplied with separate current inputs and operates on a separate power supply.

The design of the offsite power system, including its protection schemes described above, permits appropriate periodic inspection and testing of important features to assess the continuity of the systems, functionability and condition of their components.

The substation components for the offsite power supply are testable during reactor operation. The power circuit breakers are inspected, maintained and tested on an individual basis while allowing the 230 and 115 kv switchyards to remain energized. The systems will have a capability to periodically test the operability and functional performance of the components of the systems, and the operability of the systems as a whole. The systems meet the requirements of General Design Criterion 18, "Inspection and Testing of Electric Power Systems," and are, therefore, acceptable.

8.2.5 Conclusions

On the basis of our review and our above evaluation, we have concluded that the offsite power system for WNP-2 meet the requirements of General Design Criteria 5, 17, and 18 and is, therefore, acceptable.

8.3 Onsite Emergency Power System

8.3.1 Alternating Current Power Systems

The alternating current offsite power system is a Class 1E system which serves as a standby to the offsite power system. The safety function of the alternating current onsite emergency power system (assuming the offsite power system is not functioning) is to provide sufficient capacity and capability to assure that the structures, systems and components important to safety perform as intended. The objective of our review was to determine that the alternating current onsite emergency power system has the required redundancy, meets the single failure criterion, is testable, and has the capacity, capability, and reliability to supply power to all required safety loads in accordance with the requirements of General Design Criteria 5, 17 and 18.

The onsite ac power system consists of various auxiliary electrical systems designed to provide electric power to Class 1E and non-Class 1E station loads. The Class 1E portion of the alternating current onsite power system is comprised of three redundant and independent 4.16 kilovolt ESF distribution systems with their 480 volt load centers and motor control centers, 120 volt vital alternating current power system and the standby power supplies (diesel generator units). The three 4.16 kv ESF buses are normally connected to the Startup Auxiliary Power Transformer through their respective 4.16 kv non-Class 1E buses and associated circuits on an immediate available basis for safe plant shutdown. The Divisions 1 and 2 4.16 kv ESF buses are also connected to the Backup Auxiliary Power Transformer which can be made immediately available as the second alternate source of offsite power.

The normal source of power for the station loads is from the unit auxiliary transformer. Failure of this transformer is detected by relays in the unit trip protective system and by undervoltage relays. Failure of the normal power supply for any reason causes immediate tripping of the normal supply circuit breakers and simultaneous closing of the startup transformer supply circuit breakers. The startup transformer circuit breakers are interlocked to close only after the normal source circuit breakers have opened, thus preventive closing into a fault. This arrangement provides virtually continuous feed to the Class 1E and non-Class 1E switchgear buses of all Divisions by a fast transfer scheme.

Upon loss of both normal and startup sources, the tie breakers between the 4.16 kv Class 1E and the 4.16 kv non-Class 1E switchgear buses are automatically opened, thereby shedding all loads supplied through the 4.16 kv non-Class 1E buses. The 4.16 kv Class 1E bus undervoltage relays cause a trip of all the 4.16 kv feed breakers except those breakers supplying the 480 volt substations (transformers). The Divisions 1 and 2 (4.16 kv Class 1E buses) are then automatically transferred to the 115/4.16 kv backup transformer. In the event this source is also unavailable (loss of all offsite power), these buses are automatically transferred to the onsite emergency sources (Division 1 and 2 diesel generators). The loads are sequenced on the diesel generators on a time priority basis. The Division 3 (HPCS) 4.16 kv Class 1E bus is not connected to the backup source; loss of the normal and startup offsite power sources causes automatic transfer of the Division 3 loads to the onsite emergency HPCS diesel generator. Load shedding is not required since there is only one large motor load in this division.

The onsite emergency power system for the WNP-2 consists of three diesel generator sets. Each diesel generator and its associated equipment is located in a separate seismic Category 1 structure. Each diesel generator is automatically started by either a safety injection actuation or an emergency bus undervoltage signal on its respective emergency bus. Each diesel generator is capable of attaining rated voltage and frequency within 10 seconds after receiving a starting signal. After obtaining rated voltage and frequency, the generators are connected automatically to their respective emergency buses. Under accident conditions, the safety loads of the Divisions 1 and 2 will be connected in a predetermined sequence to their respective diesel generator while the safety loads of the Division 3 (HPCS bus) will be connected to its diesel generator with block loading. Each of Division 1 and 2 diesel generators is rated at 4400 kw for continuous operation, and has a 30-minute rating of 5150 kw and a 2000-hr rating of 4650 kw while HPCS Division 3 diesel generator is rated at 2600 kw for continuous operation, and has a 30-minute rating of 3030 kw and a 2000-hr rating of 2850 kw. The continuous rating exceeds the maximum predicted operating loads. The applicant has documented that tests will be performed to demonstrate that during the loading sequence, the frequency and voltage are maintained above a level below which, would degrade the performance of any load below minimum requirements. The design and continuous rating are consistent with Regulatory Guide 1.9 and IEEE 387-1977 and, therefore, are acceptable.

Branch Technical Position ICSB 2 (PSB) requires that new and previously untried diesel generator designs to be used in nuclear power plant service undergo a prototype reliability verification testing program. The staff review indicates that the diesel generators have successfully passed a prototype reliability verification program of 300 valid start and load tests with no more than three allowed failures. This is in conformance with the staff position and is, therefore, acceptable.

We approved the General Electric Topical Report NEDO-10905, "High Pressure Core Spray System Power Supply Unit." This report includes a prototype qualification test plan, test procedures and acceptance criteria for the HPCS diesel generator. The staff reviewed the applicant's test plan and procedures of HPCS diesel generator which requires successful prototype reliability verification program of 69 valid start and load tests with no failure.

Failure of the unit to successfully complete this series of tests will require a review of the system design adequacy and the cause of the failure, and the tests will continue until 128 valid tests are achieved with no more than one failure. This qualification program is in conformance with the staff position and is acceptable. The applicant has not yet provided the results of the reliability testing programs for our review. The successful culmination of such a test program provides sufficient bases to conclude that the HPCS diesel generator has the reliability required by General Design Criterion 17. This documentation is expected soon and we will address our review of these results in a supplement to this report.

IEEE 387-1977 Section 5.6.2.2(1) and Regulatory Guide 1.108 position C.1.b.3 recommend that the periodic testing of diesel generator units should not impair the capability of the unit to supply emergency power within the required time. The diesel generator unit design should include an emergency override of the test mode to permit response to bona fide emergency signals and return control of the diesel generator unit to the automatic control system. In WNP-2, the diesel generator design has the override feature to enable a diesel generator in the test mode to respond to an emegency signal. During the periodic testing of a diesel generator, if a safety-injection actuation signal occurs, the diesel generator in the test mode is disconnected from parallel operation with the offsite power system and maintained in the emergency standby mode. In the event of a loss-of-voltage in the emergency buses, the diesel generator unit would be ready to accept load. This design feature satisfies the staff concern on this subject and is, therefore, acceptable.

Branch Technical Position ICSB 17 (PSB) (in Appendix 8A of the Standard Review Plan) requires that diesel generator protective trips be bypassed when the diesel generator is required for a design-basis event. All protective trips are allowed during periodic testing. The allowed exceptions to the above requirement for bypassing are diesel engine overspeed and generator differential current. Any other trips retained must utilize coincident logic in order to avoid spurious trips. In case of a design-basis accident, the applicant is bypassing all the protective trips except engine overspeed and generator differential. This is in full conformance with the staff position and is acceptable.

We have reviewed the diesel generator alarms and status information provided for the control room operator. The control room annunciation consists of single input alarms and common alarms. The annunciator window engraving for the single input alarms identifies the specific nature of the problem. The window engraving for the common alarms is generalized. The applicant has presented a list of conditions in the FSAR that render the diesel generator units incapable of responding to an automatic emergency start signal. We have reviewed this information and conclude that each condition which can render a diesel generator unit incapable of responding to an automatic emergency start signal is input to the common alarms in the control room and, therefore, we find this acceptable.

A non-Class 1E uninterruptible power supply system, 120/240 volt, ac grounded single phase is provided for non-Class 1E station service such as plant communication, computer and plant instrumentation. The power supply system consists of an inverter, a static switch, a regulating transformer, a bypass transformer, a manual bypass switch and distribution panel. Normally, the distribution panel is supplied from the inverter. The inverter is fed from a 250 volt dc station battery. In the event of loss of the inverter, a regulating transformer powered from a 480 volt Class 1E motor control center provides the backup power supply through an automatic transfer switch. The backup power supply circuit breakers are mechanically interlocked with the normal power supply circuit breakers so that only one circuit breaker can be closed at a time. A manual bypass switch is also provided to bypass the entire uninterruptible power system and to transfer load to the bypass transformer. The non-Class 1E instrumentation power system, 120/208 volt, ac neutral grounded three phases, is supplied to the non-Class 1E instrumentation loads. The system consists of non-Class 1E 120/208 volt distribution panels supplied from the 480 volt Class 1E MCC via 480/120/208 volt stepdown transformers.

The WNP No. 2 has two independent reactor protection system (RPS) non-Class 1E 120 volt power supplies. The normal 120 volt ac power supply source for each RPS is derived from a high inertia motor-generator set. Each motor-generator set has a voltage regulator which is designed to respond to a step load change of 50% of rated load with an output voltage change of not more than 1.5%. The driving motor operates from a 480 volt Class 1E motor control center. The high inertia provided by the flywheel is to maintain voltage and frequency within 5 percent of rated values for at least 1.0 second following a loss of power to the motor. The alternate 120 volt ac power supply source is derived from the non-Class 1E motor control center through a 480/120 volt, single phase transformer. A selector switch is provided for the selection of either power supply and prevents paralleling the motor generator set with the alternate supply.

There are two Class 1E critical plant instrumentation power systems, 120/240 volt ac grounded single phase. The critical power is normally fed from 15 KVA static inverter - static switch arrangements supplied by both the 125 volt dc battery system as normal sources and the critical ac distribution panels as alternate sources. The static switches immediately transfer from the inverter sources to the alternate sources upon loss of inverter output. The system is divided into Division 1 and 2 redundant circuits, with separate inverters and static switches feeding into separate distribution panels in the main control room for service to ESF circuits in the nuclear steam supply system. The two bus arrangement provides a separate single-phase electric power supply to each of the two divisions that are electrically and physically isolated from the other division.

The Class 1E portion of the emergency onsite power and distribution system is designed to permit the following testing and inspections:

(1) During equipment shutdown, periodic inspection and testing of wiring, insulation, connections, and relays to assess the continuity of the systems and the condition of components.

(2) During normal plant operation, periodic testing of the operability and functional performance of standby onsite power supplies circuit breakers and associated control circuits, relays, and buses.

(3) During plant shutdown, testing of the operability of the Class 1E system as a whole. Under conditions as close to design as practical, the full operational sequence that brings the system into operation, including operation of signals of the engineered safety features actuation system and the transfer of power between the offsite and the standby onsite power systems, will be tested.

This meets the requirements of GDC 18, "Inspection and Testing of Electric Power System," and is acceptable.

The applicant has applied the following design criteria to the Class 1E equipment:

(1) Motor Size - Motor size (horsepower capability) is equal to or greater than the maximum horse power required by the driven load under normal running, runout, or discharge valve (or damper) closed condition. Motors are sized in accordance with NEMA standards.

(2) Motor Thermal Overloads - For Class 1E motors having a 1.15 service factor, motor thermal overloads are selected to protect against 125% of fuel load current. Motors having a 1.0 service factor are provided with overloads rated one size lower. Motor thermal loads for motor-operated valves are selected to protect against 140% of full load current. Motor control centers are located in environmentally controlled rooms such that overload ambient temperature variation is not a significant factor.

(3) Minimum Motor Accelerating Voltage - The electrical system is designed so that the total voltage drop on the Class 1E motor circuits is less than 20 percent of the nominal motor voltage. The Class 1E motors are specified with accelerating capability at 80 percent nominal voltage at their terminals.

(4) Motor Starting Torque - The motor starting torque is capable of starting and accelerating the connected load to normal speed within sufficient time without exceeding the thermal capability of the motor to perform its safety function for all expected operation conditions, including the design minimum terminal voltage.

(5) Minimum Motor Torque - The minimum motor torque margin over pump torque through the accelerating period is determined by using actual pump torque curve and calculated motor torque curves at 80 and 100 percent terminal voltage. The minimum torque margin (accelerating torque) is such that the pump-motor assembly reached nominal speed in less than five seconds. This margin is usually not less than 10 percent of the pump torque.

(6) Motor Insulation - The insulation for continuous rated motors has a 40 years life expectancy for the duty and the ambient condition of temperature, pressure and radiation at which they are required to operate. For Class 1E motors located within the containment, the insulation system is selected to withstand the postulated accident environment.

(7) Temperature Monitoring Devices in Large Horsepower Motors - Six resistance temperature detectors (RTD) or copper-constantan thermocouples are provided in the motor stator slots, two per phase, for the HPCS, LPCS, RHR and standby service water pump motors. In normal operation, the RTD at the hottest location (selected by test) monitors the motor temperature and provides an alarm on high temperature. Motors 300 HP and larger are provided with one or more copper-constantan

thermocouples in each bearing to alarm on high temperature.

(8) Interrupting Capacities - The interrupting capacities of the protective equipment are determined as follows:

a. Switchgear -

Switchgear interrupting capacities are greater than the maximum short circuit current available at the point of application. The magnitude of short circuit currents in medium voltage systems is determined in accordance with ANSI C37.010.1972. The offsite power system, a single operating diesel generator, and running motor contributions are considered in determining the fault level. High voltage power circuit breaker interrupting capacity ratings are selected in accordance with ANSI C37.06-1971.

b. Load Centers, Motor Control Centers, and Distribution Panels -

Load center, motor control center, and distribution panel interrupting capacities are greater than the maximum short circuit current available at the point of application. The magnitude of short circuit currents in low-voltage systems is

determined in accordance with ANSI C37.13-1973, and NEMA AB1. Low-voltage power circuit breaker interrupting capacity ratings are selected in accordance with ANSI C37.16-1970. Molded case circuit breaker interrupting capacities are determined in accordance with NEMA AB1.

(9) Electrical Circuit Protection - The basic coordination of the protective relaying for the 4.16 kv and volt systems is as follows:

a. A faulted piece of equipment is cleared by isolating the smallest possible portion of the system.

b. A faulted piece of equipment is cleared as quickly as possible to minimize damage to that equipment and the effects on the remainder of the system.

c. In the event that the primary protective device fails to clear the fault, a backup device operates to clear it after a suitable coordination interval. Operation of a backup device usually results in de-energizing a larger portion of this system than the operation of a primary device.

(10) Grounding Requirements - The design criteria for grounding are as follows:

a. Equipment hardware, exposed surfaces, and potential induced voltage hazards are adequately grounded to ensure that no danger exists for plant personnel.

b. A high resistance ground return path is provided to facilitate the operation of ground fault detection devices in the event of ground fault or insulation failure on any electrical load or current. Ground fault currents are thereby limited to 12.5 amperes (maximum) in the 6.9 kv and 4.16 kv systems, and to 10 amperes (maximum) in the 480 V system. The 120/208 volt system is solidly grounded.

c. A separate and independent grounding system for instruments and instrument wire sheld is provided.

The above citeria are in conformance with section 8.1 of this report and are acceptable.

As a result of its review of the emergency onsite ac power system, the staff has determined that there are no automatic transfer of loads or sources between redundant emergency buses, which is in accordance with Regulatory Guide 1.6. There is no sharing of emergency power sources between units, which is in accordance with Regulatory Guide 1.81. The three divisions of the emergency power and distribution system are independent, meet the single-failure criterion, and have the capability and capacity as required by GDC 17. The design is in conformance with IEEE Standard 308-1974, as endorsed by Regulatory Guide 1.32. The electric power systems are designed to permit inspection and testing of all Class 1E systems. Periodic testing is performed on a scheduled basis to demonstrate the operability and continuity of all safety-related systems and components, in accordance with GDC 18. Therefore, the staff finds the emergency onsite ac power system acceptable except as discussed above.

8.3.2 Direct Current Power Systems

The Class 1E direct current power system provides the alternating current onsite emergency power systems with control power as required. It also provides both motive and control power to selected safety-related equipment. The objectives of our review were to determine that the direct current power system is designed in accordance with the applicable genera[illegible]sign criteria and recommendations and guidelines set forth in Section 8.1 of this report; and to establish that it has the required redundancy, meets the single failure criterion, and has the capacity, capability and reliability to supply power to all required safety loads.

The Class 1E direct current system for WNP-2 consists of three 125 volt dc subsystems, one 250 volt dc subsystem and two ± 24 volt dc subsystems. Each of the three Class 1E 125 volt power subsystems provides the control and motive power for its associated Class 1E ac power load group channel; 4.16 kv switchgear, and 480 volt load centers. The dc control power for each diesel generator is provided by its corresponding 125 volt dc subsystem. Loss of dc power to the diesel generator is indicated on annunciators in the main control room.

The Class 1E 250 volt dc subsystem feeds dc power to a solid state inverter to supply 120/240 volt ac power on an uninterruptible basis to plant controls, instrumentation, computer and communication equipment. It also supplies 250 volt dc power directly to the RCIC system motor operated valves and the turbine auxiliary oil pumps. Plant 120/240 volt ac loads and turbine oil pump loads are classified as non-essential. The supply system to the main 250 volt dc distribution panel, including the panel, battery charger, and incoming 480 volt ac normal source are Class 1E (Division 1).

Two separate and independent Class 1E, ± 24 volt dc subsystems supply the dc power to Division 1 and 2 equipment in the main control room. Each Class 1E dc subsystem consists of one battery bank, one battery charger and one Class 1E distribution panel. The battery charger for each ± 24 volt dc subsystem is supplied from its respective Division 1 or 2 120 volt ac vital power panel.

Each dc battery is separately housed in ventilated room apart from its charger and distribution panel. Each subsystem is located in an area separated physically and electrically from other systems to ensure that a single failure in one train does not cause failure in the redundant train. All the essential components of the Class 1E dc systems are housed in seismic Category I structures. There is no sharing between redundant Class 1E trains of equipment such as batteries, battery chargers, or distribution panels.

Each Class 1E dc subsystem has the capacity to continuously supply all the connected normal running load while maintaining its respective battery in a fully charged condition. Each battery is capable of carrying the essential load continuously for two hours in the event of a total loss of onsite and offsite ac power.

Each battery charger is capable of floating the battery on the bus or recharging the completely discharged battery within 24 hours while supplying the largest combined demands of the various steady-state loads under all plant operating conditions.

The dc subsystems chargers are supplied from the same ac load group for which the dc subsystem supplies the control power. The dc subsystems conform to Regulatory Guide 1.6 "Independence Between Redundant Standby (Onsite) Power Sources and Between Their Distribution Systems," and fulfills the recommendations of IEEE Std. 308-1974 and requirements of GDC 17, "Electric Power Systems." We have reviewed the provisions described in the Final Safety Analysis Report for Testing the Class 1E direct current power system and conclude that the design will be capable of meeting the requirements of GDC 18, "Inspection and Testing of Electric Power Systems."

The specific requirements for dc power systems monitoring derive from recommendations embodied in section 5.3.2(4), 5.3.3(5) and 5.3.4(5) of IEEE Std. 308-1974. In summary, these general recommendations and guidelines simply state that the DC system (batteries, distribution systems and chargers) shall be monitored to the extent that it is shown to be ready to perform its intended function. Accordingly, the guidelines used in the licensing review of the DC power system designs are as follows:

The following indications and alarms of the Class 1E dc power system status shall be provided in the control room:

- Battery current (ammeter-charge/discharge)
- Battery charger output current (ammeter)
- DC bus voltage (voltmeter)
- Battery charger output voltage (voltmeter)
- Battery high discharge rate alarm
- DC bus undervoltage and overvoltage alarm
- DC bus ground alarm (for ungrounded system)
- Battery breakers) or fuse(s) open alarm
- Battery charger output breaker(s) or fuse(s) open alarm
- Battery charger trouble alarm (one alarm for a number of abnormal conditions which are usually indicated locally)

It has been concluded that the above cited monitoring, augmented by the periodic test and surveillance requirements included in the Technical Specifications, provide reasonable assurance that the Class 1E dc power system is ready to perform its intended safety function.

The following monitoring instruments and alarms called for in the above cited guideline have been provided in the control room of the WNP No. 2:

- Battery current (ammeter-charge/discharge)
- Battery charger output current (ammeter)
- DC bus voltage (voltmeter)
- Battery charger output voltage (voltmeter)
- DC bus undervoltage and overvoltage alarm
- DC bus ground alarm (for ungrounded system)
- Battery breaker(s) or fuse(s) open alarm
- Battery charger output breaker(s) or fuse(s) open alarm
- Battery charger trouble alarm (one alarm for a number of abnormal conditions which are usually indicated locally)

The following alarm has not been provided in the control room with the following justification.

- Battery high discharge rate alarm. The high discharge rate can only occur if there is an undervoltage on the dc bus or a ground fault between the bus and the battery. Since both of these two conditions are alarmed in the control room, the addition of the high discharge rate alarm is not required.

We have reviewed the monitoring systems (instruments and alarms) and concluded that these are acceptable.

8.4 Other Electrical Features and Requirements for Safety

This section presents other electrical features and requirements applicable to the WNP-2 design for safety which deal with distinct aspects of the design of the offsite power system and/or onsite power systems. The objective of our review is to determine that these electrical features and requirements are implemented in accordance with all applicable acceptance criteria set forth in section 8.1 of this report. Our discussion and evaluation of each of these matters is as follows:

8.4.1 Physical Identification and Independence of Redundant Safety-Related Electrical Systems

The applicant has provided criteria in the FSAR for physical identification and separation of electrical equipment to preserve the independence of redundant equipment. Physical identification of safety-related electrical systems is accomplished as follows: Each cable and raceway is color coded to indicate its separation group. This identification provides a means of distinguishing a cable, raceway and equipment associated with a particular separation group. Exposed raceways containing Class 1E cables are marked by color codes in a distinct permanent manner at intervals not to exceed 15 ft. and at points of entry to and exit from enclosed areas. In general, all Class 1E cables and associated cables are jacket color-coded throughout their entire length. Cables that require field color coding will be so marked at intervals not to exceed 5 ft. Non-Class 1E equipment, raceways, and cables in raceways are not marked by color code and have a black outer jacket.

In plant areas which are free from potential hazards such as missiles, external fires, and pipe whip, the minimum seperation between redundant cable trays is 3 ft between trays separated horizontally and 5 ft. between trays separated vertically. In the cable spreading areas and the control room the miminum separation between redundant cable trays is 1 ft. between trays separated horizontally and 3 ft. between trays separated vertically. Where plant arrangements preclude maintaining the minimum separation distance, the redundant circuits are run in solidly enclosed raceways or other barriers provided between redundant circuits in accordance with IEEE Standard 384-1977. In addition, each reactor protection system or ESF system at the channel level has its own distinct color. Protection of equipment against simultaneous failures is achieved by physical arrangement and separation between redundant Class 1E systems.

Each diesel generator, including its associated auxiliaries, is located in a separate room. The electrical switchgear of one division is separated from that of other divisions by locating them in different rooms and different buildings.

Each Class 1E dc battery is located in separate and independently ventilated rooms. Battery chargers and distribution panels of one division are separated from those of other divisions by locating them in separate rooms.

Where non-Class 1E loads are connected to Class 1E power distribution system or are routed in the same raceways with Class 1E circuits, they are designated as associated circuits. The associated circuits are subject to the same requirements as the Class 1E circuits, such as identification, derating, environmental qualification, flame retardance, splicing restriction, raceway fill, and separation.

Separation requirements between the Class 1E circuits including the associated circuits and non-Class 1E circuits are the same as separation of redundant channel/division.

Based on its review of the applicant's design criteria regarding physical identification, separation, and independence of redundant safety-related electrical systems, the staff finds these criteria to be in accordance with the IEEE Standard 384-1977 and, therefore, acceptable. However, the staff will verify the implementation of applicant's design criteria for these areas during a site visit.

8.4.2 Reactor Containment Electrical Penetrations

General Design Criterion 50 requires, in part, that the reactor containment structures including penetrations, be designed so the containment structure can, without exceeding the design leakage rate, accommodate the calculated pressure, temperature, and other environmental conditions resulting from any loss-of-coolant accident.

Therefore, the main objective of our review was to determine that the electrical penetration assemblies are designed to withstand, without the loss of mechanical integrity, the maximum available fault current versus time conditions that could occur given single random failures of circuit overload protection devices. Our review also established that the electrical penetration design satisfies IEEE Standard 317-1972, "Electric Penetration Assemblies in Containment Structures for Nuclear Power Generating Stations." as augmented by Regulatory Guide 1.63. "Electric Penetration Assemblies in containment Structures for Water-Cooled Nuclear Power Plants," (October 1973).

The applicant has documented that electrical penetration power conductors regardless of voltage level are sized to withstand, without loss of mechanical integrity, the maximum available fault current for the period of time sufficiently long enough to allow back-up circuit protection to operate assuming a failure of the primary protective device. The circuit overload protection systems for electrical penetration assemblies meet the single-failure criterion. The applicant has applied the following design criteria to the containment electrical penetration circuits.

Reactor recirculation pumps are the only 6.9 kv loads inside the containment. The primary and backup protection of these circuits is provided by two circuit breakers in series. DC control power for these breakers comes from different sources. This is in accordance with Regulatory Guide 1.63 and acceptable.

480-volt circuits are protected by a fuse and a coordinated backup circuit breaker.

For 120 volt ac control circuits, there are two types to be considered: (1) circuits energized by a control transformer in a MCC and (2) circuits energized by a 120 volt ac instrument distribution panel. The 120 volt ac circuits are protected by two identical fuses in series.

We have reviewed the above information and conclude that the designs provide independent primary and backup fault protection for each load to preclude a single failure from impairing the integrity of a containment electrical penetration and, therefore, are acceptable.

8.4.3 Thermal Overload Protection Bypass

Motor-operated valves equipped with thermal overload protection devices are used in valve motors for safety systems and their auxiliary supporting systems. Operating experience has shown that indiscriminate application of thermal overload protection devices to the motors associated with these valves could result in needless hindrance to successful completion of safety functions. Regulatory Guide 1.106 recommends (in position C.1) bypassing thermal overload devices during accident conditions or (in position C.2) selecting the setpoints for the thermal overload in a manner that precludes spurious trips. In the WNP-2 design, motor thermal overloads for Class 1E motor-operated valves are selected two sizes larger than the normally selected thermal overload. This approximates 140% of motor full load current. Selection of overloads in this range, 140% of full load current, permits Class 1E MOVs to operate approximately 10 minutes. At locked rotor current, the overload relays will trip the larger motors within approximately six seconds and the smaller motors within approximately 10 seconds. The MCC fuses will also provide locked rotor current protection. For most of the larger motors, the fuses would clear the circuit between 6 and 10 seconds. Class 1E motor control centers are located in environmentally controlled rooms such that overload ambient temperature variation is not a significant factor. To insure the accuracy of the trip setpoint, periodic surveillance testing of thermal overloads serving safety-related MOVs will be in accordance with WNP-2 technical specifications. A representative sample of at least 25% will be tested at least once every 18 months.

On the basis of our review of the thermal overload protection devices for the Class 1E motor-operated valves, we conclude that there is reasonable assurance that the selection of the setpoint is such that the overload devices will not prevent successful completion of the safety function and will preclude spurious trips and this design is, therefore, acceptable.

8.4.4 Adequacy of Station Electric Distribution System Voltages

Events at the Millstone station have shown that adverse effects on the Class 1E loads can be caused by sustained low grid voltage conditions when the Class 1E buses are connected to offsite power. These low voltage conditions will not be detected by the loss of voltage relays (loss of offsite power) whose low voltage pickup setting is generally in the range of .7 per unit voltage or less.

The above events also demonstrated that improper voltage protection logic can itself cause adverse effects on the Class 1E systems and equipment such as spurious load shedding of Class 1E loads from the standby diesel generators and

spurious separation of Class 1E systems from offsite power due to normal motor starting transients.

A more recent event at Arkansas Nuclear One (ANO) station and the subsequent analysis performed disclosed the possibility of degraded grid voltages, due to deficiencies in equipment between the grid and the Class 1E buses or by the starting transients experienced during certain accident events not originally considered in the sizing of these circuits.

Based upon these above events, the staff has developed PSB BTP-1 "Adequacy of Station Electric Distribution System Voltages," as stated in NUREG-0800 (SRP).

The following addresses the problem areas revealed during our review of the WNP-2 design for conformance with the corresponding position numbers in the above stated BTP.

There are three redundant and independent emergency buses. Each bus of Division 1 and 2 has two levels of undervoltage protection: (1) Loss of power and (2) degraded grid voltage. Division 3 (HPCS) has loss of power undervoltage protection only. The loss of power protection at the 4.16 kv emergency buses consists of two single phase instantaneous relays with a setpoint at 69 percent of the rated bus voltage. The relays are arranged in a two-out-of-two logic with three timers (2 two-second and 1 five-second timers) for Division 1 and 2, and with one timer for Division 3. In the event that voltage loss is maintained for two seconds, the first two second timers for the Division 1 and 2 trip the Class 1E bus normal/startup source breakers, institute load shedding, and initiate second two-second and five second timers. The second two-second timers are utilized to close the backup source breakers provided no undervoltage condition exists in the backup source. The five-second timer allows the diesel-generator breakers to close if power from the backup source is not available.

The single Division 3 one two-second timer initiates to close its diesel-generator breaker with permissive conditions.

The degraded grid voltage protection at the Division 1 and 2 4.16 kv buses consists of three single phase instantaneous relays with a setpoint at 87.3% of rated bus voltage with a 10-second timer. In the event of sustained bus undervoltage lasting more than 10 seconds, the second level undervoltage protection automatically isolates the feeder breaker connecting the normal/startup sources to their respective buses. This action results in loss of power, thereby, initiating the sequence of events described for the loss of power undervoltage sensing scheme above.

When the voltage on the HPCS bus degrades below the minimum operating voltage of the motor for HPCS loads but remains above the setpoint of the loss of power voltage relay, the staff requires demonstration that the Class 1E equipment on the HPCS bus will perform the required function within the specified time. Also, when the voltage on the 4.16 kv Class 1E bus (Division 1 and 2) degrades below the setpoint of the degraded voltage relays (instantaneous voltage relay) but remains above the setpoint of the loss of power relays for up to 10 seconds, the staff requires demonstration that the Class 1E equipment on these divisions will be able to perform the required function within the required time. The applicant has not yet provided this aspect of the design for our review and, therefore, this item remains open at this time.

The applicant has stated at the meeting that transformer taps will be set to obtain optimum voltage levels from no-load to fully loaded conditions.

Actual voltage levels will be compared with design analysis. The staff finds this to be consistent with its requirements. However, this needs documentation in the FSAR.

The applicant indicated that before initial full-power reactor operation, the verification testing will be performed on all sources of offsite power in accordance with the staff positions. We find this aspect of the design acceptable.

8.4.6 Non-Safety Loads on Emergency Sources

Present regulatory practice for operating license applications allows the connection of nonsafety loads in addition to the required safety loads to Class 1E (emergency) power sources if it can be shown that the connection of the non-safety loads will not degrade the emergency sources below an acceptable level.

The WNP No. 2 design provides for the connection of both safety and non-safety loads to the emergency buses of the alternating current and direct current onsite emergency power systems. All non-safety loads (as well as safety loads) are supplied through Class 1E circuit breakers which are equipped with fault-detection devices to isolate faulted components from the Class 1E system with minimum disturbance to the unfaulted portions. The direct current system's battery chargers and batteries are each sized with sufficient capacity to supply all Class 1E and non-Class 1E loads. To assure that the continuous rating of the diesel-generators is not exceeded during accident conditions coincident with the loss of offsite power, the design provides for the automatic disconnection of nonsafety alternating current loads upon the detection of an accident condition. Reconnection of these nonsafety loads to the emergency alternating current buses requires subsequent deliberate operator action.

On the basis of our review of the safeguard provision for connecting nonsafety loads on emergency power sources, we conclude that there is reasonable assurance that failure of the nonsafety loads will not degrade the emergency sources below an acceptable level and is therefore acceptable.

9.0 AUXILIARY SYSTEMS

9.5.2 Communication Systems

The communication system is designed to provide reliable intraplant and interplant (or plant-to-offsite) communications under both normal plant operation and accident conditions.

9.5.2.1 Intraplant Systems

The intraplant communications systems provide sufficient equipment of various types so that the plant has adequate communications to start up, continue safe operation, or safely shut down. The intraplant systems include:

(a) Public Address Systems

The public address (PA) system is designed to provide area paging throughout the plant by means of loudspeakers located to give optimum directivity and sufficient level to overcome high ambient noise (+10db over room ambient noise). Audio power to the speakers is supplied by preamps and amplifiers located on the PA equipment racks in the communications equipment room in the radwaste and control building. Power to the preamps and amplifiers is supplied from the UPS bus for reliable power supply.

The speakers in each building are connected in two separate circuit loops to provide alternate paths for partial

communication in case one section is damaged. Each building is connected to its own audo amplifier, and switching relays are provided to connect all of the audio amplifiers at once when an "all buildings" page is desired. Paging microphones, for an "all buildings" page are located in the main control and remote shutdown rooms of the radwaste and control building. Any telephone in the PDTS can make a paging call to a building or to all buildings.

The audio amplifiers have redundant or hot standby amplifiers which are automatically switched on line in case of failure of a primary amplifier. Failure of the amplifiers or speaker circuits is alarmed in the main control room and the remote shutdown room.

The building-wide alarm source consists of a multi-tone generator and a similar redundant or hot standby unit, both of which are located in the public address system equipment racks in the communications equipment room of the radwaste and control building. Each multi-tone generator is capable of generating five (5) different tones-a fire alarm, an evacuation alarm, and three undesignated alarms-throughout the plant via the public address system speakers. The redundant or hot standby tone generator is automatically switched on line in case of failure of the primary unit. Both units are powered from the UPS bus for reliable operation. The building wide alarm system tones have priority on the PA system.

(b) Telephone Systems

The public telephone system consists of central office trucks and tie lines installed by, and leased from, the General Telephone Company. These trunks and tie lines provide the following telephone service:

1. Individual direct trunks with direct inward and outward dialing access to the superintendent's office, main control room, primary guardhouse security central alarm station (CAS), remote shutdown room, and security secondary alarm station (SAS) in the main control room.

2. Provisions for extension of individual direct trunks with direct inward and outward dialing access to other plant locations.

3. Central office trunks to the PDTS switchboard exchange to facilitate controlled inward and direct outward dialing access to and from various plant locations and any location outside

the plant.

4. Tie lines to the PDTS switchboard exchange to facilitate direct inward and outward dialing access to and from various plant locations and the WPPSS Richland Offices or the WPPSS Nuclear Power Stations No. 1 and No. 4.

The switchboard exchange for private digital telephone System (PDTS) consists of an all electronic, stored program, computer controlled telephone switching system, with integral redundant computer, solid state circuitry and pulse code modulation/time division multiplexing switching techniques. The switchboard exchange and the attendants console, are respectively, located in the communications equipment room of the radwaste and control and the telephone attendants room of the service building. Outlying telephones are strategically placed throughout the plant complex. The system receives power from the UPS bus for reliable operation.

The PDTS provides complete inter-communication at all times between any two telephones. Connections are established by means of a pushbutton dial on each telephone.

Telephone communictions boxes (CBs) are provided throughout the plant. The CBs in offices have a single jack for plugging in a desk-type telephone. CBs in the operating and work areas have a PDTS telephone jack and a sound-powered telephone jack. Instrument and control panels in the control room have PDTS and sound-powered telephone jacks installed in the panels. Important operating and work areas, such as the control room, have permanently mounted PDTS telephone wired into the terminals of the CB, leaving the PDTS jack available for a portable telephone. Other operating and work areas use portable telephones plugged into the jacks.

Headsets are plugged into adaptor jacks connected to permanently mounted telephones in the operating and work areas when hands-free communication is required.

Tie lines connect the PDTS to the BPA microwave communications system in the communications equipment room to provide telephone communications with BPA.

Half-type acoustically treated telephone booths are used with outlying telephones in locations of high noise level, in order to permit the satisfactory operation of the telephones in noisy environments. In addition, each telephone in a high noise level location is

equipped with a noise-cancelling transmitter to limit undesirable background noise from entering into the conversation link.

(c) Sound Powered Telephone System

The sound powered telephone system consists of jacks installed in the communications boxes and the connecting wiring. The system is divided into eight circuits. Each circuit serves a different area of the plant. All wiring is routed to a terminal box located in the communications equipment room. The terminal box is equipped with jumpers for interconnecting the circuits. During normal operation, the jumpers are connected to form a single bus so that all sound-powered jacks are connected in parallel. Each circuit can be isolated at the terminal box if shorts or grounds occur. Portable sound-powered telephones are plugged into the jacks to complete a communications link. This system does not require any power supply because all required energy is generated by the speaker.

(d) Radio Communication System

The radio communication system for WNP-2 is integrated into the WPPSS radio system that provides communications for all WPPSS facilities in the Richland area. These include Nuclear Generating Stations WNP-1, 2 and 4 and the Main Offices.

Six frequencies have been assigned for use by WPPSS for all radio communications at this time. Four of the six frequencies available are used as duplex channels for communication via repeaters located on Rattlesnake Mountain. The other two frequencies are used for simplex communication from radio to radio.

One duplex channel and one repeater is dedicated to security communications. Radio located in the Franklin County Sheriff's Office in Pasco, Emergency Dispatch Center in Kennewick, and the Department of Energy in Richland provide for communications with the Local Law Enforcement Agencies (LLEA). Radios are also located at each WPPSS generating stations and the Main Office to provide security communications among all WPPSS facilities.

One simplex channel is dedicated to security communications. This channel is used for communications that do not require the repeater, e.g., base-station-to-base-station, portable-to-portable, or portable-to-base-station. The simplex channel serves as a backup to the main security duplex channel.

The other duplex and simplex channels provide all Operations and Maintenance (O&M) communications including paging, operations, maintenance, testing and intraplant emergency. The duplex channel operates via the second repeater to reach radios in WPPSS facilities, portable and mobile radios, and paging receivers. Emergency radio communications to the LLEAs are transmitted and received on the security duplex channel.

The WNP-2 radio system consists of:

1. two base station transceiver units and associated remote controls,

2. two separate radio receivers,

3. paging encoder units,

4. radio patch units,

5. portable hand-held radios, and

6. mobile radios in vehicles.

The base stations are duplicate units with the same frequencies and output power. Four two-way communications channels are provided. Two channels are dedicated to plant O&M and two are dedicated to security communications.

The nonmobile and nonportable components of the system are powered from UPS buses for reliable operation.

9.5.2.2 Interplant (Plant-to-Offsite) Communication Systems

The design basis for interplant communications is to provide dependable communications for reliable operation. The interplant communication systems include:

(a) Telephone Communication

Discussed in section 9.5.2.1 of this SER.

(b) Radio System

Discussed in section 9.5.2.1 of this SER.

(c) Automatic Transmission (AT) Telephone Link to the Ashe Substation for Connection to the BPA Dittmer Control Center

This circuit consists of telephones located in the main control and remote shutdown rooms of the radwaste and control building which are directly connected to the WPPSS WNP-2 BPA microwave equipment. These special green phones provide automatic ringing without dialing to the Dittmer Control Center of BPA.

The scope of review included assessment of the number and types of communication systems provided, assessment and adequacy of the power sources, and verification of functional capability of the communications system under all conditions of operation.

The base for acceptance in the staff review was conformance of the design criteria and bases and design of the installed communication systems to the acceptance criteria in Section II of the Standard Review Plan 9.5.2. Other basis for acceptance was conformance to industry standards, and the ability of the systems to provide effective communications from diverse means within WPPSS Unit 2 during normal and emergency conditions under maximum potential noise levels.

Based on our review, we conclude that the installed communication systems at WPPSS Unit 2 conform to the above cited standards, criteria and design bases, they can perform their design functions and are, therefore, acceptable.

Special requirements needed for the communication systems to satisfy Appendix "A" to Branch Technical Position CMEB 9.5-1, "Fire Protection for Nuclear Power Plants," will be reviewed during the fire protection review of WPPSS Unit 2. Additional requirements may be imposed to further improve the capability of the communication system resulting from the fire

protection review.

9.5.3 Lighting System

The lighting system for WPPSS Unit 2 is designed to provide adequate lighting in all areas of the station and consits of normal and standby (essential) ac lighting systems, and emergency dc lighting system and a battery powered emergency lighting system. The design is based on illumination levels that equal or exceed those recommended by the Illuminating Engineering Society for central stations.

(a) AC Normal Lighting System

This system consists of two completely redundant systems (A & B), which are energized continuously from the plant nonsafety related 480 volt auxiliary system motor control centers directly from 3 phase 480 volt, or through 208Y/120 volt dry type lighting transformers and local area lighting panels. Fluorescent, incandescent, and H.I.D. sources are used for the normal ac lighting system (except over the drywell, fuel pools, and suppression pools, where incandescent is used).

(b) AC Standby (Essential) Lighting System

The essential lighting system supplements the normal lighting and provides a minimum level of illumination

in about 15% of the plant (control room, remote shutdown room and other vital areas needed to shutdown the plant) in the event of a failure of the normal lighting system. This system is energized continuously from the safety related 480 volt motor control centers through 3 phase 4 wire 208Y/120 volt dry type lighting transformers, and consists of two completely redundant systems (Divisions 1 and 2). Each system has ac lighting energized continuously from critical buses which are connected both to offsite power sources and associated standby diesel generators. Upon loss of offsite power, each bank of the essential lighting load is reenergized from its associated standby diesel generator source.

(c) <u>DC Emergency Lighting System</u>

The dc emergency lighting system consists of two completely redundant systems (1 and 2) of incandescent lighting fixtures supplied from 125 volt dc plant emergency batteries which provides lighting to the main control room, remote shutdown area, and the access routes to these areas. The system is normally deenergized and is automatically energized upon loss of ac power to the essential lighting system. The ac standby and dc emergency lighting systems are kept separate throughout the plant so that a failure in one system will not cause the other system to fail.

(d) <u>Battery Powered Emergency Lighting System</u>

The battery-powered emergency lighting system consists of self-contained battery-operated lighting units to provide additional backup lighting to dc Emergency lighting and are located throughout the plant to provide for evacuation of personnel and in areas necessary for safe shutdown. The units are normally deenergized and operate automatically upon loss of ac normal or standby lighting system in the immediate area. These units have rechargeable batteries and battery chargers which receive power from the normal or standby lighting systems.

The plant lighting systems are designed so that a single failure cannot degrade the essential lighting below a safe level.

The plant lighting systems are tested at installation and provisions are installed for testing and dc emergency system.

The FSAR includes a tabulation of lighting provided in each of the vital areas of the plant where normal and emergency lighting is needed for the safe shutdown of the reactor. Certain vital areas such as the vital switchgear rooms and portions of the diesel generator building are provided only

with ac lighting - normal, emergency, or both. Upon loss of ac lighting, there is no lighting in those areas. This is unacceptable. Access to these areas is needed to achieve plant shutdown, i.e., restore lighting and restore operation of ac equipment needed to shutdown the plant are located in these areas. We require that adequate dc or battery powered lighting also be provided in these vital areas. The applicant has been informed of this position and is evaluating the problem.

The scope of the review of the lighting system for WPPSS Unit 2 included an assessment of all subsystems and components necessary to provide adequate lighting during both normal and emergency operating conditions, the adequacy of the power sources for the normal and emergency lighting systems, and verification of functional capability of the lighting system under all conditions of plant operation.

The basis for acceptance in our review was conformance of the design bases and criteria, and design of the lighting systems and necessary auxiliary supporting systems to the acceptance criteria in Section II of Standard Review Plan 9.5.3. Other basis for acceptance was conformance to industry standards, and the ability to provide effective lighting in all areas of the WPPSS Unit 2 under all conditions of plant operations.

Based on our review, we conclude the various lighting systems provided at WPPSS Unit 2 are in conformance with the above cited standards, criteria design basis, they can perform their design function and are, therefore, acceptable, except as previously stated. Upon receipt of additional information, we will report our findings in a supplement to this SER.

Special requirements needed for the emergency lighting system to satisfy Appendix "A" to Branch Technical Position CMEB 9.5-1 "Fire Protection for Nuclear Power Plants," will be reviewed separately during the fire protection review of the WPPSS Unit 2 plant. Additional requirements may be imposed to further improve the capability of the lighting system resulting from the fire protection review.

9.5.4 Emergency Diesel Engine Fuel Oil Storage and Transfer System

9.5.4.1 Emergency Diesel Engine Auxiliary Support Systems (General)

There are two emergency and one HPCS diesel generators for WPPSS Unit 2 and each diesel engine has the following auxiliary systems which are addressed in detail in the SER sections indicated:

1. Fuel oil storage and transfer system (section 9.5.4.2),
2. Cooling water system (section 9.5.5),
3. Starting system (section 9.5.5),
4. Lubrication system (section 9.5.7), and
5. Combustion air intake and exhaust system (section 9.5.8).

This section of the SER applies to all of the above systems.

Except for portions of the diesel generator fuel oil fill and vent system, portions of the diesel generator exhaust system, the buried diesel fuel oil storage tanks, and a portion of the connecting fuel oil transfer piping up to the diesel generator building wall, the diesel generator and its auxiliary support systems, are housed in a seismic Category I diesel generator building structure, which provides protection from the effects of tornadoes, tornado missiles and floods. The buried portions of the fuel oil storage and transfer system are also protected from tornadoes, tornado missiles and floods. Therefore, the requirements of General Design Criterion 2, "Design Bases for Protection Against Natural Phenomena," General Design Criterion 4, "Environmental and Missile Design Basis," and the recommendations and guidance of Regulatory Guide 1.115, "Protection Against Low-Trajectory Turbine Missiles," and Regulatory Guide 1.117, "Tornado Design Classification," are met. Protection from the effects

tornadoes, tornado missiles and floods are evaluated in section 3.0 of this report. The exposed portions of the fuel oil fill and vent system and the diesel generator exhaust system are not protected from tornado missiles. Tornado missile protection for these items is discussed in sections 9.5.4.2 and 9.5.8, respectively. WPPSS Unit 2 is a single unit plant, thus, the requirements of General Design Criteria 5 "Sharing of Structures, Systems and Components" are not applicable.

The diesel engine and its engine mounted and separately skid mounted portions of the auxiliary support systems piping and components normally furnished with the diesel generator package are designed to seismic Category I requirements and follow the guidelines of the Diesel Engine Manufacturers Association (DEMA) standards. The diesel engine, and its mounted auxiliary support systems piping and components conform to the requirements of IEEE Standard 387-1977, "Standard Criteria for Diesel-Generator Units Applied as Standby Power Supplies for Nuclear Power Generating Stations," which endorses the Diesel Engine Manufacturers Association (DEMA) standard and guidelines of Regulatory Guide 1.9, "Selection, Design and Qualification of Diesel-Generator Units Used as Onsite Electric Power Systems at Nuclear Plants." The diesel engine and its auxiliary support systems meet the quality control requirements of 10 CFR 50 Appendix B. The

Quality assurance program is evaluated in section 17.0 of this report.

The applicant has defined the engine mounted piping as all piping on the engine and all piping on the engine auxiliary skid up to the first welded, screwed, or flanged connection on the skid. We find this unacceptable. We define the engine mounted piping as that piping from the engine block to the engine interface. This interface is the first welded, screwed, or flanged connection off the engine block. The applicant has been informed of this definition and all quality classification boundaries discussed in Section 9.5.4.1 through 9.5.8 are based on this definition.

Accumulation of dust including dust generated from concrete floors and walls on the electrical equipment associated with starting of the diesel generator (e.g. auxiliary relay contacts, control switches, etc.) is limited by the D/G building ventilation system design and operation, plant design and administrative procedures.

Operators and selected supervisory personnel will receive training on the diesel generators as a part of the cold license training program. Selected maintenance personnel will receive vendor training, and this training will be incorporated into maintenance department training. Maintenance on diesel generators will be performed or directly supervised by personnel who have received this

training. Ongoing training will include the requalification training program required by 10 CFR 55 for operations personnel, and maintenance departmental training for maintenance personnel.

The applicant discussed the manufacturer's recommendations for no-load and light-load operation of the diesel generators, The applicant has committed to implement the following procedures:

1. Implement the manufacturer's recommendations for no- and light-load operations.

2. During periodic testing, the diesel will be loaded to a minimum of 25% of full load or as recommended by the manufacturer.

3. During troubleshooting, no load operation will be minimized. If troubleshooting operation is over an extended period of time (i.e. 3 to 4 hours or more), the engine shall be cleared in accordance with item 1 above.

Preventive maintenance at WPPSS unit goes beyond the normal routine adjustments, servicing and repair of components when a malfunction occurs. The preventive maintenance

program encompasses investigative testing of components which have a history of repeated malfunctioning and require constant attention and report. The applicant will maintain a history file on all D/G component failures which will be reviewed periodically and after each diesel generator preventive and scheduled maintenance. Repeated failures of same or similar components would result in its replacement with a component of higher reliability.

Upon the completion of repairs or maintenance and prior to an actual start, run, and load test, a final equipment check is made to assure that all electrical circuits are functional, i.e., fuses are in place, switches and circuit breakers are in their proper position, no loose wires, all test leads have been removed, and all valves are in the proper position to permit a manual start of the equipment. After the unit has been satisfactorily started and load tested, the unit is returned to automatic standby service and under the control of the control room operator.

The applicant will perform preoperational and startup tests of the diesel engine auxiliary support systems in accordance with recommendations and guidelines of Regulatory Guide 1.68, "Initial Test Programs for Water Cooled Reactor Power Plants." The adequacy of the test program is evaluated in section 14.1 of this report.

The design of the diesel engine auxiliary support systems are evaluated with respect to the recommendations and guidelines of Branch Technical Positions ASB 3-1, Protection Against Postulated Piping Failures in Fluid System Piping Outside Containment," and MEB 3-1, "Postulated Break and Leakage Locations in Fluid System Piping Outside Containment." Evaluation of protection against dynamic effects associated with the postulated pipe system failures is covered in section 3.6 of this report.

The adequacy of the fire protection for the emergency diesel generator and associated auxiliary support systems with respect to the recommendations and guidelines of Branch Technical Position CMEB 9.5-1, "Guidelines for Fire Protection for Nuclear Power Plants," is evaluated in section 9.5.1 of this report.

The designs of the diesel generator auxiliary support systems also have been evaluated with respect to the recommendations of NUREG/CR-0660 "Enhancement of Onsite Emergency Diesel Generator Reliability." This report made specific recommendations on increasing the reliability of nuclear power plant emergency diesel generators. Information requests concerning these recommendations were transmitted to the applicant during the review process. The applicant responded in the amendments to the FSAR stating how they meet or will meet the recommendations of NUREG/CR-0660.

We have reviewed these responses and have determined that the applicant's conformance to the recommendations is as follows:

Recommendation	Conformance	SER Section
1. Moisture in Air Starting System	Partial	9.5.6
2. Dust and Dirt in D/G Room	Yes	9.5.4.1
3. Turbocharger Gear Drive Problem	Partial	9.5.4.1
4. Personnel Training	Yes	9.5.4.1
5. Automatic Prelube	Partial	9.5.7
6. Testing, Test Loading and Preventive Maintenance	Yes	9.5.4.1
7. Improve the Identification of Root Cause of Failures	Yes	9.5.4.1
8. D/G Ventilation and Combustion Air Systems	Yes	9.5.8
9. Fuel Storage and Handling	Yes	9.5.4.2

Recommendation	Conformance	SER Section
10. High Temperature Insulation for Generator	*	9.5.4.1
11. Engine Cooling Water	Yes	9.5.5
12. Concrete Dust Control	Yes	9.5.4.1
13. Vibration of Instruments	Partial	9.5.4.1

* Explicit conformance is considered unnecessary by the staff in view of the equivalent provided by the design, margin, and qualification testing requirements that are normally applied to emergency standby diesel generators.

On the basis of our review, we have concluded that there is sufficient assurance of diesel generator reliability to warrant unrestricted plant operation through the first refueling period. However, to assure long term reliability of the diesel generator installations, we require that the following design and procedural modifications be implemented prior to the first refueling.

1. <u>Moisture in Air Starting System</u>

This item is discussed in section 9.5.7 of this report.

2. Turbocharger Gear Drive Problem

The diesel generators at WPPSS Unit 2 have a turbocharger mechanical drive gear assembly whose gear ratio is 18.1. This drive gear assembly has not been designed to operate at no load or light load conditions and full rated speed for prolonged periods. The manufacturer, Electro-Motive Division of General Motors Corporation (EMD) has developed or has under development heavy duty turbocharger drive gear assemblies which meet the recommendationof NUREG/CR-0660. To improve the reliability and availability of the diesel generators on demand we require the installation of a heavy duty turbocharger drive gear assembly as recommended by NUREG/CR-0660. The applicants committed in a letter dated January 29, 1982 to implement this modification no later than the first refueling outage. We find this acceptable.

3. Automatic Prelube

This item is discussed in section 9.5.7 of this report.

4. Vibration of Instruments

Except for sensors and other equipment that must be directly mounted on the engine and associated piping, the applicant committed in a letter dated January 29, 1982 to have all controls and monitoring instrumentation

that are mounted on the engine skid installed in a free standing floor mounted panel separate from the engine skids, and located in a vibration free floor area. We find this acceptable, provided the controls and monitoring instrumentation is removed from the engine skid prior to startup.

The present diesel generator design meets the requirements of General Design Criteria 2, 4, 5, 17 "Electric Power System," 18 "Inspection and Testing of Electric Power Systems," and 21 "Protection System Reliability and Testability" of Appendix A of 10 CFR Part 50. Upon completion of the above changes and modifications, the design of the diesel generator and its auxiliary systems will also be in conformance with recommendations of NUREG/CR-0660 for enhancement of diesel generator reliability and the related NRC guidelines and criteria. We, therefore, conclude that this will provide reasonable assurance of diesel generator reliability through the design life of the plant.

9.4.5.2 Emergency Diesel Engine Fuel Oil Storage and Transfer System

The design function of the emergency diesel engine fuel oil storage and transfer system is to provide a separate and independent fuel oil supply train for each diesel generator, and to permit operation of the diesel generator at engineered

safety feature load requirements for a minimum of seven days without replenishment of fuel. The system is designed to meet the requirements of General Design Criteria (GDC) 2, 4, 5 and 17. The meeting of the requirements of GDC 2, 4, and 5 is discussed in section 9.5.4.1 of this SER.

There are two emergency diesel generators and one HPCS diesel generator for WPPSS Unit 2. Each diesel engine fuel oil storage and transfer system consists of a 3000 gallon day tank sufficient to power the diesel engine at rated load for approximately 8.5 hours, a diesel fuel oil storage tank (60,000 gallon tank for each of the emergency diesels and a 50,000 gallon tank for the HPCS diesel) sufficient to power the diesel engine at maximum continuous load conditions for seven days, an ac motor driven transfer pump powered from the associated diesel and the associated piping, valves, instrumentation and controls.

Each diesel engine fuel oil storage and transfer system is independent and physically separated from the other systems supplying the redundant diesel generators except for a cross connect in the fuel oil transfer system. This cross-connect is properly isolated by redundant locked closed valves. Thus, a single failure within any one of the systems will affect only the associated diesel generator. Therefore, the requirements for General Design Criterion 17, "Electric

Power Systems," as related to the capability of the fuel oil system to meet independence and redundancy criteria are met.

The diesel engine fuel oil storage and transfer system piping and components up to the diesel engine skid interface, including auxiliary skid mounted piping, are designed to seismic Category I, ASME Section III, Class 3 (Quality Group C) requirements and meet the recommendations of Regulatory Guide 1.26 "Quality Group Classifications and Standards for Water-, Steam-, and Radioactive Waste Containing Components of Nuclear Power Plants," and Regulatory Guide 1.29 "Seismic Design Classification." The engine mounted piping and components, from the engine block to the engine interface*, are considered part of the engine assembly and are seismically qualified to Category I requirements as part of the diesel engine package. This piping and the associated components, such as valves, fabricated headers, fabricated special fittings, and the like are designed, manufactured, and inspected in accordance with the guidelines and requirements of ANSI Standard B31.1 "Code for Pressure Piping," ANSI N45.2 "Quality Assurance Program Requirements for Nuclear Facilities" and 10 CFR 50 Appendix B. The engine mounted fuel oil piping and

* as defined in section 9.5.4.1 of this SER.

associated components are intentionally overdesigned (subjected to low working stresses) for the application, and thereby resulting in high operational reliability. The design of the engine mounted fuel oil piping and components to the cited design philosophy and standards is considered equivalent to a system designed to ASME Section III Class 3 requirements with regard to system functional operability and inservice reliability.

The fuel oil transfer system piping and components between the engine interface and the engine auxiliary skid interface are designed seismic Category I. The system description and diagrams state that this piping is designed to ANSI B31.1 and is Quality Group D. This is unacceptable. We require the above piping and components be designed ASME Section III Class 3 (Quality Group C) requirements and conform to the guidelines of Regulatory Guide 1.26. The applicant has been informed of this position. The staff is pursuing this issue with the applicant and the engine manufacturer.

The exposed portions of the diesel oil storage tank fill and vent lines are not tornado missile protected. The applicant, in a letter dated January 29, 1982, stated that in the event of damage to the fill and vent connections due to tornado missiles, there are tank pump out connections and unused flanged connections on the storage tank which can be used as fill and vent openings. We find this acceptable.

The design of the emergency diesel engine fuel oil storage and transfer system conforms to ANSI-N195, "Fuel Oil Systems for Standby Diesel Generators," and the guidelines of Regulatory Guide 1.137, "Fuel Oil Systems for Standby Diesel Generators," position C.2.a through C.2.h with the following exceptions:

1. An overflow line from the day tank to the fuel oil storage tank,as required by section 6.1 of ANSI-N195, is not being provided. The applicant is providing redundant high level switches in the day tank, and a one half inch minimum flow line having no restriction which directs fuel oil from the fuel oil transfer pump discharge back to the storage tank. The normal high level switch shuts-off the pump and the high-high level switch closes the solenoid shut-off valve at the day tank inlet. Excess fuel oil is returned to the storage tank through the minimum flow line. We find this design acceptable provided the following conditions are met:

   a. The applicant will verify that the minimum flow line will pass sufficient fuel oil so that in

the evert of failure of high level switch, the fuel oil transfer pump and its motor will not overheat when the day tank solenoid operated shutoff valve is closed.

b. An inservice inspection program which verifies proper operation of the day tank level control switches and solenoid operated shutoff valve will be incorporated into the Technical Specifications. The frequency of the inservice inspection will be monthly.

2. Internal corrosion protection for the fuel oil storage tanks, as required by section 7.5 of ANSI-N195, is not being provided. We require that internal corrosion protection for the fuel oil storage be provided. The applicant has been informed of this position.

3. Position C.2.f of Regulatory Guide 1.137 is not being met. The applicant stated that periodic sampling of the fuel for sediment content will indicate if sediment at the bottom is being excessive. The proposed periodic sampling of the fuel oil for sediment is not a good indication of the amount of sediment accumulation at the bottom of the tank. The proposed sampling would

only give a relative indication suspended solids in the fuel. In order to obtain a true sample of sediment accumulation in the tank, it would be necessary to vigorously stir the stored fuel so that accumulated sediment would be in total suspension. We do not suggest this procedure. In the interest of maintaining optimum reliability and availability of the D/Gs on demand, we require that position C.2.f "ten year tank cleaning" be implemented and shall be included as part of the plant technical specifications.

4. Position C.2.g of Regulatory Guide 1.137, on cathodic protection, is being met by a plant site cathodic protection system with its own surveillance program, which we find acceptable.

The scope of review of the diesel engine fuel oil storage and transfer system included layout drawings, piping and instrumentation diagrams, and descriptive information in section 9.5.4 of the FSAR for the system and auxiliary suport systems essential to its operation.

The basis for acceptance in our review was conformance of the design criteria and bases and design of the diesel engine fuel oil storage and transfer system to the requirements of General Design Criterion 17 with respect to redundancy and physical independence, the guidance of the cited regulatory guides, and the recommendations on NUREG/CR-0660, and industry codes and standards. The system was reviewed in accordance with Standard Review Plan 9.5.4.

Based on our review, we conclude that the emergency diesel engine fuel oil storage and transfer system meets the requirements of General Design Criteria 2, 4, 5 and 17, meets the guidance of the cited regulatory guides, it can perform its design safety function, and meets the recommendations of NUREG/CR-0660 and industry codes and standards, and is therefore acceptable, except as previously stated. Upon receipt of the additional confirmatory information, we will report our findings in a supplement to this SER.

9.5.5 Emergency Diesel Engine Cooling Water System

The design function of the emergency diesel engine cooling water system is to maintain the temperature of the diesel engine within a safe operating range under all load conditions and to maintain the engine coolant preheated during standby conditions to improve starting reliability. The system is designed to meet the requirements of General Design Criteria 2, 4, 5, 17, 44, 45 and 46. The meeting of the requirements of GDC 2, 4, and 5 is discussed in section 9.5.4.1 of this SER.

The emergency and HPCS diesel engine cooling water system is a closed loop system and cools the cylinder liners, cylinder heads, lube oil coolers, and the turbocharger combustion air aftercooler. The major components of this system for each diesel engine includes turbocharger air aftercoolers, jacket water cooler, engine driven jacket water coolant pumps, an expansion (surge) tank, a resevoir tank (emergency diesels only), a lube oil cooler, an electric emersion heater, a thermostatic 3-way valve, required instrumentation controls and alarms, and the associated piping and valves to connect the equipment. When the diesel engine is operating, the heat generated is rejected to the standby service water system by means of the jacket water cooler.

During operation of the diesel engine, temperature regulation of the diesel engine coolant is accomplished automatically through the action of a temperature sensing three-way thermostatic valve. When the engine is idle, the engine coolant is heated to a temperature of 120°F to 155°F by an electric emersion heater and continuously circulated by natural circulation through the lube oil cooler. The heater lube oil is returned to the engine sump and provides the heat necessary to preheat the cooling water in the engine. This is accomplished by a combination of radiation, convection and conduction of heat through the metal parts of the engine and engine block to the cooling water. Natural circulation of the cooling water through the engine block and balance of the system, preheats the cooling water system. The temperature is controlled by a thermostat to keep the engine warm and ready to accept loads within the prescribed time interval.

Since this plant is located in an area where the temperature can drop to below freezing levels, the diesel generator room temperature could conceivably approach outside ambient temperature if the diesel generator room HVAC system failed. With the diesel generator room at or below freezing level, the means of preheating the entire engine cooling water volume may not be adequate to keep the engine sufficiently preheated to assure a successful fast start and load accepting capability in an emergency. Improper preheating of the diesel engine units may prevent performance of their required safety function and may degrade availability of the diesel generators to an unacceptable level. The diesel generator room HVAC system, evaluated in section 9.4.5 of this SER, is designed to maintain a minimum room air

temperature of approximately 70^{o}F. No alarms are provided to indicate system failure. We require alarms be installed so that, in the event the room temperature drops below this controlled temperature level, it is alarmed in the main control room and there would be sufficient time available for operator corrective actions, before engine cooling water temperatures would drop to unacceptable levels.

The diesel generators are capable of operating fully loaded, without secondary cooling for a minimum of two minutes. Sufficient water is contained in the engine and expansion tank and resevoir tanks for the emergency diesels to absorb the heat generated during this period. This time is in excess of the time needed to restore standby cooling water to the diesels in the event of a loss of offsite power. Alarms have been provided to enable the control room operator to monitor the diesel generator cooling while the unit is in the standby mode or in operation.

There are two emergency and one HPCS diesel generators for WPPSS Unit 2 and each has a physically separate and independent cooling water system. Therefore the requirements of Generator Design Criteria 17, "Electric Power Systems" and 44, "Cooling Water System," as related to redundancy and single failure criteria are met.

The diesel engine cooling water system piping and components up to the diesel engine auxiliary skid interface are designed to seismic Category I, ASME Section III, Class 3 (Quality Group C) requirements and meet the recommendations of Regulatory Guide 1.26 "Quality Group Classification and Standards for Water-, Steam-, and Radioactive Waste Containing Components of Nuclear Power Plants," and Regulatory Guide 1.29 "Seismic Design Classification." The engine mounted piping and components, from the engine block to the engine interface*, are considered part of the engine assembly and are seismically qualified to Category I requirements as part of the diesel engine package. This piping and the associated components, such as valves, fabricated headers, fabricated special fittings, and the like are designed, manufactured, and inspected in accordance with the guidelines and requirements of ANSI Standard B31.1 "Code for Pressure Piping," ANSI N45.2 "Quality Assurance Program Requirements for Nuclear Facilities" and 10 CFR 50 Appendix B. The engine mounted cooling water piping and associated components are intentionally overdesigned (subjected to low working stresses) for the application, and thereby resulting in high operational reliability. The design of the engine mounted cooling water piping and components to the cited design philosophy and standards is considered equivalent to a system designed to ASME Section III Class 3

* as defined in section 9.5.4.1 of this SER

requirements with regard to system functional operability and inservice reliability.

The cooling water system piping and components between the engine interface and the engine auxiliary skid interface are designed seismic Category I. The system description and diagrams state that this piping is designed to ANSI B31.1 and is Quality Group D. This is unacceptable. We require the above piping and components be designed ASME Section III Class 3 (Quality Group C) requirements and conform to the guidelines of Regulatory Guide 1.26. The appliant has been informed of this position. The staff is pursuing this issue with the applicant and the engine manufacturer.

The diesel engine cooling water system conforms with Regulatory Guide 1.9, position C.7, as it relates to engine cooling water protective interlocks. The diesel generator system protective interlocks are discussed in section 8.3 of this report.

The diesel engine cooling water system has provisions to permit periodic inspection and functional testing during standby and normal modes of power plant operation as required by General Design Criterion 45, "Inspection of Cooling Water System" and General Design Criterion 46, "Testing of Cooling Water System."

The scope of review of the emergency diesel engine cooling water system included layout drawings, piping and instrumentation diagrams, and descriptive information in section 9.5.5 of the FSAR for the system and auxiliary support systems essential to its operation.

The basis for the acceptance in our review was conformance of the design criteria and bases and design of the diesel engine cooling water system to the General Design Criteria 17 and 44 with respect to redundancy and physical independence, General Design Criteria 45 and 46 with respect to inspection and testability of the system, the guidance of the cited Regulatory Guides, and the recommendations of NUREG/CR-0660, and industry codes and standards, and the ability of the system to maintain stable diesel engine cooling water temperature under all load conditions. The system was reviewed in accordance with Standard Review Plan 9.5.5.

Based on our review, we conclude that the emergency diesel engine cooling water system meets the requirements of General Design Criteria 2, 4, 5, 17, 44, 45 and 46 meets the guidance of the cited Regulatory Guides, it can perform its design safety function and meets the recommendations of NUREG/CR-0660 and industry codes and standards, and is therefore acceptable, except as previously stated. Upon receipt of additional information, we will report our findings in a supplement to

this SER.

9.5.6 Emergency Diesel Engine Starting Systems

The design function of the emergency diesel engine starting system is to provide a reliable method for automatically starting each diesel generator such that the rated frequency and voltage is achieved and the unit is ready to accept required loads within 10 seconds. The system is designed to meet the requirements of General Design Criteria 2, 4, 5 and 17. The meeting of the requirements of GDC 2, 4, and 5 is discussed in section 9.5.4.1 of this SER.

There are two emergency and one HPCS diesel generators for WPPSS Unit 2. Each diesel generator has an independent and redundant air starting system consisting of two separate full capacity air starting subsystems each with sufficient air capacity to provide a minimum of five consecutive cold engine starts. Redundancy is provided by two emergency diesel generators and the HPCS diesel generator so that a malfunction or failure in one system does not impair the ability of the other system to start its diesel engine. This meets the requirements of General Design Criteria 17, "Electric Power Systems."

Each subsystem includes an air compressor, a minimum of one receiver tank, intake air filters, starting valves, air

starting motors, instrumentation, controls, alarms and the associated piping to connect the equipment. Alarms annunciate on the local panel and in the main control room to enable the operators to monitor the air pressure of the diesel generator starting air system.

The air starting system for the diesel generators relied on periodic blowdown of the air receivers for the removal of entrained oil and excess water from the starting air. Operating experience has shown that accumulation of water in the starting air system has been one of the most frequent causes of diesel engine failure to start on demand. Thus, we require that the engine starting air be dried. Air in the air receivers is saturated to the system air pressure and temperature. Air flow from this point accompanied with reduction in system pressure and/or temperature will result in water condensation. Since periodic blowdown of the air receivers will not provide dry diesel engine starting air, we required that air dryers be installed upstream of the air receivers. The applicant in letters dated January 29, and February 5, 1982, committed to install air dryers upstream of the air receivers by the end of the first refueling, respectively. We find this unacceptable. We require that the air dryer be installed prior to startup. To ensure a continual supply of starting air at the quality level stated in the FSAR, the applicant is providing for monthly verification

and/or maintenance of air dryer performance.

The diesel engine air starting system piping and components from the air compressors to the diesel engine interface, including auxiliary skid mounted piping are designed to seismic Category I requirements and meet the recommendations of Regulatory Guide 1.29 "Seismic Design Classification." The air receivers are designed to ASME Section VIII requirements.

The engine mounted piping and components, from the engine block to the engine interface, are considered part of the engine assembly and are seismically qualified to Category I requirements as part of the diesel engine package. The piping and the associated components, such as valves, fabricated headers, fabricated special fittings, and the like are designed, manufactured, and inspected in accordance with the guidelines and requirements of ANSI Standard B31.1 "Code for Pressure Piping," ANSI N45.2 "Quality Assurance Program Requirements for Nuclear Facilities" and 10 CFR 50 Appendix B. The engine mounted air starting piping and associated components are intentionally overdesigned (subjected to low working stresses) for the application, and thereby resulting in high operational reliability. The design of the engine mounted air starting piping and components to the cited design philosophy and standards is considered equivalent to a system designed to ASME Section III Class 3 requirements with regard to system functional operability and inservice reliability.

The diesel engine air starting system from the air compressors up to the diesel engine interface including auxiliary and engine skid mounted piping are designed to ANSI B31.1. This is unacceptable. We require that the system be designed to ASME Section III Class 3 (Quality Group C) requirements and meet the recommendations of Regulatory Guide 1.26 "Quality Group Classification and Standards for Water-, Steam-, and Radioactive Waste Containing Components of Nuclear Power Plants." The applicant has been informed of this position.

The diesel generator air starting system conforms with Regulatory Guide 1.9, position C.7 as it relates to diesel engine air starting system protective interlocks. The diesel generator system protective interlocks are discussed in section 8.3 of this report.

The scope of review of the emergency diesel engine starting system included layout drawings, piping and instrumentation diagrams, and descriptive information in section 9.5.6 of the FSAR for the system and auxiliary support systems essential to its operation.

The basis for acceptance in our review was conformance of the design criteria and bases and design of the diesel engine air starting system to the requirements of General Design Criterion 17 with respect to redundancy and physical independence, the guidance of the cited Regulatory Guides, the additional guidance in Section III of Standard Review Plan 9.5.6 and the recommendations of NUREG/CR-0660, and industry codes and standards, and the ability of the system to start the diesel generator within a specified time period.

Based on our review, we conclude that the emergency diesel engine air starting system meets the requirements of General Design Criteria 2, 4, 5 and 17, meets the guidance of the cited Regulatory Guides and Standard Review Plan 9.5.6, it can perform its design safety function and meets the recommendations of NUREG/CR-0660 and industry codes and standards, and is therefore acceptable except as previously stated. Upon receipt of additional information, we will report our findings in a supplement to this SER.

9.5.7 Emergency Diesel Engine Lubricating Oil System

The design safety function of the emergency diesel engine lubricating oil system is to provide a supply of filtered lubrication oil to the various moving parts of the diesel engine including pistons and bearings. The system is designed to meet the requirements of General Design Criteria 2, 4, 5 and 17. The meeting of the requirements of GDC 2, 4 and 5 is discussed in section 9.5.4.1 of this SER.

Major components of the emergency diesel engine lubricating oil system for each engine include engine-driven main bearing, piston cooling and scavenging lube oil pumps, motor driven ac lube oil circulation and dc soak back pumps, a lube oil collection sump, strainers and filters, lube oil cooler/heater, instrumentation, controls, alarms, and associated piping and valves to connect the equipment. Crankcase over pressure alarms are provided for protection from crankcase explosion. Alarms and protective devices are provided to enable the control room operator to monitor the diesel generator lube oil system during standby, startup or in operation.

The emergency diesel engine lubrication oil system is an integral part of the diesel engine and thus meets the requirements of General Design Criterion 17, with regards to system independence and single failure criteria. The engine lube oil system supples oil during engine operation to all main bearings, the camshaft bearings, cam followers, engine wearing parts and turbocharger. The lube oil preheating portion of the system is operated only when the diesel engine is on standby, at which time the lube oil is heated by the lube oil cooler/heater.

The preheat lubrication system for the diesel engines is composed of a continuously operating alternating current pump and a backup direct current pump which prelubricates the turbocharger bearings only. The other wearing parts of the engine do not receive any lubrication until after the engine starts, and the engine-driven lube oil pumps reach full speed. This is not acceptable. We require a prelubrication of the diesel engines moving parts to prevent dry starts. Dry starting of the diesel engines under emergency conditions will result in momentary lack of lubrication at the various moving parts which can eventually lead to failures with resultant equipment unavailability. The applicant was informed of this problem and at a meeting in Bethesda on December 10, 1981, the applicant stated that he will install the manufacturer's recommended fix GM-EMD-MI-9644 to correct the staff concern. The applicant did not commit to an installation date. However, the manufacturer's recommended fix does not totally alleviate the problem of dry starting of the engine, in that only the wearing parts located in the lower half of the engine are lubricated. Thus, we find modification only partially acceptable as a means of minimizing dry engine starts. The applicant has been informed of the problem. The staff is pursuing this issue with the applicant, and the engine manufacturer.

The diesel engine lubrication oil system piping and components including the engine mounted piping and components are designed to seismic Category I requirements and meet the recommendations of Regulatory Guide 1.29 "Seismic Design Classification."

The engine mounted piping and components, such as valves, fabricated headers, fabricated special fittings, and the like from the engine block to the engine interface* are designed, manufactured, and inspected in accordance with the guidelines and requirements of ANSI Standard B31.1 "Code for Pressure piping," ANSI N45.2 "Quality Assurance Program Requirements for Nuclear Facilities" and 10 CFR Appendix B. The engine mounted lubricating oil piping and associated components are intentionally overdesigned (subject to low working stresses) for the application, and thereby resulting in high operational reliability. The design of the engine mounted lubricating oil piping and components to the cited design philosophy and standards is considered equivalent to a system designed to ASME Section III Class 3 requirements with regard to system functional operability and inservice reliability.

The diesel engine lubrication system piping and components up to the engine interface are designed to ANSI B31.1. This is unacceptable. We require that the system be designed to ASME Section III Class 3 (Quality Group C) requirements and

* as define in section 9.5.4.1 of this SER

meet the recommendations of Regulatory Guide 1.26 "Quality Group Classification and Standards for Water-, Steam-, and Radioactive Waste Containing Components of Nuclear Power Plants." The applicant has been informed of this position. The staff is pursuing this issue with the applicant and the engine manufacturer.

The diesel generator lubricating oil system conforms with Regulatory Guide 1.9, position C.7, as it relates to diesel engine lubrication system protective interlocks. The diesel generator system protective interlocks are discussed in section 8.3 of this report.

The scope of review of the diesel generator lubricating oil system included piping and instrumentation diagrams, and descriptive information in section 9.5.7 of the FSAR for the system and auxiliary support systems essential to its operation.

The basis for acceptance in our review was conformance of the design criteria and bases and design of the diesel engine lubricating oil system to the requirements of General Design Criteria 17 with respect to redundancy and physical independence, the guidance of the cited Regulatory Guides, the additional guidance in Section II of Standard Review Plan 9.5.7 and the recommendations of NUREG/CR-0660 and industry codes and standards.

Based on our review, we conclude that the emergency diesel engine lubricating oil system meets the requirements of General Design Criteria 2, 4, 5 and 17, meets the guidance of the cited Regulatory Guides and Standard Review Plan 9.5.7, it can perform its design safety function and meets the recommendations of NUREG/CR-0660 and industry codes and standards, and is therefore acceptable, except as previously stated. Upon receipt of additional information, we will report our findings in a supplement to this SER.

9.5.8 Emergency Diesel Engine Combustion Air Intake and Exhaust System

The design function of the emergency diesel engine combustion air intake and exhaust system is to supply filtered air for combustion to the engine and to dispose of the engine exhaust to atmosphere. The system is designed to meet the requirements of General Design Criteria 2, 4, 5 and 17. The meeting of the requirements of GDC 2, 4 and 5 is discussed in section 9.5.4.1 of this SER.

A separate source of combustion air for each diesel engine is taken from the diesel generator building air intakes through an air filter, intake silencer, turbo-charger compressor and combustion air aftercoolers. The path of the exhaust silencer and exhaust ducting to the outside of the building. This meets the requirements of General Design Criterion 17, "Electric Power Systems" with regard to system independence, redundancy and single failure criteria.

The exhaust system is separate from the air intake system to reduce the possibility of contamination of the intake air with recirculated exhaust gases. The location of the air intake structures and design also preludes the intake of fire extinguishing agents, other noxious gases, and other deleterious material that would effect diesel generator operation.

The applicant has not adequately addressed potential blockage of the combustion air intake structure due to the design worst case dust storm, and blockage of the diesel engine exhaust stack due to severe meteorological events such as freezing rain, snow, dust storms, and heavy rain. The applicant has been informed of our concerns and is evaluating the problem.

The diesel generator combustion air intake and exhaust system conforms with Regulatory Guide 1.9, position C.7, as it relates to diesel engine combustion air intake and exhaust system protective interlocks. The diesel generator system protective interlocks are discussed in section 8.3 of this report.

The diesel engine combustion air intake and exhaust system piping and components including the engine mounted piping and components are designed to seismic Category I requirements and meet the recommendations of Regulatory Guide 1.29 "Seismic Design Classifications." The engine mounted piping and associated components, considered part of the engine assembly such as fabricated headers, fabricated special fittings and the like up to the engine interface* are designed, manufactured, and inspected in accordance with the guidelines and requirements of ANSI Standard B31.1 "Code for Pressure Piping," ANSI N45.2 "Quality Assurance Program Requirements for Nuclear Facilities" and 10 CFR 50 Appendix B. The engine mounted intake and exhaust piping and associated components are intentionally overdesigned (subjected to low working stresses) for the application, and thereby resulting in high operational

* as defined in section 9.5.4.1 of this SER

reliability. The design of the engine mounted air intake and exhaust piping and components to the cited design philosophy and standards is considered equivalent to a system designed to ASME Section II Class 3 requirements with regard to system functional operability and inservice reliability.

The diesel engine combustion air intake and exhaust system piping and components beyond the diesel engine interface are designed to ANSI B31.1. This is unacceptable. We require that the system be designed to ASME Section III Class 3 (Quality Group C) requirements and meet the recommendations of Regulatory Guide 1.26 "Quality Group Classification and Standards for Water-, Steam-, and Radioactive Waste Containing Components of Nuclear Power Plants." The applicant has been informed of this position.

The design of the emergency diesel engine combustion air exhaust system piping outside the diesel generator building boundary is not tornado missile protected. This is not acceptable. To meet our requirements (GDC 2 and 4) this piping should be tornado missile protected to conform with the recommendations of Regulatory Guide 1.117 "Tornado Design Classification." He agreed that, the horizontal portions of the diesel generator exhaust pipes, located exterior to the missile wall, will be exposed to tornado missiles and have not been designed to withstand these missiles. The exposed portions of the diesel exhaust pipes could be severely damaged or deformed or severed by tornado missiles. The severing of the exhaust pipe would not materially affect the operation of the diesel generator. However, severe damage or deformation of the exhaust piping could result in total unavailability or a material decrease in the operational performance of the corresponding diesel generator(s). We require that the exposed portions of the diesel generator exhaust piping be tornado missile protected. The applicant has been informed of this position.

The scope of review of the diesel generator intake and exhaust system included layout drawings, piping and instrumentation diagrams, and descriptive information in section 9.5.8 of the FSAR for the system and auxiliary support systems essential to its operation.

The basis for the acceptance in our review was conformance of the design criteria and design of the diesel engine air intake and exhaust system to the General Design Criterion 17 with respect to redundancy and physical independence, the guidance of the cited Regulatory Guides, the additional guidance of the cited Regulatory Guides, the additional guidance in Section II of Standard Review Plan 9.5.8, and the recommendations of NUREG/CR-0660, and industry codes

and standards, and the ability of the system to provide sufficient combustion air and release of exhaust gases to enable the emergency diesel generator to perform on demand.

Based on our review, we conclude that the emergency diesel engine intake and exhaust system meets the requirements of General Design Criteria 2, 4, 5 and 17 meets the guidance of the cited Regulatory Guides, it can perform its design safety function and meets the recommendations of NUREG/CR-0660 and industry codes and standards, and is therefore acceptable, except as previously stated. Upon receipt of additional information, we will report our findings in a supplement to this SER.

10.0 STEAM AND POWER CONVERSION SYSTEM

10.1 Summery Description

The steam and power conversion system is designed to utilize steam generated in a direct cycle boiling water reactor and to generate electric power in the turbine-generator. After the steam passes through the high and low pressure turbines, the main condensers deaerate the condensate and transfer the rejected heat to the closed cycle circulating water system which uses a mechanical induced draft cooling tower to dissipate the rejected heat to the atmosphere. The condensate is reheated and returned as feedwater to the reactor. The entire system is designed for the maximum expected energy from the nuclear steam supply system.

A turbine bypass system is provided to discharge directly to the condenser up to 25% of the main steam flow around the turbine during transient conditions. This bypass capacity together with a 10% reactor automatic step load reduction capability is sufficient to withstand a 35% generator load loss without tripping the turbine or causing control rod movement or tripping the reactor.

10.2 Turbine-Generator

The turbine-generator converts steam power into electrical power and has a turbine control and overspeed protection system. The design function of the turbine control and overspeed protection system is to control turbine action under all normal or abnormal conditions and to assure that a full load turbine trip will not cause the turbine to overspeed beyond acceptable limits, and to minimize the probability of generation of turbine missiles in accordance with the requirements of General Design Criterion 4 "Environmental and Missile Design Bases." The turbine control and overspeed protection system is, therefore, essential to the overall safe operation of the plan.

The turbine-generator is manufactured by the Westinghouse Turbine Division and is a tandem-compound type (single shaft) with one double-flow high pressure turbine and two double-flow low pressure turbines. The rotational speed is 1800 rpm and is designed for a gross generator output of 1154 MWe at a nominal plant exhaust pressure of 2.5 inches mercury (absolute).

The turbine-generator is equipped with an digital electro-hydraulic control (EHC) system. The EHC system consists of an electronic governor using solid state control techniques in combination with a high pressure hydraulic actuating

system. The system includes electrical control circuits for steam pressure control, speed control, load control and steam control valve positioning.

Overspeed protection is accomplished by four independent systems; i.e., normal speed governor, overspeed protection controller (OPC), mechanical overspeed, and electric backup overspeed control systems. The normal speed governor modulates the turbine control valves to maintain desired speed load characteristics within 2-3 rpm of desired speed. The OPC will close the intercept valves and control valves at maximum of 103% rated speed. The mechanical overspeed sensor trips the turbine stop, control, and combined intermediate valves by deenergizing the hydraulic fluid systems when 111% of rated speed is reached. The main steam stop , control, reheat stop and intercept valves close in 0.3 seconds or less and the extraction steam valves close in less than two seconds. These valves are designed to fail closed on loss of hydraulic system pressures. The electrical backup overspeed sensor will trip these same valves when 111.2% of rated speed is reached by independently deenergizing the hydraulic fluid system. Both of these actions independently trip the energizing trip fluid system. The overspeed trip systems can be tested while the unit is on-line.

In order to protect the turbine-generator, the following signals will shut down the turbine: (1) Turbine approximately 11% above rated speed, (2) Turbine approximately 11.2% above rated speed, (3) loss of vacuum, (4) Excessive thrust bearing wear, (5) anti-motoring, (6) generator differential relay trip, (7) reverse phase trip, (8) generator directional overcurrent, (9) loss of hydraulic fluid supply pressure (loss of emergency trip system fluid pressure automatically closes the turbine valves and then energizes the master trip relay to prevent a false restart), (10) field relay trip, (11) generator overvoltage, (12) generator overcurrent on startup, (13) generator overvoltage on startup, (14) manual mechanical trip at the front standard, (15) unit overall differential trip, (16) low lubrication oil pressure, and (17) high reactor water level trip. Tripping the turbine will automatically cause the reactor to scram.

An inservice inspection program for the main steam stop and control valves and reheat valves is provided and includes: (a) dismantling and inspection of at least one main steam stop valve, one main steam control valve, one reheat stop valve, and one reheat intercept valve at least once per 40 months, (b) exercising and observing at least once a week the main steam stop and control, reheat stop, and intercept valves.

The applicant will include pre-operational and startup tests of the turbine generator in accordance with Regulatory Guide 1.68, "Initial Test Programs for Water Cooled Power Plants." The adequacy of the test program is evaluated in section 14.1 of this report.

The turbine generator system meets the recommendations of Branch Technical Positions ASB 3-1, "Protection Against Postulated Piping Failures in Fluid Systems Outside Containment" and MEB 3-1, "Postulated Break and Leakage Locations in Fluid Systems Outside Containment." Evaluation of protection against dynamic effects associated with the postulated pipe system failure is covered in section 3.6 of this report.

The scope of review of the turbine generator included descriptive information in section 10.2 of the FSAR, flow charts and diagrams. The basis for acceptance in our review was conformance of the design criteria and bases and design of the turbine generator system to General Design Criterion 4 with respect to the prevention of the generation of turbine missiles, the additional guidance in Section II of Standard Review Plan 10.2 and industry codes and standards.

Based on our review, we conclude that the turbine generator overspeed protection system meets the requirements of General

Design Criterion 4, the guidance of Standard Review Plan 10.2, it can perform its designed safety functions, and is therefore acceptable.

10.3 Main Steam Supply System

The function of the main steam supply system is to convey steam from the boiling water reactor to the high-pressure turbine and other auxiliary equipment for power generation. Section 10.3.1 evaluates the safety-related portion of the main steam system, including the main steam isolation valves (MSIVS). Section 10.3.2 evaluates the non-safety related portion of the main steam system downstream of the main steam isolation valves (MSIVS) up to and including the turbine stop valves.

10.3.2 Main Steam Supply System (Downstream of Main Stream Isolation Valves

This portion of the main steam system is not required to affect or support safe shutdown of the reactor.

The main steam system is designed to deliver steam from the reactor to the high-pressure turbine. The main steam and turbine steam systems provide steam to the reactor feedwater pump turbines, gland steam seal evaporator, off-gas preheaters, steam jet air ejectors, reheaters, feedwater heaters, and turbine bypass system. The main steam system from the outermost MSIVs to the turbine stop valves and all branch lines in between these valves up to and including the first valve capable of timely actuation are design seismic Category I and Quality Group B. All other portions of the system are designed Quality Group D and are nonseismic.

The scope of review of the main steam supply system (between the outermost main steam isolation valves and up to and including the turbine stop valves) included descriptive information in section 10.3 of the FSAR, and flow charts and diagrams. The basis for acceptance in the staff review was conformance of the design criteria and bases and design of main steam supply system to the acceptance criteria in Section II of Standard Review Plan 10.3.

Based on our review, we conclude the main steam supply system between the outermost main steam isolation valve and up to and including the turbine stop valves is in conformance with the above cited criteria and design bases, it can perform its design functions, and is, therefore, acceptable.

10.4.1 Main Condenser

The main condenser is designed to function as a heat sink for the turbine exhaust system, turbine bypass steam, and other turbine cycle flows, and to receive and collect condensate flows for return to the reactor. The main condenser transfers heat to the circulating water system which uses mechanical draft cooling towers to dissipate the rejected heat to the atmosphere.

The main condenser is not required to effect or support safe shutdown of the reactor or to perform in the operation of reactor safety features. The main condenser is a single-shell single pass, deaerating type condenser and is designed to produce a turbine back pressure of 2.5 inches mercury absolute when operating at rated turbine output. The main condenser design includes provisions for hotwell surge storage of the condensate and feedwater systems which is enough for approximately three minutes supply at design conditions and allows sufficient time for radioactive decay prior to returning the condensate to the cycle. Off-gas from the main condenser is processed in the gaseous radwaste system which is described and evaluated in section 10.3 of this report.

The main condenser is designed to accept full load exhaust steam from the main turbine and reactor feedwater pump turbines, up to 25% of the main steam flow from the turbine bypass system, and other cycle steam flows. The main condenser is also designed to deaerate the condensate to the required water quality and remove air plus hydrogen and

oxygen formed in the steam due to disassocation of water in the reactor. Copper alloy tubes have been used to minimize corrosion and erosion of condenser tubes. Condenser tube leakage could result in degradation of the feedwater quality with potential for corrosion of secondary system components. The applicant monitors condensate conductivity by means of an automatic hotwell sampling system to give an indication of tube leakage. The applicant, in response to a request for additional information, provided details on the detection, control, and correction of condenser cooling water leakage into the condensate.

The applicant will include preoperational and startup tests of the main condenser in accordance with recommendations of Regulatory Guides 1.68, "Initial Test Programs for Water Cooled Reactor Power Plants." The adequacy of the test program is evaluated in section 14.1 of this report.

The scope of review of the main condenser included layout drawings and descriptive information of the condenser in section 10.4.1 of the FSAR.

The basis for acceptance in the staff review was conformance of the design criteria and bases and design of the condenser to the acceptance criteria in Section II of Standard Review Plan 10.4.1 and industry standards.

Based on our review, we conclude that the main condenser is in conformance with the above cited criteria and design bases, it can perform its designed function and is, therefore, acceptable.

10.4.4 Turbine Bypass System

The turbine bypass system is designed to bypass up to 25% of main steam flow to the main condenser. This capacity together with a 10% reactor automatic step load capacity is sufficient to withstand a 35% generator load loss without tripping the turbine or causing control rod movement. The turbine bypass system is used to control reactor pressure as follows: a) during the reactor heatup to rated pressure; b) while the turbine generator is being brought up to speed and synchronized; c) during power operation when the reactor steam generator exceeds the transient turbine steam requirements; and d) during reactor cooldown. This system is not required to perform during accident conditions.

The bypass system is composed of the following: 1) four hydraulically operated bypass control valves, 2) pressure reducer assemblies and 3) piping. Each valve is rated for a capacity of approximately eight percent of the main steam flow at full load pressure and temperature; however, all four valves are designed for 25% of the total flow. The four bypass valves are mounted between the main steam isolation valves and turbine stop valves on a valve manifold. Each valve is provided with a pressure reducer assembly (perforated pipe) mounted in the condenser shell which reduce the steam pressure prior to discharge into the condenser. The turbine bypass system is not a safety related system and is not required for plant shutdown following an accident. The turbine bypass valves are designed to fail closed upon loss of electric power or hydraulic bypass valves are designed to close on loss of main condenser vacuum.

The applicant will include pre-operational and start-up tests of the turbine bypass system in accordance with recommendations of Regulatory Guide 1.68, "Initial Test Programs for Water Cooler Reactor Power Plants." The adequacy of the test program is evaluated in section 14.1 of this report. The turbine bypass system can be tested while the unit is on line, and will be tested on a monthly basis.

The turbine bypass system meets the recommendations of Branch Technical Positions ASB 3-1, "Protection Against Piping Failures in Fluid System Piping Outside Containment and MEB 3-1, "Postulated Break and Leakage Locations in Fluid System Piping Outside Containment." Evaluation of protection against dynamic effects associated with the postulated pipe system failures is covered in section 3.6 of this report.

The scope of review of the turbine bypass system included drawings, piping and instrumentation diagrams and descriptive information of the system in section 10.4.4 of the FSAR.

The basis for acceptance in the staff review was conformance of the design criteria and bases and design of the turbine bypass system to the acceptance criteria in Section II of Standard Review Plan 10.4.4 and industry standards.

Based on our review, we conclude that the turbine bypass system is in conformance with the above cited criteria and design bases, it can perform its designed function, and is, therefore, acceptable.

SUBMITTAL OF SER OPEN ISSUES

8202260283

SER Section	Issue	Status
40.15	Diesel Generator Fill and Vent Lines	Closed
40.18	Diesel Generator Individual and Total Heat Removal Rates	Closed
40.19	Diesel Engine Cooling Water Vent Capability	Closed
40.23	Diesel Engine Lubrication System	Closed
40.32	Monthly Valve Cycling	Closed
40.36	Protection Against Sustained Degraded Voltage Conditions	Closed
40.45	Background Noise Levels	Closed
40.47	Regulatory Guide 1.137	Closed
40.050	Tank Internal Coating	Closed
40.052	Diesel Generator Oil Storage Tank Fill and Vent Lines	Closed
40.054	Diesel Engine Cooling Water Vent Capability	Closed
40.056	Diesel Engine Cooling Water System Expansion Tank Makeup Water	Closed
40.059	Diesel Engine Combustion Air Intake and Exhaust System Instrumentation, Controls, Sensors and Alarms	Closed
40.061	Monthly Valve Cycling	Closed
40.080	Heavy Duty Gear Drive Installation	Closed
40.081	Equivalent Training for New Personnel	Closed
40.082	Diesel Generator Starting Logic	Closed
40.083	Removal of I&C Components from Skid	Closed
40.084	Non Block Related Piping Code Class	Closed
40.085	Engine Block Heating	Closed
40.086	Diesel Engine Starting Air Dryers	Closed
40.088	Why Leave Upper Part of Engine Dry	Closed
-	Figure to Question 371.018-1 Received Illegible by NRC Resubmitted	Closed
-	Editorial Change FSAR Page 4.5-4	Closed
-	Editorial Change FSAR Page 10.3-4	Closed
-	ADS Operation, Letter G.D. Bouchey (SS) to A. Schwencer (NRC), dated February 11, 1982	Closed
-	PSB Electrical SER Open Items, Letter G.D. Bouchey (SS) to A. Schwencer (NRC), dated February 11, 1982	Closed
-	NUREG-0612, "Control of Heavy Loads", Letter G.D. Bouchey (SS) to A. Schwencer (NRC), dated February 12, 1982	Closed
421.043	Revisions, Additions to Table 3.2-1, Equipment Classification	Closed
PSB-5	Thermal Overload	Closed
6.2.5	Combustible Gas Control in Containment	Closed

Q 40.15

You state in 9.5.4.2.2 of the FSAR that the diesel generator fuel oil storage tank is provided with an outside fill and vent line. Indicate how these lines are protected from tornado and turbine missiles. Indicate the height at which these lines are terminated above plant grade and describe the measures to prevent entry of moisture into the storage tanks during adverse environmental conditions (e.g., high humidity and/or heavy precipitation).

Response:

These fill and vent lines are of seismic category I construction.

Refer to 9.5.4.2.of the FSAR. The fuel oil storage tanks are provided with individual fill and vent lines which are protected against the entry of contaminants but are not missile protected. The fill lines are provided with screwed caps and the vent lines are provided with flame arrestors. The flame arrestors vent air from the underside such that the metal top of the arrestor prevents direct entry of moisture into the tank. The fill and vent lines terminate at 3.25 and 6.0 feet respectively above plant grade. ~~In addition,~~ However the fuel oil is sampled periodically to detect water or contamination in the fuel oil before it could present a problem. Missile protection is not necessary since, in the unlikely event that a vent or fill line is ruptured due to a missile and in the extremely unlikely event sufficient contamination would enter the ruptured line to perturb diesel operation, fuel oil suction would be switched to the other tank. Either diesel may be supplied from either tank. In the event that fill line damage due to a missile prevents storage tank filling through the above line, the tank pump-out line may be utilized. The pump-out line has a flanged connection protected by a metal box located at ground level.

The 6-foot elevation of the vent line opening prevent direct seepage of any ground water into the fill line. Furthermore, ~~heavy~~ flooding does not occur at the plant site (See FSAR sections 2.4.2, 2.4.3, and 2.4.4.).

In addition, access to the tanks may be gained through manholes located inside the diesel generator building (thus protected from the effects of tornadoes).

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Q. 040.018

Provide a tabulation showing the individual and total heat removal rates for each major component and subsystem of the diesel generator cooling water system. Discuss the design margin (i.e., the excess heat removal capability) included in the design of major components and subsystems.

Response:

The diesel generator unit has a closed loop cooling water system. The major components of this system are the heat exchanger and the lube oil cooler which are skid mounted. The heat exchanger is the only component that requires interfacing with an external system (standby service water system). The design parameters for the heat exchangers are provided in 9.5.5.2. The design parameters for the lube oil cooler could not be obtained from the engine manufacturer. However, the diesel generator units are provided with surveillance instrumentation which is designed to permit the operator to accurately monitor the status of the inlet and outlet streams of the lube oil cooler at all times.

The forced circulation of cooling water through the engine, lube oil cooler, heat exchanger, and heat exchanger bypass circuit is maintained by two engine driven pumps. The separate bypass piping flow paths are provided to bypass the heat exchanger at low engine outlet temperatures and to heat the jacket water system during standby or idle times. The heat exchanger bypass flow and temperature is automatically regulated by a three way self-contained thermostatic valve. This valve is set to maintain the engine outlet water temperature at 175°F (180°F for HPCS diesel engine). This thermostatic valve outlet opens to the heat exchanger when the engine jacket water temperature reaches 165°F and is full open to the heat exchanger at 180°F (water temperature out of the engine). A high temperature alarm annunciates at 200°F (195°F for HPCS diesel engine). A high temperature shutdown switch is provided to shutdown the engine when coolant temperature reaches 208°F (205°F for HPCS diesel engine) during test conditions.

The diesel generator heat exchangers are designed for the following conditions:

DIESEL GENERATORS 1A AND 1B

	Shell Side	Tube Side
Fluid Circulated	Engine Water	Standby Serv. Water
Number per Engine	---------one---------	
Flow	1100 GPM	825 GPM
Temp In	190°F	95°F max.
Temp Out	175.4°F	113.9°F
Fouling Factor	.0005	.001
Heat Load btu/hr		
~~Total for Both~~	↑7,800,000	

HPCS DIESEL GENERATOR

1. The heat emitted to the room by the HPCS diesel generator is 11,000 BTU/minute.

2. The HPCS diesel engine heat exchanger:

Temperature in	= ~~100°F~~ 95°F
Temperature out	= ~~121°F~~ 112.6°F
Service water	= ~~800 gpm~~ 1000 GPM
Heat exchanged	= ~~8,505,000~~ BTU/Hr. 8,872,000
Margin in cooling	= In excess of 25%

The heat exchangers are designed for the heat duty expected under maximum engine load with appropriate fouling factors to take care of service conditions. In addition, the maximum service water temperature expected is utilized. In the case of these heat exchangers, since the maximum ultimate heat sink temperature is expected to be always less than 87°F, an additional 10% margin exists because the heat exchangers were designed to a 95°F maximum service water temperature.

An expansion storage tank is mounted on the engine to allow for expansion of the water when heated and for venting of air from the system. A sight glass indicates the water level. In addition, a makeup admission valve, vent, overflow, and low water level sensing element are provided on the expansion tank.

During shutdown periods, a thermostat automatically energizes the immersion heaters to maintain the engines in a warm standby condition for rapid starts. A 500 gallon reservoir tank is provided in the cooling water system of each diesel engine associated with diesel generators to permit operation of the 1A + B engine for two minutes on a cold start (engine in a warm standby condition) without standby service water cooling. ~~Water temperature is maintained at 135°F during standby.~~

insert attached

In accordance with the manufacturer's maintenance instructions, the addition of a chromate-type corrosion inhibitor is added to the demineralized fill water will preclude long-term corrosion and organic fouling in the diesel engine cooling water system. Examples of commercially available chromate-type inhibitors include, but are not limited to, Nalco 38 and Dearborn Chemical Company, respectively. Since the entire system is enclosed in the diesel generator building and maintained in a warm condition for immersion heaters, antifreeze compounds are not needed.

Cooling system components materials of construction include cast iron, carbon steel, rubber and bronze. Chromate-type inhibitors can be used effectively with these materials.

Demineralized water and a chromate-type inhibitor are in conformance with the engine manufacturer's recommendations.

See 8.3.1.1.8.1.3 and 8.3.1.1.8.2.3 for additional discussion of the diesel generator cooling system.

Insert to Page 9.5-51.

The HPCS diesel engine is designed to permit operation without cooling for a time equivalent to that required to bring the cooling equipment into service with energy from the HPCS diesel generator. For all diesel engines, water temperature is maintained at 135° during standby.

Q. 040.19
(9.5.5)

Describe the provisions made in the design of the diesel engine cooling water system to assure that all components and piping are filled with water.

RESPONSE:

See revised

~~The text of~~ 9.5.5.2 ~~has been revised to incorporate the response to this question.~~

*Draft FSAR page attached,

The heat exchangers are designed for the heat duty expected under maximum engine load with appropriate fouling factors to take care of service conditions. In addition, the maximum service water temperature expected is utilized. In the case of these heat exchangers, since the maximum ultimate heat sink temperature is expected to be always less than 87°F, an additional 10% margin exists because the heat exchangers were designed to a 95°F maximum service water temperature.

Insert A

~~An expansion storage tank is mounted on the engine to allow for expansion of the~~ water when heated and for venting of air from the system. A sight ~~glass~~ indicates the water level. In addition, a makeup admission valve, vent, ~~overflow,~~ and ~~low water level sensing element are provided on the expansion tank.~~

Insert B+C

~~During shutdown periods, a thermostat automatically energizes the immersion heaters to maintain the engines in a warm standby condition for rapid starts. A 500 gallon~~ reservoir tank is provided in the cooling water system of each diesel engine associated with diesel generators to permit operation of the engine for two minutes on a cold start (engine in a warm standby condition) without standby service water cooling. Insert D ~~Water temperature is maintained at 135°F during standby~~.

A

1A and 1E

In accordance with the manufacturer's maintenance instructions, the addition of a chromate-type corrosion inhibitor is added to the demineralized fill water will preclude long-term corrosion and organic fouling in the diesel engine cooling water system. Examples of commercially available chromate-type inhibitors include, but are not limited to, Nalco 38 and Dearborn Chemical Company, respectively. Since the entire system is enclosed in the diesel generator building and maintained in a warm condition for immersion heaters, antifreeze compounds are not needed.

Cooling system components materials of construction include cast iron, carbon steel, rubber and bronze. Chromate-type inhibitors can be used effectively with these materials.

Demineralized water and a chromate-type inhibitor are in conformance with the engine manufacturer's recommendations.

See 8.3.1.1.8.1.3 and 8.3.1.1.8.2.3 for additional discussion of the diesel generator cooling system.

Insert A to page 9.5-51:

The 94 gallon expansion tank (26" diameter by 50" long) is mounted on the diesel engine skid, and its bottom is approximately 20 inches above cooling water circulating pump suction. The expansion tank is provided with a pressure cap that maintains pressure on the cooling water system (7psi) and prevents loss of water due to evaporation.

The expansion tank is provided with a level sight glass which is mounted on the front with instructions that indicate minimum water level. An alarm is provided in the control room to annunciate in case of low water level. A Seismic Category I, Safety Class 3 makeup water line from the standby service water system, is provided as an alternate supply to the expansion tank.

Diesel generator unit reliability, including the functions required of the circulating water pump and expansion tank were demonstrated prior to installation (qualification and shop performance tests). Periodic testing and maintenance assure continued reliability.

Insert B to page 9.5-51:

During shutdown periods, an electric immersion heater is provided for standby heating. The engine can thus be kept in constant readiness for an immediate start. The 15 kW, 460 V, 3-phase AC heating unit is mounted at the bottom of the accessory rack to heat the engine cooling water which circulates by thermosyphon action to the lube oil cooler, engine, and turbocharger after coolers. A thermostat sensing water temperature controls the heating elements to keep the water in the oil cooler tank between 125°F and 155°F. The auxiliary motor driven oil pump circulates lube oil through the lube oil cooler to pick up heat during standby conditions and then returns the warmed oil to the engine sump (see 9.5.7). Low oil temperature alarm is provided to ensure that the immersion tank is operating properly (see 9.5.7.2 and 8.3.11.8.2.3).

In addition, heaters supplied by Class 1E power are capable of maintaining the diesel generator rooms at temperatures in excess of 70°F during extreme weather conditions.

Insert to page 9.5-51:

To assure that all components and piping are initially filled with water, a demineralized water supply is temporarily connected to the 1¼-inch fill-drain connection located on the engine base at the cooling water pump end. Filling the cooling water system from the bottom up allows entrapped air to be vented to the expansion tank.

The engine cooling water return pipe (between engine block and temperature regulating valve) is slightly higher than the top of the expansion tank. ~~However, since the engine cooling water system is under positive pressure (7 psi) during operation, the entrapped air in the return pipe will be vented to the expansion tank through the provided vent line.~~

A 500 gallon reservoir tank is installed on the D-G room floor (Tank ℄ el. 444'-7-9/16") and is piped to both the temperature regulating valve and the heat exchanger and is vented to the expansion tank.

However, as may be seen from Figs. 9.5-4 and 9.5-6, during system operation any entrapped air will be properly relieved to the expansion tank through the provided vent lines due to the differential pressures involved.

Insert D to page 9.5-51:

The HPCS diesel engine is designed to permit operation without cooling for a time equivalent to that required to bring the cooling equipment into service with energy from the HPCS diesel generator. For all diesel engines, water temperature is maintained at nominal 135°F during standby.

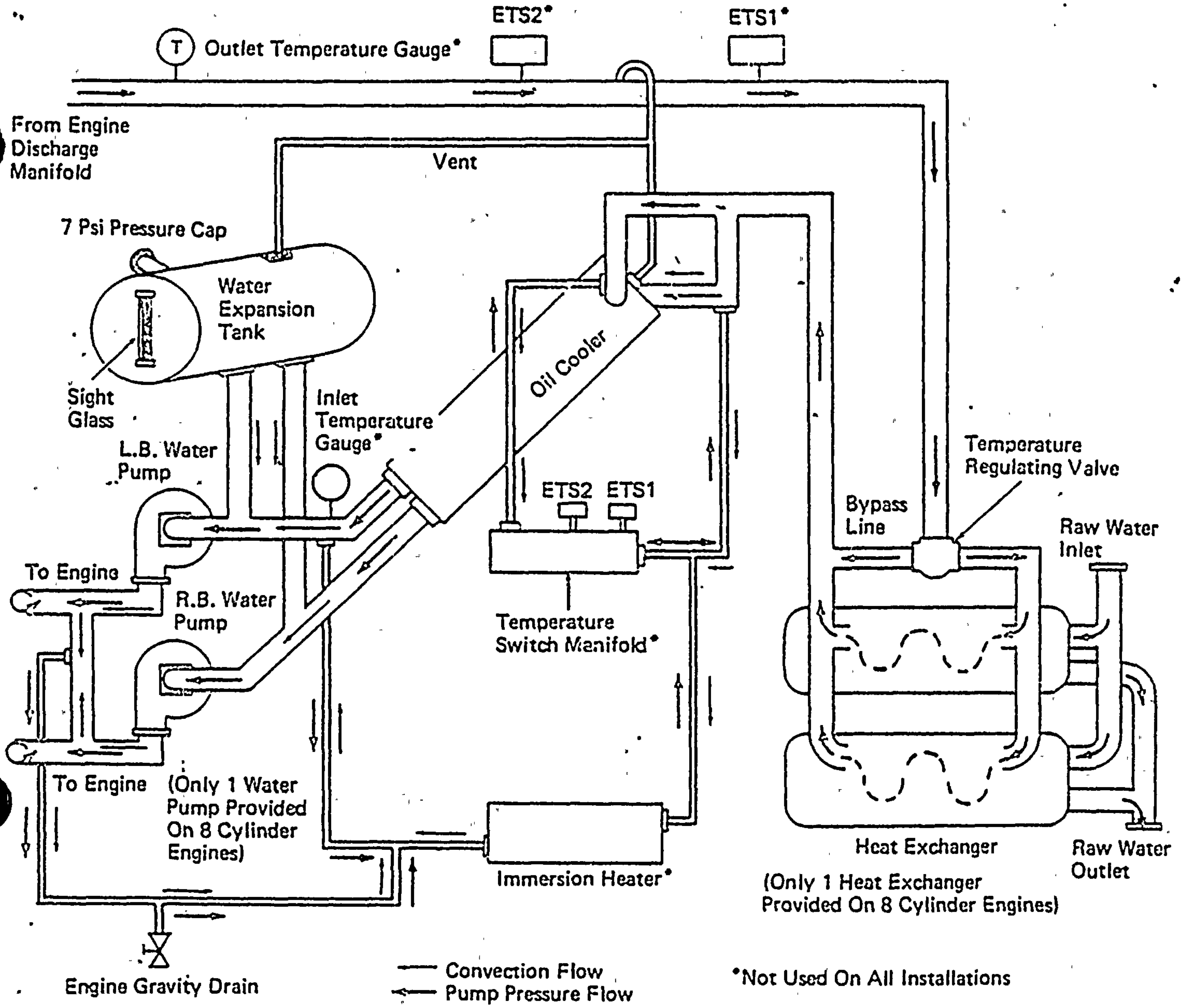


Fig. 9.5-6 Typical Cooling Water Schematic*

* From, Electro-Motive Division, GM, La Grange, Ill. Stationary Power Operating Manual, Vol II, 2nd ed, June, 197?

Q. 040.23
(9.5.7)

For the diesel engine lubrication system described in 9.5.7 of the FSAR, provide the following information:

a. The temperature differentials, flow rate, and heat removal rate of the interface cooling system external to the engine; verify that these are in accordance with recommendations of the engine manufacturer;

b. A discussion of the measures that will be taken to maintain the required quality of the lubricating oil, including the inspection procedures and the replacement criteria if the oil quality is degraded;

c. A description of the protective features (such as blowout panels) provided to minimize the occurrence of a crankcase explosion and to mitigate the consequences of such an event; and

d. A description of the capability to detect and control leakage from the lubrication system.

RESPONSE:

~~The text of 8.3.1.1.8.2.4 and 9.5.7.2 has been revised to incorporate the response to this question.~~

Insert attached

Insert to Page 040.023-1:

a. The text of 9.5.5 has been revised to incorporate the response to this item.

b. The text of 9.5.7.2 and 9.5.7.4 provides all the information relative to this item.

c. In the event of a high crank case pressure due to bearing overheating, annunciator and computer alarms are provided to alert the operator. A manual shutdown will then be made for diesel generators 1 and 2. for diesel generator 3 (HPCS) an automatic shutdown will ensue. Manufacturer's recommendation not to open any handhole or top deck covers, following a high crank case pressure condition, until the engine has been allowed to cool off is adhered to. This will prevent ignition of all vapors due to air admittance.

d. The text of 9.5.5.4 and 9.5.7.4 address testing and surveillance requirements for the cooling water and lube oil systems. These requirements are detailed in the technical specifications and include ensuring that the right quantities and qualities of the lube oil are present. Any oil leakage from the lube oil system or water contamination of the lube oil will therefore be detected and corrected.

Prior to plant startup, and at periodic intervals when the reactor is not at power operation, tests simulating Class 1E bus undervoltage or LOCA will be performed to demonstrate the capability of the power sources to meet the starting and loading sequencing requirements. Testing procedures during these times are described in the Technical Specifications.

Periodically during plant operation each diesel generator will be manually started and loaded. Each (Division 1, 2 and 3) unit will be separately synchronized to the 230 kV startup offsite power source and loaded.

Insert attached

The testing program is designed to test the ability of each diesel generator to start as well as to run under load long enough to bring all components of the system into equilibrium condition. This ensures that cooling and lubrication are adequate for extended periods of operation. Functional testing of the automatic control circuitry is conducted on a periodic basis to demonstrate proper operation.

Sufficient testability, alarms and fault detection equipment are provided to comply with the criteria indicated above. Thus assurance is given that the standby power sources are capable of performing their safety functions with adequate reliability at all times.

8.3.1.2.3 Service Environment

In addition to the effects of operation in normal service environment, all components of the emergency portion of the auxiliary AC power system essential to limiting the consequences of a LOCA, are designed to operate in the post-accident environment expected in the area in which they are located. Refer to 3.11 for discussion of environmental design and analysis of safety related (Class 1E) electrical components for post-accident conditions. Section 3.11 also identifies safety-related equipment that must operate in a harsh ~~hostile~~ environment, and contains a tabulation of the conditions under which the equipment must operate. 3.10 identifies Seismic Category I electrical equipment and describes the criteria, design and testing of electrical equipment in compliance with IEEE Std. 344-1971 for seismic qualification.

The preoperational as well as the operational testing programs are in conformance with NRC Regulatory Guide 1.108 Rev 1 including errata on paragraph C.2.a(9).

Insert to Page 8.3-49:

Prior to operation of the standby diesel generators there will be checks to insure correct valve lineup as well as switch position confirmation as identified in the diesel generator operating procedure. Among these will be the normal prestart checks. These will include expansion tank water level, diesel starting air compressor oil level, air start motor in line lubricator oil level, engine crank case oil level using both the gauge and the dipstick, generator bearing oil level, and the woodward governor oil level.

Q. 040.32
(10.2)

Provide a discussion on the inservice inspection program for throttle-stop, control, reheat stop and interceptor steam valves and the capability for testing essential components during turbine-generator system operation.

RESPONSE:

The text of 10.2.2 and 10.3.4 has been revised to incorporate the response to this question.

We will perform surveillance on these valves per technical specification surveillance requirement 4.3.8.2 (Technical Specification Revision 4).

Add

Q. 040.36
(RSP)

In addition to the undervoltage scheme currently provided to detect a loss of offsite power at the safety busses, we require the WNP-2 facility to have a second level of voltage protection, including a time delay, to protect the onsite power system from any adverse effects that could result from a sustained degraded voltage condition in the offsite power system. The design criteria for this second level of voltage protection are:

a. The selection of the voltage and time set points shall be determined by an analysis of the voltage requirements of the safety-related loads at all onsite system distribution levels.

b. The voltage protection shall incorporate coincidence logic to preclude spurious trips of the offsite power source.

c. The time delay which is selected shall be based on the following considerations: (1) the allowable time delay, including a conservative margin, shall not exceed the maximum time delay that is assumed in the appropriate accident analyses in Section 15 of the FSAR; (2) the time delay shall minimize the effect of short duration disturbances which might reduce the availability of the offsite power source(s); and (3) the allowable time duration of a degraded voltage condition at all distribution system levels shall not result in failure of safety-related systems or components.

d. The voltage sensors shall automatically initiate the disconnection of offsite power sources whenever the voltage set point and time delay limits have been exceeded.

e. The voltage sensors shall be designed to satisfy the following requirements: (1) the equipment will be Class IE and will be physically located at, and electrically connected to, the emergency switchgear; (2) independent undervoltage protection will be provided for each division of emergency power; (3) the equipment will have the capability to be tested and calibrated during power operation; and (4) annunciation must be provided in the control room for any bypasses incorporated into the design.

f. The Technical Specifications for the WNP-2 facility, will include: (1) the limiting conditions for operation; (2) the surveillance requirements; (3) the trip setpoints, including their minimum and maximum limits; and (4) the allowable values of voltage and time relay for second level voltage protection sensors and its associated time delay devices (i.e., the delayed trip.

Response:

The FSAR has been revised as shown below to incorporate the second level of under voltage protection for critical buses 7 (DG-1), 8 (DG-2) and 4 (DG-3).

a. See text of Section 8.3.1.2.4.3.2 page 8.3-52a which has been revised to incorporate the response to this item.

b. See text of Section 8.3.1.1.1 page 8.3-4 which has been revised to incorporate the response to this item.

c. See text of Section 8.3.1.1.8.1.7 pages 8.3-13 and 13a Section 8.3.1.2.4.3.1 page 8.3-52a and Table 6.3-1 which have been revised to incorporate the response to this item.

d. See text of Sections 8.3.1.1.1 page 8.3-4a which has been revised to incorporate the response to this item.

e. See text of Sections 8.3.1.1.1 pages 8.3-4 and 4a and 8.3.1.2.4.3.2 page 8.3-52a have been revised to incorporate parts 1, 2 and 3 of this item. There are no bypasses of the protective action for this system.

f. Section 3/4.8, Electrical Power Systems, of the Technical Specifications will include, (1) the limiting conditions for operation; (2) the surveillance requirements; (3) the trip set points, including their maximum and minimum limits; and (4) the allowable values of voltage and time delay for second level voltage protection sensors and its associated time delay devices.

AMENDMENT NO. 9
April 1980

TABLE 6.3-1

OPERATIONAL SEQUENCE OF EMERGENCY CORE COOLING SYSTEMS

FOR DESIGN BASIS ACCIDENT

Time (sec)	Events
0	Design basis loss-of-coolant accident assumed to start; ~~normal auxiliary~~ offsite power assumed to be lost.
~0	Drywell high pressure and reactor low water level reached. All diesel generators signaled to start; scram; HPCS, LPCS, LPCI signaled to start on high drywell pressure.
~3	Reactor low-low water level reached. Main steam isolation valves close; HPCS receives second signal to start.
~7	Reactor low-low-low water level reached. Second signal to start LPCI and LPCS; auto-depressurization sequence begins.
<10 (Note 2)	All diesel generators ready to load; energize HPCS pump motor; open HPCS injection valve: begin energizing LPCI and LPCS pump motors.
<27	HPCS injection valve open and pump at design flow, which completes HPCS startup.
<40	LPCI and LPCS pumps at rated flow, LPCI and LPCS injection valves open, which completes the LPCI and LPCS startups.
See Figure 6.3-21a	Core effectively reflooded assuming worst single failure; heatup terminated.
≳600	Operator shifts to containment cooling.

NOTE: 1) For the purpose of all but the next to last entry on this table, all ECCS equipment is assumed to function as designed. Performance analysis calculations consider the effects of single equipment failures. (See 6.3.2.5 and 6.3.3.3).

Insert attached

Insert to Page 6.3-38:

2) 13 seconds for DG-1 and DG-2 and 11 seconds for DG-3 (HPCS DG) if the offsite grid voltage is degraded but not totally lost. See 8.3.1.2.4.3.1. This is acceptable based on 5-second motor starting time and 12-second valve opening time, thus allowing an HPCS injection time of less than 27 seconds and LPCS and LPCI injection time of less than 40 seconds.

Radwaste Building and/or a base station in the Primary Guard House. The base station in the Communications Room has remote control stations in both the Main Control Room and the Remote Shutdown Room.

Those marked with a single asterisk can be reached by radio from the base stations, but cannot talk back because of shielding by the building concrete and steel.

Those stations marked with a double asterisk are shielded by the building so that no radio communication is possible.

c. Sound levels in all but the Diesel Generator Rooms are the same as normal during accident or transient conditions. All areas noted in (a) have capability for using headsets. Noise cancelling microphones are used where noise levels are known to be high. Sound booths are used in areas such as the Diesel Generator Rooms.

The PA system speakers have volume controls which can be adjusted to the ambient noise level.

[INSERT A]

d. Noise levels will not be known until the plant is operational. At the time volume controls will be adjusted and noise cancelling microphones will be installed. Known noisy areas have access to telephones nearby that are shielded from the noise by walls. [INSERT B]

e. The description of the Plant Communications System Preoperational Test is contained in FSAR 14.2.12.1.49. In addition to the items mentioned in section (d) above, any problems identified with the communications systems during the preoperational test program will be detailed on a Startup Problem Report and the resolution will be documented. Also during startup Test No. 28 (Shutdown from Outside the Main Control Room described in 14.2.12.3.28) any defiencies in the communication system involving the emergency shutdown panel will be identified and resolved.

Q 40.45

INSERT A to Page 040.045-3

Maximum background noise levels which would not adversely affect communications between the control room and the areas indicated in a above have not yet been established. Previous experience in plant design indicates that the following noise levels might be expected 3 (three) feet from the major components located in the area:

Area	db Level[1]
#1 RPS Rm (RW)	40-70
Local Feed Pump Control Station (TG)	92-98
Hotwell Level Control Station (TG)	92-98
Non-Vital 4160V Swgr Rm (RW)	0-10
Vital 4160V Swgr SM-7 (RW)	0-10
Vital 4160V Swgr SM-8 (RW)	0-10
DG Corridor Bldg Corridor	10-35
DG Bldg	110-120
Standby SW Bldg #1	100-106
Standby SW Bldg #2	100-106
Circulating Water Pumphouse	100-106
ECCS Equipment Rm (RB)	100-120[2]
RHR Valve Rm #1 (RB)	70-120[2]
RHR Valve Rm #2 (RB)	70-120[2]
Containment Air Compressors (RB)	92-98
Reactor Closed Cooling Pumps (RB)	100-106
Hydrogen Recombiner (RB)	30-50
Main Guardhouse	10-35

1. In enclosed spaces, the noise level near components is largely independent of distance due to reflected sound.

2. Upper bound assumes valves operating at the time.

INSERT B to Page 040.045-3

The PA speakers are rated 30 watts continuous with sound level outputs of 125 db measured 4 (four) feet on the axis. Dispersion is 100°. This exceeds the maximum expected db level indicated in 'c'.

Q. 40.47
(9.5.4)

In 9.5.4.1 of the FSAR, you do not specifically reference ANSI Standard N195, "Fuel Oil Systems for Standby Diesel Generators," for the emergency diesel engine fuel oil storage and transfer system. Indicate whether the design of this system complies with the cited standard. If not, provide justification for non-compliance. (Refer to paragraph II.12 of Section 9.5.4, Revision 1, of the Standard Review Plan (SRP), NUREG-75/087.)

Response:

~~The design, materials and physical arrangement meet the requirements of ANSI N-195.~~

replace with attached

Reg. Guide 1.137 Section C.2 along with Appendix B to ANSI N195-1976 outlines a program to ensure the initial and continuing quality of the standby diesel fuel oil. Requirements identified in these doucments are outlined below;

A. Requirements in Appendix B to ANSO N195-1976;

1. Determination and logging of fuel oil quantity at least monthly and after diesel operation for a period of one hour or more.

2. Samples of fuel oil from every storage tank to be analyzed at least every three months in accordance with ASTM D 2274. Results to be logged.

3. Impurity level should be maintained below 2 mg of insolubles per 100 ml. or the manufacturer's recommendations if more restrictive.

4. An analysis of the fuel prior to loading into the storage tanks.

5. Accumulated condensate is to be removed from the storage tanks on a quarterly basis.

B. Reg. Guide 1.137 Section C.2 supplements;

1. Fuel oil specifications to meet VV-V-800b or ASTM D975 or manufacturer's recommendations if more restrictive.

2. The "cloud point" should be less than or equal to the three hour minimum soak temperature or the minimum temperature at which the fuel will be stored.

3. Replacing the fuel in the storage tanks if it does not meet the requirements for viscosity, water, and sediment.

4. Take samples, prior to adding new fuel to the storage tanks. Minimum; Specific gravity, water content, sediment and viscosity.

5. Analysis of the other properties of the fuel oil listed in the applicable specification should be completed within 2 weeks of the addition.

6. Accumulated condensate removed from the storage tanks on a quarterly basis.

7. The periodic sampling procedure should be in accordance with ASTM D270-1975

Response to Question 040.47:

The design, materials and physical arrangements meet the requirements of ANSI N-195.

The fuel oil specifications meet or exceed the manufacturer's recommendations and ASTM-D-975. When the fuel oil is delivered and prior to placing the fuel in the storage tanks, the fuel oil will be sampled. This sample will be tested for viscosity, water and sediment.

In addition, sampling will occur at least once per 92 days. It will be verified that the sample, obtained in accordance with ASTM-D-270, has a water and sediment content of less than or equal to .05 volume percent and a kinematic viscosity @ 40^{o}C at greater than or equal to 1.3, but less than or equal to 2.4 when tested in accordance with ASTM-D-975, and an impurity level of less than 2 mg. at insoluables per 100 ml. when tested in accordance with ASTM-D-2274.

Insert attached

8. Day tanks should be checked for water monthly.

9. The fuel oil stored in the storage tanks should be removed and the tanks cleaned at 10 year intervals.

10. The method of adding fuel oil should be such as to minimize the creation of turbulance of the accumulated residual sediment if supplying an operating diesel.

11. Cathodic protection surveillance

    a) 12 month check to insure protection is adequate.

    b) test leads maintained to allow periodic testing.

    c) 2 month inspection of cathodic protection rectifiers.

    d) Maintain records of these tests.

WNP-2 intends to meet the requirements previously outlined with the exception of the following:

(B9.) WNP-2 has taken exception to cleaning the storage tanks at 10 year intervals. Periodic sampling for sediment content in the fuel should indicate if sediment at the bottom is becoming excessive. WNP-2 commits to filtering or replacing the fuel if it does not meet the specifications. Cleaning of the tank will be accomplished if it is found necessary to replace the fuel.

WNP-2 takes exception to item 11, which outlines cathodic protection surveillance. The standby diesel fuel oil storage tanks are protected with cathodic protection by anodes which are located in the near vacinity. But there are no pigtails connected to the fuel oil system piping, thus no leads to maintain. Cathodic protection is an independent system at WNP-2 and surveillance should not be scoped into the diesel fuel oil system surveillance.

WNP-2 Operations concur with the intent of Reg. Guide 1.137, concerning the method of adding fuel to the storage tanks. WNP-2 must, however, take exception to this recommendation as it now stands. Situations may occur where both standby diesel-generators are in long term operation. Although this situation is not expected to occur frequently it is a possibility. Thus we feel an unqualified commitment to this issue is too restrictive. WNP-2 will, however, when refueling during normal plant status, comply with this requirement.

Pigtails attached to the system piping are used to identify the amount of corrosion which has taken place. No pigtails are attached to DG system piping. Cathodic protection rectifiers are maintained as an independent system.

Q. 040.050
(9.5.4)

In 9.5.4.3 of the FSAR, you state that the materials selected for the diesel fuel oil system assures adequate corrosion protection, thereby minimizing fuel oil contamination. We find this statement to be too general in nature to be meaningful. Accordingly, revise the FSAR to provide a more explicit description of the protection provided for underground piping. If coatings which provide protection against corrosion are being considered for piping and tanks, identify the standards which will govern their application. Discuss the provisions to provide an impressed current type of cathodic protection system, in addition to water-proof protective coatings, for the WNP-2 fuel oil storage and transfer system. The purpose of this cathodic protection is to minimize corrosion of buried piping or equipment. If cathodic protection is not incorporated into the WNP-2 facility, provide justification for the omission. (Refer to Paragraph III.4 of Section 9.5.4, Revision 1, of the SRP.)

Response:

Insert # attached

~~The adequate corrosion protection stated in 9.5.4.3 refers to the interior surface of the piping and storage tanks of the diesel oil system.~~ The exterior surfaces of the buried piping and components are coated with coal tar enamel and all application of coating and covering are in strict accordance with AWWA specification C203.

Diesel oil pipe lines between the storage and day tanks run through culvert pipe sleeves at about six feet below the Diesel-Generator Building Floor. Diesel oil pipe lines extending under the Diesel-Generator Building do not receive full protection from the exterior rectifier-anode system because of the electrical shielding effect of the ground grid and foundation reinforcing and structural steel. Since the earth area under the Diesel-Generator Building is sheltered and hence relatively much drier than the earth exterior to this building, no additional cathodic protection system is provided or required.

Insert attached response

Response: (to Question 040.050)

See revised 9.5.4.3.

ANSI Standard N-195, Section 7, Subsection 7.5, refers to Reference 14 for the protection against corrosion requirements. Reference 14, "Recommended Practice - Control of External Corrosion on Underground or Submerged Metallic Piping Systems, NACE Standard RP-01-69," does not require interior coating which will only serve to introduce additional possible sources of fuel oil contamination.

However, rust particles which might be suspended in the fuel oil and pumped out to the day tank will be removed by the suction strainer and duplex type filter system provided in each fuel line. The suction strainer is located upstream of the skid mounted fuel pump. The strainer element is cleaned and inspected periodically as recommended by the engine manufacturer. Also, the duplex type filter is provided with convoluted micronic elements which eliminate passage of particles five (5) microns or greater in size, to the engine injectors. The elements can be replaced one at a time without stopping the engine. In addition, each injector is provided with inlet filters.

A single failure analysis of the fuel oil storage and transfer system for diesel generators 1A and 1B is presented in Table 9.5-7. Although a single failure may result in loss of fuel to one diesel generator, the other diesel generator can provide sufficient capacity for emergency conditions, including safe shutdown of the reactor (see 8.3) coincident with loss of offsite power.

Each diesel oil storage tank of generator 1A or 1B has a capacity of 60,000 gallons which is more than sufficient to supply oil for one diesel generator for seven days. In addition, each day tank has a capacity of 3000 gallons. The diesel generator fuel consumption at 100% generator rating of 4650 Kw is 340 gal/hr. The HPCS diesel oil storage tank (50,000 gallons) and its associated day tank are also adequate to sustain operation of the HPCS diesel for at least seven days.

The minimum site storage of seven days (even assuming the loss of one storage tank serving diesel generators 1A and 1B) is considered adequate time for obtaining additional fuel oil, if required. Fuel can be available at the site within six hours from local sources (Pasco, Washington), or from more remote terminals within 12 to 24 hours.

See insert. Attached.

Materials selected for this system assure adequate corrosion protection for the interior surfaces of piping, storage and day tanks ~~to~~ minimize fuel oil contamination. ~~Piping systems are ASME SA-106, Grade B.~~ ~~Buried storage~~ tanks are ~~constructed of ASME SA-515,~~ Grade 70, with a 3/16" corrosion allowance. ~~and exteriors~~ The surface of the buried piping and components are coated with coal tar enamel. Application of coating and covering is in strict accordance with AWWA specification C203. ~~The diesel oil day tank is constructed of ASME SA-283, Grade C, with 3/16" corrosion allowance.~~ A fuel oil filter and stainer system is provided in each fuel line to eliminate passage of particles five microns or greater in size to the engine injectors.

9.5.4.4 Testing and Inspection Requirements

System components are inspected and cleaned prior to installation. Instruments are calibrated during testing and automatic controls are tested for actuation at the proper set points. Alarm functions are checked for operability and limits during plant preoperational testing. Automatic actuation of system components is tested periodically in accordance with Chapter 16, Technical Specifications. The system is operated and tested initially with regard to flow paths, flow capacity, and mechanical operability in accordance with Chapter 14.

Insert to page 9.5-47:

Materials for the fuel oil supply system are as follows:

	Material	Corrosion Allowance
Piping	ASME SA-106, GR B	
Burried Storage Tank	ASME SA-515, GR 70	3/16"
Day Tank	ASME SA-283, GR C	3/16"

The corrosion protection of exterior surfaces of the buried piping and components are coated with coal tar enamel and all application of coating are in strict accordance with AWWA Specification C203.

The buried components of the fuel oil system are all at a uniform temperature and not subject to condensation phenomena. The periodic sampling of the fuel oil storage tank bottom will serve a two fold purpose - removing accumulated water and sedimentation, and monitoring any possible corrosion.

A fuel oil filter and strainer is provided on each fuel line to eliminate passage of particles, five (5) microns or larger in size, to the engine injectors.

Diesel oil pipe lines between the storage and day tanks run through culvert pipe sleeves at about six feet below the diesel generator building floor. Diesel oil pipe lines extending under the diesel generator building do not receive full protection from the exterior rectifier-anode system because of the electrical shielding effect of the ground grid and foundation reinforcing and structural steel. Since the earth area under the diesel generator building is sheltered and hence relatively much drier than the earth exterior to this building, no additional cathodic protection system is provided or required.

Q. 40.52
(9.5.4)

In 9.5.4.2 of the FSAR, you state that the diesel-generator fuel oil storage tank is provided with an individual fill and vent line. Indicate whether these lines are located indoors or outdoors and state the height above finished grade at which these lines are terminated. If these lines are located outdoors, discuss the provisions made in your design to prevent the entrance of water or dust into the storage tank during adverse environmental conditions.

Response:

This question was answered in response to Q question ~~number~~ ~~40.15.~~ 040.015.

Q. 040.054
(9.5.5)

Describe how the design of the WNP-2 diesel engine cooling water system provides assurance that all components and piping are filled with water. (Refer to Paragraph III.2 of Section 9.5.5, Revision 1, of the SRP.)

Response:

Please see revised 9.5.5.2.*

*Draft FSAR page change attached to the response to Q. 040.019.

Q. 040.056
(9.5.5)

In 9.5.5.2 of the FSAR, you state that each diesel engine cooling water system is provided with an expansion tank to provide for system expansion and for venting air from the system. In addition, the expansion tank is intended to: (1) provide for minor system leaks at pump shaft seals, valve stems, and other components; and (2) maintain the required net positive suction head (NPSH) at the cooling water system circulating pump. Indicate the size of the expansion tank and state its location. Demonstrate by analysis that the size of the expansion tank is adequate to: (1) maintain the required NPSH at the pump; and (2) provide makeup water for seven days of continuous operation of the diesel engine at its full rated load without the addition of water into the expansion tank. Alternatively, provide a Seismic Category I Safety Class 3 makeup water supply for the expansion tank.

Response:

The 94-gallon expansion tank (26" diameter by 50" long) is mounted on the diesel engine skid, and its bottom is approximately 20 inches above cooling water circulating pump suction. The expansion tank is provided with a pressure cap that maintains pressure on the cooling water system (7 psi) and prevents loss of water due to evaporation.

The expansion tank is provided with a level sight glass which is mounted on the front with instructions that indicate minimum water level. An alarm is provided in the control room to annunciate in case of low water level. A Seismic Category I, Safety Class 3 makeup water line from the standby service water system, is provided as an alternate supply to the expansion tank (PED 215-M-5288).

Diesel generator unit reliability, including the functions required of the circulating water pump and expansion tank were demonstrated prior to installation (qualification and shop permance tests). Periodic testing and maintenance assure continued reliability.

See revised 9.5.5.2.*

*Draft FSAR page change attached to response to Q. 040.019.

Q. 40.59
(9.5.8)

Describe the instrumentation, controls, sensors and alarms of the diesel engine combustion air intake and exhaust system which alert the reactor operator when the design parameters of this system are exceeded. Discuss the actions of the operator if this system annunciates an alarm in the control room. As before, our concern is the time available for an operator to take appropriate action. (Refer to Paragraphs II.1 and II.4 of Section 9.5.8, Revision 1, of the SRP).

Response:

Alarms are not provided on DG exhaust and intake parameters. Other upset conditions are monitored and annunciated on local instrument panels and brought to the main control room operators attention in the form of a single trouble annunciator.

The air filter for the turbocharged diesel engine is the panel type oil bath filter. This type filter is self cleaning during operation, and air restriction due to a clogged filter is not considered a relevant possibility. The panel type oil bath filters provide efficient air filtration with a minimum of maintenance. ~~These filters are inspected, drained and cleaned periodically as recommended by the manufacturer.~~

The diesel exhaust is also an open flow system with no evident potential for development of restriction. Diesels are tested periodically as required by Technical Specification, therefore, any unforseen degradations would become evident in the performance parameters upon which DG operability is based.

Emergency DG systems are redundant therefore no credit is taken for operator action for an assumed failure in a single unit.

The oil level in the oil bath filters will be checked during the diesel pre-start checks. The oil will be drained and cleaned or replaced during each refuelling.

Q. 40.61
(10.2)

Provide a discussion of the inservice inspection program for the throttle-stop valve, the control valve, the reheat stop valve and interceptor steam valve. Discuss the capability for testing of essential components during operation of the turbine-generator system. (Refer to Paragraph III.5 and III.6 of Section 10.2, Revision 1, of the SRP.)

Response:

See revised 10.2.2 and the response to question 40.32.

Q. 040.080
(8.3)
RSP

Operating experience at certain nuclear power plants which have two cycle turbocharged diesel engines manufactured by the Electromotive Division (EMD) of General Motors driving emergency generators have experienced a significant number of turbocharger mechanical gear drive failures. The failures have occurred as the result of running the emergency diesel generators at no load or light load conditions for extended periods. No load or light load operation could occur during periodic equipment testing or during accident conditions with availability of offsite power. When this equipment is operated under no load conditions insufficient exhaust gas volume is generated to operate the turbocharger. As a result the turbocharger is driven mechanically from a gear drive in order to supply enough combustion air to the engine to maintain rated speed. The turbocharger and mechanical drive gear normally supplied with these engines are not designed for standby service encountered in nuclear power plant application where the equipment may be called upon to operate at no load or light load condition and full rated speed for a prolonged period. The EMD equipment was originally designed for locomotive service where no load speeds for the engine and generator are much lower than full load speeds. The locomotive turbocharged diesel hardly ever runs at full speed except at full load. The EMD has strongly recommended to users of this diesel engine design against operation at no load or light load conditions at full rated speed for extended periods because of the short life expectancy of the turbocharger mechanical gear drive unit normally furnished. No load or light load operation also causes general deterioration in any diesel engine.

To cope with the severe service the equipment is normally subjected to and in the interest of reducing failures and increasing the availability of their equipment EMD has developed a heavy duty turbocharger drive gear unit that can replace existing equipment. This is available as a replacement kit, or engines can be ordered with the heavy duty turbocharger drive gear assembly.

To assure optimum availability of emergency diesel generators on demand, applicants who have on order or intend to order emergency generators driven by two cycle diesel engines manufactured by EMD should be provided with the heavy duty turbocharger mechanical drive gear assembly as recommended by EMD for the class of service encountered in nuclear power plants. Confirm your compliance with this requirement.

Response:

The Supply System is committed to have heavy duty turbochargers installed for all EMD diesel engines. This will be completed no later than the first refueling outage.

Q. 040.081
(8.3)

Provide a detailed discussion (or plan) of the level of training proposed for your operators, maintenance crew, quality assurance, and supervisory personnel responsible for the operation and maintenance of the emergency diesel generators. Identify the number and type of personnel that will be dedicated to the operations and maintenance of the emergency diesel generators and the number and type that will be assigned from your general plant operations and maintenance groups to assist when needed.

In your discussion, identify the amount and kind of training that will be received by each of the above categories and the type of ongoing training program planned to assure optimum availability of the emergency generators.

Also discuss the level of education and minimum experience requirements for the various categories of operations and maintenance personnel associated with the emergency diesel generators.

Response:

~~Emergency diesel generator training will consist of the following:~~

a. Operators, Technical, Quality Assurance (QC), and Supervisory personnel will receive training in the theory of operation, safety features and operating procedures of the diesel engines/generators by attending the WNP-2 systems and procedures classes, currently scheduled to be taught commencing with the first iteration in November of 1981. These classes will be a combination of formal classroom instruction, discussion, and actual walk-through of the procedures pertaining to the operation of the diesels. The total amount of training for each operator ~~will be 8-10 hours/man.~~

~~b. Current plans call for all equipment operators,~~ reactor operators, and shift supervisors to receive, as a minimum, the training described above. Selected individuals from the Technical, Supervisory, and Quality Assurance groups will either attend these classes or attend special training sessions designed to cover the required information.

c. These groups will receive refresher training on a recurring basis in conjunction with the annual requalification program to be initiated after the plant is in an operational status.

d. Minimum education and experience levels are a high school graduate or equivalent plus at least four (4) years of applicable maintenance experience. This applies to mechanics; all other positions require at least as much education ~~and/or experience.~~

Insert attached

RESPONSE:

Emergency diesel generator training will consist of the following:

a. Primary diesel maintenance personnel will attend a one-week stationary engine course taught by EMD. This course will provide instruction on the EMD 645E1, 645E4B (our engine) and two other EMD engines. Proper maintenance and operating procedures will be emphasized throughout the instruction. Specific information on engine systems as used in stationary power applications will be a part of the instruction. This course will include information on analysis of engine performance and engine conditions as well as trouble-shooting techniques.

b. Operators, Technical, Quality Assurance (QC), and Supervisory personnel will receive training in the theory of operation, safety features and operating procedures of the diesel engines/generators by attending the WNP-2 systems and procedures classes, currently scheduled to be taught commencing with the first iteration in November of 1981. These classes will be a combination of formal classroom instruction, discussion, and actual walk-through of the procedures pertaining to the operation of the diesels. The total amount of training for each operator will be 8-10 hours/man.

c. Current plans call for all equipment operators, reactor operators and shift supervisors to receive, as a minimum, the training described above. Selected individuals from the Technical, Supervisory and Quality Assurance groups will either attend these classes or attend special training sessions designed to cover the required information.

d. These groups will receive refresher training on a recurring basis in conjunction with the annual requalification program to be initiated after the plant is in an operational status.

e. Minimum education and experience levels are a high school graduate or equivalent plus at least four (4) years of applicable maintenance experience. This applies to mechanics, all other positions require at least as much education and/or experience.

New oncoming personnel will receive the same classes as they come up during the normal rotation. Primary diesel maintenance personnel will periodically attend the EMD engine maintenance course to maintain their expertise.

repetitive repair and maintenance of the existing components. Testing of the unit after adjustments or repairs have been made only confirms that the equipment is operable and does not necessarily mean that the root cause of the problem has been eliminated or alleviated.

d. Upon completion of repairs or maintenance and prior to an actual start, run, and load test a final equipment check should be made to assure that all electrical circuits are functional, i.e., fuses are in place, switches and circuit breakers are in their proper position, no loose wires, all test leads have been removed, and all valves are in the proper position to permit a manual start of the equipment. After the unit has been satisfactorily started and load tested, return the unit to ready automatic standby service and under the control of the control room operator.

Provide a discussion of how the above requirements have been implemented in the emergency diesel generator system design and how they will be considered when the plant is in commercial operation, i.e., by what means will the above requirements be enforced.

Response:

INSERT ON NEXT PAGE

Manufacturer literature as well as correspondence with the A/E, Burns and Roe, have made quite clear the consequences of extended no load or light load operation. ~~The diesel generator starting logic has been modified to start the diesels only when complete offsite power is not available or when a LOCA signal is received. Partial loss of offsite power will not initiate the start of the diesels.~~ Burns and Roe has recommended, in technical memos, establishing the operational practice of always operating the diesel generator in the range of 50-100% of nameplate rating. We concur with this.

However, when this is not possible, the units will be run for a minimum of 30 minutes at a minimum load of 50% following any four (4) hour period of light operation (0-50%).

The Supply System intends to comply with Regulatory Guide 1.108.

As of this date, the test procedures for the diesel generators have not been completed. The procedures when complete will reflect the contents of Regulatory Guide 1.108, and a final equipment checklist will follow the maintenance procedure to assure correct system lineup and that all associated equipment is in its correct position.

Insert A maintenance history file will be maintained on all equipment. The diesel generator maintenance and test history will be included in this file.* Periodically and after maintenance, the history file will be reviewed and components that have a history of failure or continually requiring adjustment will be more closely monitored during subsequent tests. If these components continue to pose problems, they will be replaced by components that have demonstrated greater reliability.

Any discrepancies between the completed diesel test procedures and Regulatory Guide 1.108 will be identified and a justification submitted to the NRC regional office.

*As required by Regulatory Guide 1.108, C.3.A.

Insert to page 040.082-2

When the diesel generator (Units 1 & 2) is automatically started by the loss of the preferred off-site power alone, and without a concurrent LOCA, the diesel generator will run unloaded only until the operator has confirmed the transfer to the back-up off-site source. If both off-site sources are lost, the generator is automatically loaded to greater than 50% of its rated capacity.

Insert to page 040.082-3:

The HPCS diesel generator starts on loss of its only off-site source and will require operator action or a LOCA signal to limit running under no load conditions.

Q. 040.083
(8.3)
(RSP)

The availability on demand of an emergency diesel generator is dependent upon, among other things, the proper functioning of its controls and monitoring instrumentation. This equipment is generally mounted and in some instances the panels are mounted directly on the diesel generator skid. Major diesel engine damage has occurred at some operating plants from vibration induced wear on skid mounted control and monitoring instrumentation. This sensitive instrumentation is not made to withstand and function accurately for prolonged periods under continuous vibrational stresses normally encountered with internal combustion engines. Operation of sensitive instrumentation under this environment rapidly deteriorates calibration, accuracy and control signal output.

Therefore, except for sensors and other equipment that must be directly mounted on the engine or associated piping, the controls and monitoring instrumentation should be installed on a free standing floor mounted panel separate from the engine skids, and located on a vibration free floor area or equipped with vibration mounts.

Confirm your compliance with the above requirement or provide justification for noncompliance.

Response:

~~The Division 1 and 2 diesel generator units are in compliance to the above requirements.~~

~~During HPCS diesel start tests at LaSalle, no excessive vibration was noted. If a specific problem arises during diesel start in WNP-2, the specific problem will be addressed.~~

There are some control and monitoring instruments located on the diesel generator skid. WNP-2 commits to removing this instrumentation from the diesel generator skid and installing it on a free-standing floor panel.

Q. 040.084
(3.2)
(9.5.4)
(9.5.5)
(9.5.6)
(9.5.7)
(9.5.8)

The FSAR text, Table 3.2-1, and Figure 9.5-4 show that the components and piping systems for the diesel generator auxiliaries (fuel oil system, cooling water, lubrication, air starting, and intake and combustion system) that are mounted on the auxiliary skids are designed Seismic Category I and are ASME Section III, Class 3 quality, or designed to ANSI B31.1. The engine mounted components and piping are normally designed and manufactured to DEMA standards, and are Seismic Category I. This is not in accordance with Regulatory Guide 1.25 which requires the entire diesel generator auxiliary systems be designed to ASME Section III, Class 3 or Quality Group C.

a. Upgrade the generator auxiliary systems components and piping up to the engine interface to ASME Section III, Class 3 (Quality Group C) requirements.

b. Provide the industry standards that are used in the design, manufacture, and inspection of the engine mounted piping and components. Also show on the appropriate P&IDs where the Quality Group Classification changes from Quality Group C.

Response:

The fuel oil and cooling water systems piping and components up to the diesel engine interface are designed, fabricated, inspected, installed, examined, and tested in accordance with ASME Section III, Class 3 requirements.

The starting air, air intake, and exhaust systems piping and components except the air receivers (ASME Section VIII, Division 1), up to the diesel engine interface, are designed, fabricated, inspected, installed, examined, and tested in accordance with ANSI B31.1 requirements. These systems are Quality Class I, and all components are traceable and installed per Quality Class I requirements. Nondestructive examination, in accordance with ASME Section III, ND-5000 requirements, is performed on all welds in these piping systems.

The diesel generator units and their skid-mounted auxiliary systems are designed, fabricated, shop installed, inspected and examined, and tested in accordance with the commitments in the WNP-2 PSAR Table C.6-1, "Equipment Classification", page C.6-20, C.6-22, and C.5-7 (attached).

The engine mounted piping and components of the fuel oil, engine cooling water (except heat exchangers - ASME Section III, Class 3 and TEMA Class 3; expansion and reservoir tanks - ASME Section III, Class 3), starting air, and lubricating oil systems are seismically qualified to Category I requirements as part of the diesel engine skid. These systems, furnished with the engine, are the standard systems developed by the engine manufacturer in accordance with DEMA standards, and have a long history of service and reliability. These systems, piping, and components are designed, fabricated, inspected, installed, examined, and tested in accordance with the guidelines and requirements of ANSI B31.1. These systems are Quality Class I, and all components are traceable and installed per Quality Class I requirements.

ATTACHMENT 040-084

		Principal Component (1)	Scope of Supply (2)	Safety Class (3)	Location (4)	Quality Assurance Requirement (5)	Principle Construction Code (6)	Seismic Requirement (7)	Comment
	XXXIX.	Standby AC Power Systems							
	1.	Day Tanks	P	3	DG	B	III-3	O/D	
	2.	Piping and Valves (Fuel Oil)	P	3	DG	B	III-3	O/D	
	3.	Pumps (Fuel Oil)	P	3	DG	B	III-3	O/D	
	~~4.~~	~~Diesel Generators~~	~~P~~	~~2~~	~~DG~~	~~B~~	~~X~~	~~O/D~~	
	5.	Mechanical modules with Safety Function	P	3	DG	B.	X	O/D	
	6.	Cable with Safety Function	P	3	DG,W	B	X	O/D	
5	XL.	Auxiliary AC Power System							
	1.	Essential Components	P	2	W,R	B	X	O/D	
	2.	Nonessential Components	P	G	W,R,T,O	D	X	UBC	
	XLI.	Auxiliary 125/250 Volt DC Power System							
	1.	Batteries	P	2	W	B	X	O/D	
	2.	Battery Charger	P	3	W	B	X	O/D	
	3.	Cables	P	2	W,R	B	X	O/D	
	4.	Modules	P	2	W,R	B	X	O/D	
	XLII.	24 Volt DC Power System							
	1.	Batteries	P	2	W	B	X	O/D	
9	2.	Battery Chargers	P	3	W	B	X	O/D	
	3.	Cables	P	2	W,R	B	X	O/D	
	4.	Modules	P	2	W,R	B	X	O/D	

NOTE 1 - A module is an assembly of interconnected components which constitute an identifiable device or piece of equipment. For exampl , electrical modules include sensors, power supplies, and signal processors and mechanical modules include turbines, strainers, and orifices.

NOTE 2 - GE = General Electric

P = Plant owner (WPPSS)

NOTE 3 - 1, 2, 3 = safety classes defined in Section C.2

G = general

NOTE 4 - A = auxiliary buildings

C = part of, or within primary containment

L = offsite locale

M = any other location

O = outdoors onsite

P = pump house

R = reactor building

S = service building

T = turbine building

W = radwaste/control building

DG = diesel generator building

NOTE 5 - B The equipment shall be constructed in accordance with the quality assurance requirements of 10CFR50, Appendix B and SAR Appendix D.

D The equipment shall be constructed in accordance with the quality assurance requirements of SAR Appendix D.

NOTE 6 - Notations for principle design codes are presented in Table C.5-2.

NOTE 7 - O/D The equipment shall be constructed in accordance with the seismic requirements for the operating basis earthquake and the design basis earthquake as described in Section C.5.3.

ATTACHMENT 040.084

ATTACHMENT 0940,084

TABLE C.5-2 (continued)

PRINCIPAL CONSTRUCTION CODES

Civil Components	Code Group A	B	C	D
Supports and foundations	See Section 12.0 of SAR			
Structures				
Civil equipment				

Notations

NA	Not applicable
X	No appropriate Industrial construction code applicable
III-1,2,3,MC	ASME Boiler and Pressure Vessel Code, Section III, Class 1,2,3 or MC
VIII	ASME Boiler and Pressure Vessel Code, Section VIII, Div. 1
XI	ASME Boiler and Pressure Vessel Code, Section XI
TEMA-C	Tubular Exchanger Manufacturers Association, Class C
B31.1.0	ANSI B31.1.0, Code for Pressure Piping
API-620	API 620, Recommended Rules for Design and Construction of Large Welded Low Pressure Storage Tanks
API-650	API 650, Welded Steel Tanks for Oil Storage
B96.1	ANSI B96.1 Storage Tank Code
D100	AWWA-D100, Standard for Steel Tanks, Stand Pipes Reservoirs, and Elevated Tanks for Water Storage
UBC	Uniform Building Code
SR(a)	Nondestructive Tests Examination Requirements per ASME Section VIII, Division 1
SR(b)	100% Volumetric examination of the sidewall and roof weld joints for plates over 3/16" thick and 100% surface examination of weld joints for plates 3/16" thick or less and the sidewall-to-bottom and sidewall-to-roof joints. These examination requirements to be performed in accordance with the rules of ASME Section III, Class 2.

Q. 040.085
(9.5.5)

Figure 9.5-4 shows an immersion heater in the diesel engine cooling water system. The heater is connected to the engine driven pumps' suction lines and to the inlet to the lube oil cooler. The FSAR in section 9.5.5 does not provide a detailed description of how the diesel engine cooling water system operates during standby conditions nor does the design of this system seem to provide for preheating of the jacket water to enhance engine start capability. Provide a detailed description of how the diesel engine cooling water system operates on standby conditions.

Response:

supplied by Class 1E power

During shutdown periods, an electric immersion heater is provided for standby heating. The engine can thus be kept in constant readiness for an immediate start. The 15 kw, 460 volts, 3-phase AC heating unit is mounted at the bottom of the accessory rack to heat the engine cooling water which circulates by thermosyphon action to the lube oil cooler, engine, and turbocharger after coolers. A thermostat sensing water temperature, controls the heating elements to keep the water in the oil cooler tank between 125°F and 155°F. The auxiliary motor driven oil pump circulates lube oil through the lube oil cooler to pick up heat during standby conditions and then returns the warmed oil to the engine sump (see 9.5.7).

Low oil temperature alarm is provided to ensure that the immersion tank is operating properly (see 9.5.7.2 and 8.3.1.1.8.2.3).

In addition, the diesel generator rooms are maintained at design temperature conditions by heaters supplied by Class 1E power. Temperature sensors in the room annunciate in the event of abnormally low temperature to alert the operators that manual action may be required. The heaters are capable of maintaining the rooms at 70°F during extreme winter conditions to insure the diesels are maintained at a desirable temperature for optimum starting.

a pressure switch on the fan discharge will annunciate an alarm and start the standby fan.

e. Sample Room Air Conditioning System: The sample room hood exhaust system is controlled by a locally mounted selector switch. When switched on, both the hood supply fan and the hood exhaust fan are started, and an associated solenoid valve is energized permitting a pneumatic volume damper on the exhaust fan discharge to receive a control signal. The control signal is transmitted by a differential pressure controller, with probes on either side of the exhaust fan, set to maintain a constant air flow rate. Motor operated bypass dampers which bypass the hood are closed when the hood fans are started.

The sample room air conditioning unit is controlled by a local selector switch and room cooling thermostat. The electric reheat coil is controlled by a separate two stage room heating thermostat.

9.4.7 EMERGENCY DIESEL-GENERATOR BUILDING VENTILATION SYSTEM

9.4.7.1 Design Bases

Each of the three diesel-generator rooms is serviced by a separate heating and ventilating system. The functions of the three systems are to maintain suitable temperatures within the rooms for equipment operation and to prevent the buildup of oil fumes in the three day-tank rooms. An exhaust fan is also provided in each of three oil pump rooms to prevent the buildup of oil fumes in those locations. Each of the systems are designed as engineered safety feature systems and are powered from the respective diesel-generators which they serve.

All three HVAC systems operate automatically to meet ambient temperature requirements for the various locations in the diesel-generator building. Supply air is directed to electrical equipment areas to limit area temperature of 104°F. Air is exhausted from the diesel area where allowable temperature is 120°F. Electric heaters maintain diesel-generator rooms at a minimum temperature of ~~50~~ °F ~~during winter design ambient conditions and 35°F~~ during 70° extreme winter condition to insure

Since an independent and separate diesel-generator HVAC system serves each diesel-generator, a failure in one system will not effect the operational function of the other systems. The HVAC systems are housed in separate rooms in the Seismic

the diesels are maintained at a desirable temperature to insure optimum starting.

Q. 040.086
(9.5.6)
RSP

A study by the University of Dayton has shown that accumulation of water in the starting air system has been one of the most frequent causes of diesel engine failure to start on demand. Condensation of entrained moisture in compressed air lines leading to control and starting air valves, air start motors, and condensation of moisture on the working surfaces of these components has caused rust, scale and water itself to build up and score and jam the internal working parts of these vital components thereby preventing starting of the diesel generators.

In the event of loss of offsite power the diesel generators must function since they are vital to the safe shutdown of the reactor(s). Failure of the diesel engines to start from the effects of moisture condensation in air starting systems and from other causes have lowered their operational reliability to substantially less than the desired reliability of 0.99 as specified in Branch Technical Position ICSB (PSB) 2, "Diesel Generator Reliability Testing," and Regulatory Guide 1.108, "Periodic Testing of Diesel Generator Units Used as Onsite Electric Power Systems at Nuclear Power Plants."

In an effort toward improving diesel engine starting reliability we require that compressed air starting system designs include air dryers for the removal of entrained moisture. The two air dryers most commonly used are the dessicant and refrigerant types. Of these two types, the refrigerant type is the one most suited for this application and therefore is preferred. Starting air should be dried to a dew point of not more than 50°F when installed in a normally controlled 70°F environment, otherwise the starting air dew point should be controlled to at least 10°F less than the lowest expected ambient temperature.

Revise your design of the diesel engine air starting system accordingly; describe this feature of your design.

Response to Q. 040.86

WNP-2 commits to the installation of an air dryer assembly to be installed between the air receiver tanks and the air compressor. In addition, appropriate maintenance and surveillance procedures will be developed to ensure proper operation of the assemblies. This assembly will be installed ~~by the end of the first refueling~~.

before ~~fuel load~~.

Commercial Operation.

Q. 040.088
(9.5.7)
RSP

An emergency diesel generator unit in a nuclear power plant is normally in the ready standby mode unless there is a loss of offsite power, an accident, or the diesel generator is under test. Long periods on standby have a tendency to drain or nearly empty the engine lube oil piping system. On an emergency start of the engine as much as 5 to 14 or more seconds may elapse from the start of cranking until full lube oil pressure is attained even though full engine speed is generally reached in about five seconds. With an essentially dry engine, the momentary lack of lubrication at the various moving parts may damage bearing surfaces producing incipient or actual component failure with resultant equipment unavailability.

The emergency condition of readiness requires this equipment to attain full rated speed and enable automatic sequencing of electric load within ten seconds. For this reason, and to improve upon the availability of this equipment on demand, it is necessary to establish as quickly as possible an oil film in the wearing parts of the diesel engine. Lubricating oil is normally delivered to the engine wearing parts by one or more engine driven pump(s). During the starting cycle the pump(s) accelerates slowly with the engine and may not supply the required quantity of lubricating oil where needed fast enough. To remedy this condition, as a minimum, an electrically driven lubricating oil pump, powered from a reliable DC power supply, should be installed in the lube oil system to operate in parallel with the engine driven main lube pump. The electric driven prelube pump should operate only during the engine cranking cycle or until satisfactory lube oil pressure is established in the engine main lube distribution header. The installation of this prelube pump should be coordinated with the respective engine manufacturer. Some diesel engines include a lube oil circulating pump as an integal part of the lube oil preheating system which is in use while the diesel engine is in the standby mode. In this case an additional prelube oil pump may not be needed.

Confirm your compliance with the above requirements or provide your justification for not installing an electric prelube oil pump.

Response:

A lube oil system is provided for each diesel generator unit with an independent AC motor driven circulating pump to insure lubrication through the diesel generators in the normal standby mode. This was provided to insure lubrication of the turbocharger bearings prior to engine start and the removal of residual heat from the turbocharger after engine shutdown, and in addition, this pump circulates the pre-heated oil through the oil system to keep the engine in a constant state of readiness. Each diesel generator unit (Division 1 and 2) is also provided with a standby DC motor driven soakback pump redundant to the AC driven pump above.

However, the lube oil system for all the diesel generator units will be modified to improve its reliability during repeat start conditions and hence, will be in conformance with NUREG/CR-0660 recommendations.

However, the lube oil modification will provide constant oil circulation through the engine crankshaft bearings, camshafts, rocker arms, rocker shafts, and valves bridges in addition to the turbocharger, and will expel the air from the lube oil system.

The modified system is provided with sight glasses located on the line between the main bearing pressure pump discharge elbow and camshaft counter weight housing. The lower sight glass indicates the engine oil gallery is full while the upper sight glass indicates that oil level is above the camshaft. See Figures 040.088-1 and 040.088-2.

LUBE OIL SYSTEM —— TURBOCHARGED ENGINES

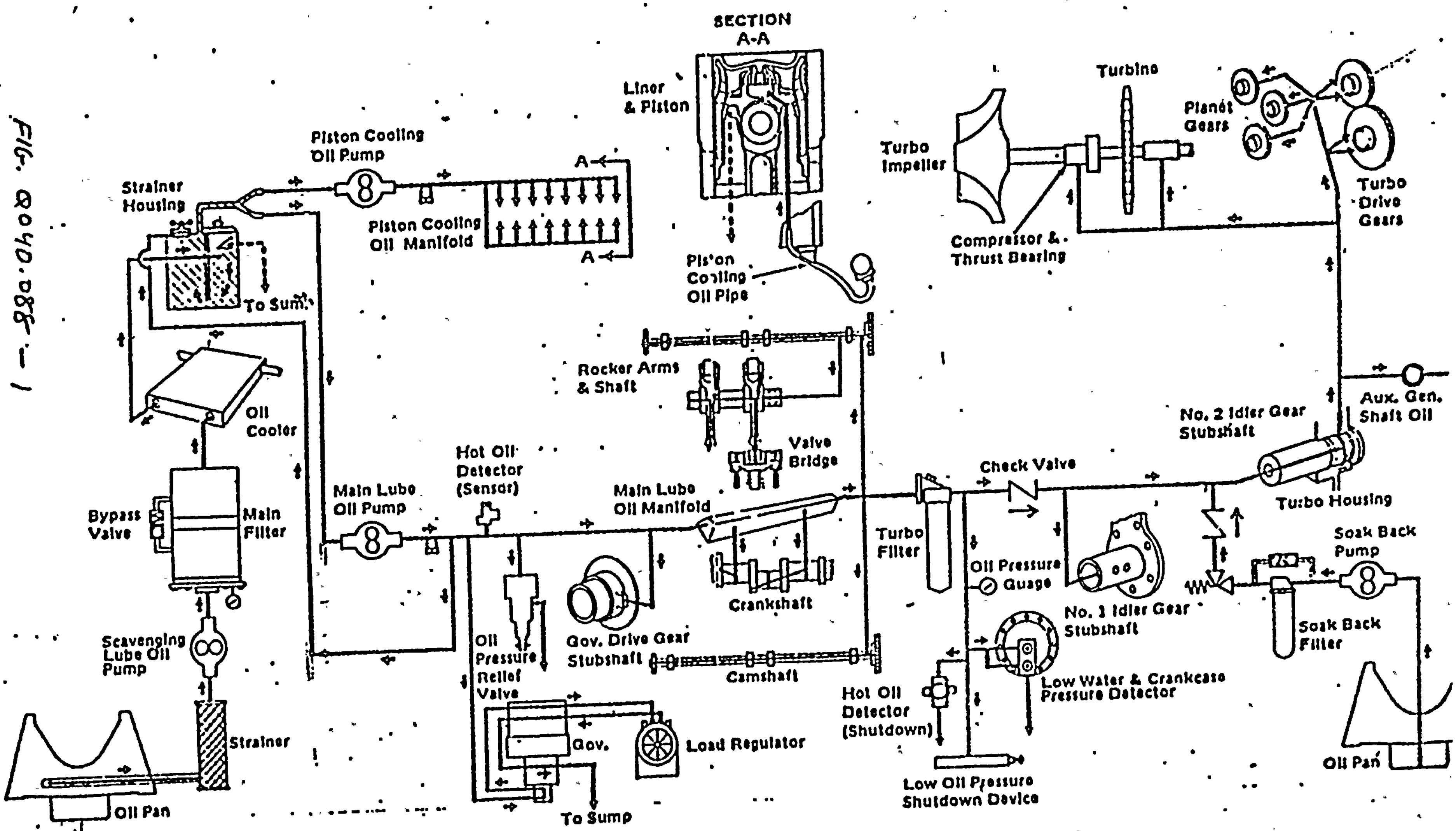
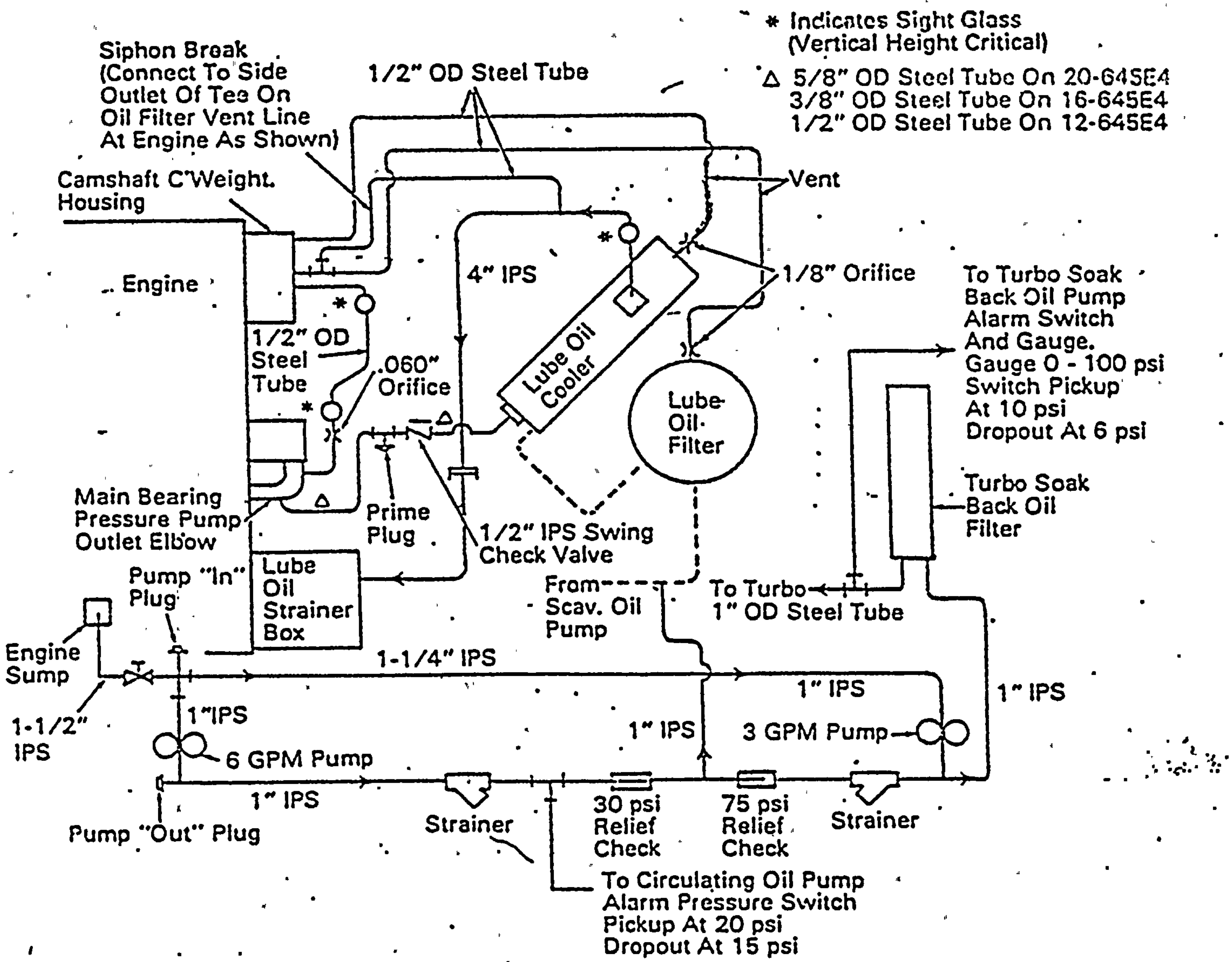


FIG. 8040.088—1



System Schematic Diagram, "S" Units

Fig. 040.088-2

~~ATTACHMENT G.-VII.A.CC.-2~~

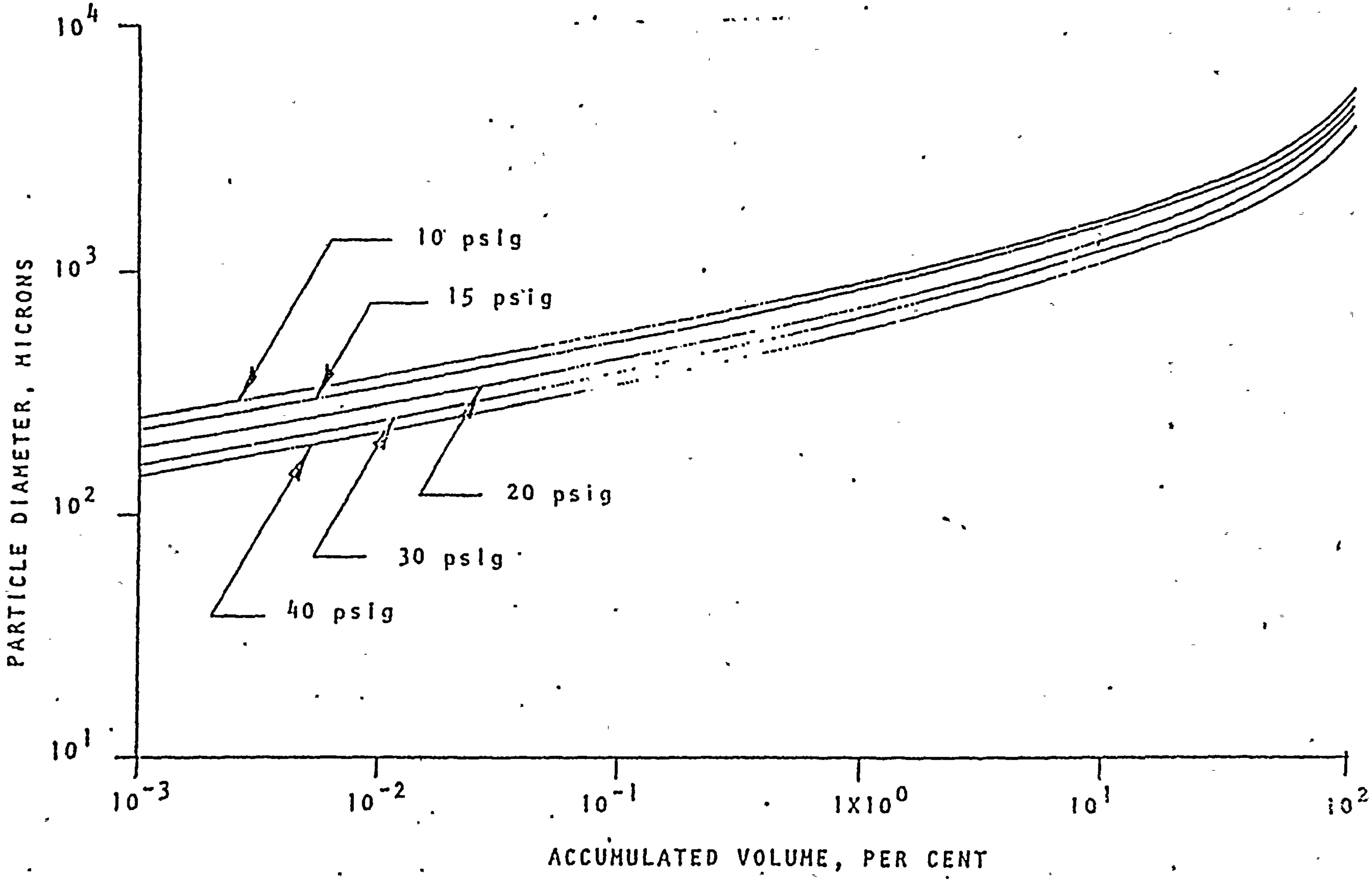


Figure 371.018-1
PARTICLE SIZE VS VOLUME PERCENTAGE

Colmonoy hard surfaced components have performed successfully for the past 10 to 15 years in drive mechanisms. Nitrided components have accumulated 8 years of BWR service. It is normal practice to remove some control rod drives at each refueling outage. At this time, both the Colmonoy hard surfaced parts and nitrided surfaces are accessible for visual examination. In addition, dye penetrant examinations have been performed on nitrided surfaces of the longest service drives. This inspection program is adequate to detect any incipient defects before they could become serious enough to cause operating problems.

All austenitic stainless steel is purchased in the solution heat treated condition. Welding is performed in accordance with Section IX of the ASME Boiler and Pressure Vessel Code. Heat input for stainless steel welds is restricted to a ~~minimum~~ maximum of 50,000 Joules per inch and interpass temperature to 350°F. Heating above 800°F (except for welding) is prohibited unless the welds are subsequently solution annealed. These controls are employed to avoid severe sensitization and comply with the intent of Regulatory Guide 1.44.

4.5.1.4 Control of Delta Ferrite Content

All type 308 weld metal is purchased to a specification which requires a minimum of 5% delta ferrite. This amount of ferrite is adequate to prevent any micro-fissuring (hot cracking) in austenitic stainless steel welds.

An extensive test program performed by General Electric Company, with the concurrence of the Regulatory Staff, has demonstrated that controlling weld filler metal ferrite at 5% minimum produces production welds which meet the requirements of Regulatory Guide 1.31, "Control of Stainless Steel Welding". A total of approximately 400 production welds in five BWR plants were measured and all welds met the requirements of the Interim Regulatory Position to Regulatory Guide 1.31.

4.5.1.5 Protection of Materials During Fabrication, Shipping and Storage

All the control rod drive parts listed above (4.5.1.1) are fabricated under a process specification which limits contaminants in cutting, grinding and tapping coolants and lubricants. It also restricts all other processing materials (marking inks, tape etc.) to those which are completely removable by the applied cleaning process. All contaminants are then required to be removed by the appropriate cleaning process prior to any of the following:

Preoperational and inservice inspection of the main steam lines and the main steam line isolation valves are presented in 5.2.4 and 6.6.

The use of four main steam lines permits inspection and testing of the turbine stop, control, reheat stop and intercept valves and main steam line isolation valves during plant operation with a minimum of load reduction.

The manner and frequency of the inspection and testing will take into consideration the manufacturer's recommendations in conjunction with the plant generating requirements. Details of this inspection and testing program will be established along with other balance-of-plant inspection and testing requirements, a program currently in progress.

10.3.5 WATER CHEMISTRY

This section is not applicable to a BWR. See 10.4.6 for reactor coolant water chemistry considerations.

10.3.6 STEAM AND FEEDWATER SYSTEM MATERIALS

Materials used for the main steam supply system which is part of the reactor coolant pressure boundary are found in Table 5.2-4. Materials used for portions of the main steam system described in this section are as follows:

a.	Pipe	ASME/ASTM - SA 106 Grade B, ASME/ASTM - SA 155 CL1-KCF70
b.	Valves	ASME/ASTM - SA 105 Grade II, ASME/ASTM - SA 216 Grade WCB ASME/ASTM - SA 217 Grade C-5
c.	Fittings	ASME/ASTM - SA 181 Grade II, ASME/ASTM - SA 105 Grade II, ASME/ASTM - SA 515 Grade 70 ASME/ASTM - SA 234 Grade WPB

10.3.6.1 Fracture Toughness

Impact tests in accordance with the size limitation specified in ASME Code Section III, Class 1 are performed on all ASME Code Section III, Class 2 main steam system materials for all pressure retaining ferritic steel parts. The tests are conducted at a temperature of 32°F or lower in accordance with NC-2310 of the Summer 1972 Addendum of ASME Code Section III.

GD Bouchey	- 370	FJ Markowski - 420	
KA Hadley	- 905A		
LT Harrold	- 570	bcc: EF Beckett	- NPI
BA Holmberg	- 906D	OK Earle	- B&R RO
JD Martin	- 927M	JC Plunkett	- NUS
RG Matlock	- 901A	NS Reynolds	- D&L
RM Nelson	- 905A	WNP-2 Files	
~~KS Nordby~~	- 905A		
~~PL Powell~~	- 905A		
~~GC Sorensen~~	- 340		
~~CS Taylor~~	- 905A		
WW Waddel	- 570		
J Yatabe	- 410		
Docket File			
Chrono File			
LF/File			
RMN/LB			
PLP/LB			
GCS/LB-340			
BAH/LB-906D			
GDB/LB-370			
FJM/LB-420			
cf (8)			

THIS LETTER (DOES) (DOES NOT) ESTABLISH A NEW COMMITMENT.

WPPSS CORRESPONDENCE NO. ____________

February 11, 1982
G02-82-160
SS-L-02-PLP-82-004

Docket 50-397

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

Dear Mr. Schwencer:

Subject: NUCLEAR PROJECT NO. 2
CONFIRMATION OF AUTOMATION
DEPRESSURIZATION SYSTEM (ADS) OPERATION

Per a telephone conversation with Mr. T. Collins (NRC staff) the following aspects of ADS operation are confirmed:

- The ADS valves are divided into two (2) divisions, one division of three valves the other of four valves. In case of loss of normal air supply, two separate headers are supplied from the back up supply. Each header has its own stepping programmer and its own bank of nitrogen bottles. A one-hundred day supply is available for long term operation.

- Each division of ADS valves is supplied from the corresponding D.C. power division (station battery). Therefore, a single electric failure cannot disable both ADS divisions.

- No single mechanical or electrical failure can affect all seven ADS valves simultaneously.

Very truly yours,

G. D. Bouchey
Deputy Director, Safety and Security

PLP/jca

cc: R Auluck - NRC
WS Chin - BPA
T Collins - NRC
Feil - NRC

AUTHOR:	PL Powell	FOR SIGNATURE OF: for GD Bouchey		
SECTION				
FOR APPROVAL OF	RM Nelson	BA Holmberg	FJ Markowski	GC Sorensen
APPROVED	[signature]	DC Timmins	FJ Markowski	GC Sorensen
DATE		2/10/82	10 FEB 82	

THIS LETTER (DOES) (DOES NOT) ESTABLISH A NEW COMMITMENT.
WPPSS CORRESPONDENCE NO. ____

GD Bouchey - 370
KD Cowan - 927M
KA Hadley - 905A
LT Harrold - 570
Holmberg - 906D
Martin - 927M
RM Nelson - 905A
KS Nordby - 905A
RG Matlock - 901A
TL Meade - 927M
PL Powell - 905A
GC Sorensen - 340
GD Taylor - 905A
Waddel - 570
Watabe - 410
Docket File
Chrono File
AT/File
TLM/LB-927M
BAH/LB-906D
KDC/LB-927M
JDM/LB-927M
GCS/LB-340
GDB/LB-370
SF (2)

bcc: EF Beckett - NPI
CK Earle - B&R PO
JC Plunkett - NUS
NS Reynolds - D&L
WNP-2 Files

February 11, 1982
G02-82-161

Docket No. 50-397

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

Dear Mr. Schwencer:

Subject: NUCLEAR PROJECT NO. 2
SER OPEN ITEMS, PSB ELECTRICAL

The following is in response to Mr. Sang Rhow's concerns expressed via conference telephone conversation, Monday, February 8, 1982.

The surveillance criteria that will be used in the maintenance program to test the second level under-voltage protective relays is as follows:

- $\pm$ 3% tolerance band on drop-out setpoint
- Annual periodicity
- 103% pick up after drop-out

Non-Class IE loads were included in the table (8.3-1) which identifies the loading of engineering safety systems buses. These loads have been further identified with note 7. The table shows that the addition of the Non-Class IE loads does not exceed the capability of the Diesel Generator.

Attached is a forthcoming FSAR change which responds to the concern that the motors may not have the capability to withstand a degraded bus voltage condition for the eight (8) seconds. This change also contains a one (1) line diagram showing the logic associated with the second level under-voltage protection.

FILE

AUTHOR:	TL Meade *Jerry L. Meade*		FOR SIGNATURE OF:	GD Bouchey	2/11/82
SECTION					
FOR APPROVAL OF	RM Nelson	KD Cowan	JD Martin	BA Holmberg	GC Sorensen
APPROVED	*[signature]*	*CM Powers for*	*[signature]*	*[signature]*	*[signature]*
DATE		2/11/82	2/11/82	2/11/82	2/11/82

Mr. A. Schwencer
Page Two
February 11, 1982
G02-82-161

The second level under-voltage protection logic does not trip the supply breaker from the Diesel Generator under any circumstance. Thus, there is no need to bypass this protection when the Diesel Generator is supplying the bus.

Very truly yours,

G. D. Bouchey

G. D. Bouchey
Deputy Director, Safety and Security

TLM/jca
Attachment

cc: R Auluck - NRC
WS Chin - BPA
R Feil - NRC Site
S Rhow - NRC

TABLE 8.3-1

DIVISION 1 DIESEL-GENERATOR LOADING SEQUENCE
AUTOMATIC AND MANUAL LOADING OF ENGINEERED SAFETY SYSTEMS BUS

	Item Description	No. On Bus	Total HP/KW Connected To Bus	SHUTDOWN WITH LOSS OF OFFSITE POWER: No. Req'd Part Of Set	Time to Start (1)	Time to Stop	KW	LOCA WITH LOSS OF OFFSITE POWER: No. Req'd Part Of Set	Time to Start	Time to Stop	KW
1)	Motor Operated Valves (5)	Set	200kw	Set	0 Sec	(2)	-	Set	0 Sec	(2)	-
2)	Emergency Lighting & Power (7)	Set	124kw	Set	0 Sec	(4)	124	Set	0 Sec	(4)	124
3)	Diesel Auxiliaries & HVAC	Set	200kw	Set	0 Sec (3)	(3)	124	Set	0 Sec (3)	(3)	94
4)	LPCS Water Leg Pump	1	15/12kw	1	0 Sec (3)	(3)	12	1	0 Sec (3)	(3)	12
5)	Standby Liquid Control Pump	1	40/33kw	-	-	-	-	-	-	-	-
6)	RCIC Water Leg Pump	1	15/12kw	1	0 Sec (3)	(3)	12	1	0 Sec (3)	(3)	12
7)	Fuel Pool Recirc. Pump	1	50/40kw	1	10 Hrs (4)	(4)	(40)	-	-	-	-
8)	Plant Service Water Pump A (7)	1	1500/1197kw	1	10 Sec	(4)	1197	-	-	-	-
9)	LPCS Pump	1	1500/1197kw	-	-	-	-	1	0 Sec	(4)	1197
10)	RHR Pump A	1	800/642kw	1	10 Min (4)	(4)	(642)	1	5 Sec	(4)	642
11)	Standby Service Water Pump	1	1750/1377kw	1	20 Sec	(4)	1377	1	20 Sec	(4)	1377
12)	Cooling Tower Make-up Water Pump (7)	* 2	1600/1270kw	1	Note 6 (4)	(4)	(635)	-	-	-	-
13)	Control Rod Drive Pump (7)	** 1	250/205kw	1	(4)	(4)	(205)	-	-	-	-
14)	Reactor Closed Cooling Pump	1	200/160kw	1	0 Sec	(4)	160	-	-	-	-
15)	Load Center Transformer Losses TR-7-71 & 7-73	2	45kw	2	0 Sec	Cont.	33	2	0 Sec	Cont.	33
16)	250 V Battery Charger	1	165kw	1	0 Sec	(4)	135	1	0 Sec	(4)	135
17)	125 V Battery Charger	1	43kw	1	0 Sec	(4)	43	1	0 Sec	(4)	43
18)	Uninterruptible Power Supply (7)	1	30kw	1	0 Sec	(4)	30	1	0 Sec	(4)	30
19)	Standby Gas Treatment Fans	2	50/40kw	1	10 Min (4)	(4)	(20)	1	30 Sec	(4)	20
	& Heater Coils	2	45kw	-	-	-	-	2	20 Sec	(3)	45
20)	RPS Mg Set (7)	1	25/20kw	1	0 Sec	(4)	20	1	(4)	(4)	(20)
21)	Hydrogen Recombiner	1	10/44kw	-	-	-	-	1	60 Min (4)	(4)	(44)
22)	Drywell Cooling & Fans	Set	182kw	Set	0 Sec	(4)	182	-	-	-	-
23)	Control Air Compressor (7)	1	100/82kw	1	1 Hr (4)	(4)	(82)	-	-	-	-
24)	Containment Instrument Air Compressor	1	15/12kw	1	0 Sec (3)	(4)	12	-	-	-	-
26)	Reactor Bldg. Elec. Equip. HVAC	Set	368kw	Set	0 Sec (3)	(4)	15	Set	0 Sec (3)	(4)	15
27)	Control Bldg. Elec. Equip. HVAC	Set	283kw	Set	5 Sec (3)	(4)	71	Set	5 Sec (3)	(4)	71
28)	Rad. Bldg. Elec. Equip. HVAC (7)	Set	150kw	-	-	-	-	-	-	-	-
29)	Make-up Water Pumphouse Electric Equipment HVAC (7)	* Set	90kw	Set	Note 6 (4)	(4)	(90)	-	-	-	-
30)	Standby Service Water Pumphouse Elec. Equip. HVAC	Set	38kw	Set	0 Sec	(4)	10	Set	0 Sec	(4)	10
				Total Automatically Applied			3557kw	Total Automatically Applied			3860kw

For Notes see bottom of Table 8.3-2

* Only 1 required. Not added to load since other load can be dropped when they are necessary a few days later.

** Can be supplied manually after operator checks load capacity on generator.

( ) kw Figures in parenthesis are for manually applied loads not added to total automatically applied loads.

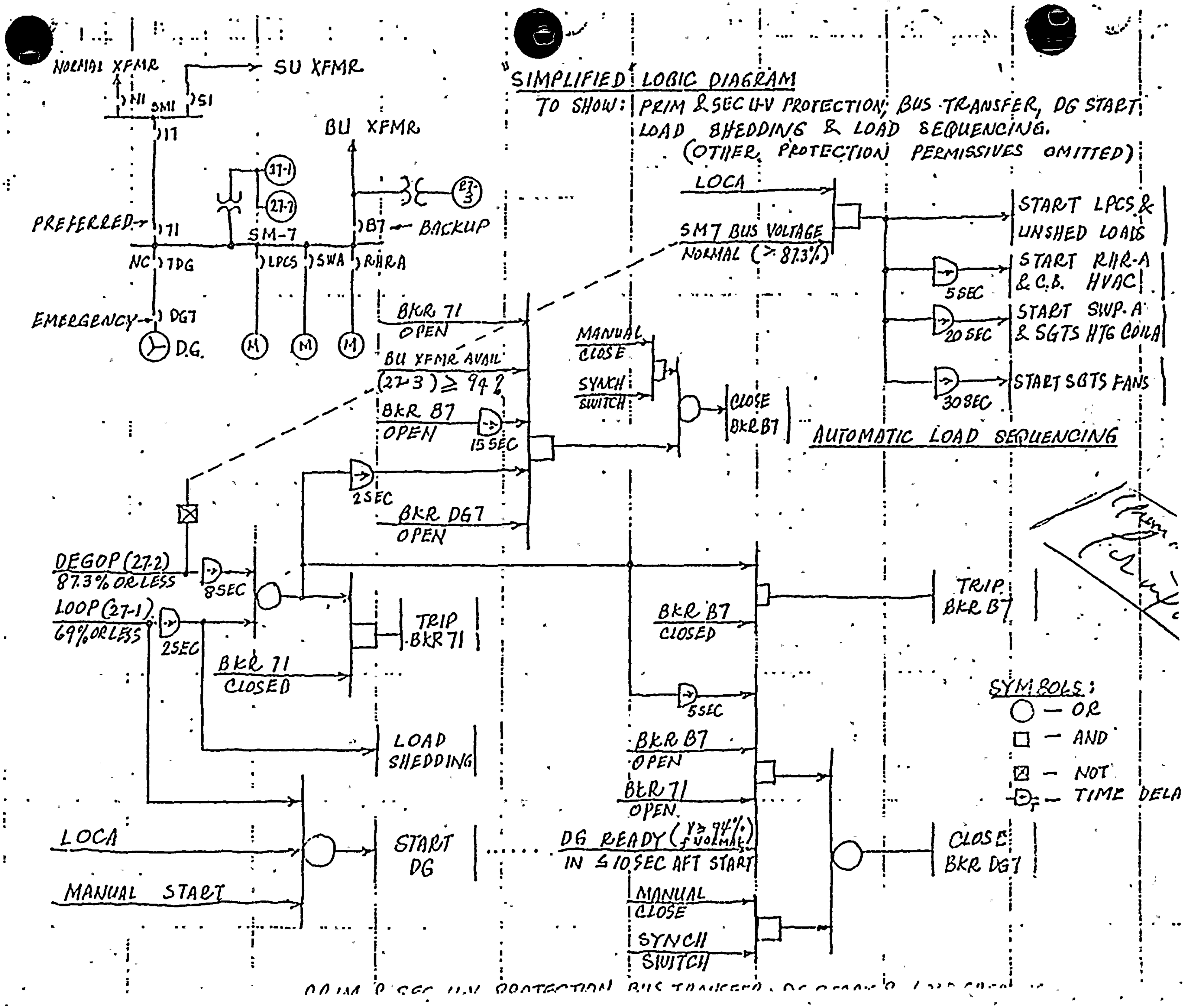
TABLE 8.3-2

DIVISION 2 DIESEL-GENERATOR LOADING SEQUENCE
AUTOMATIC AND MANUAL LOADING OF ENGINEERED SAFETY SYSTEMS BUS

	Item Description	No. On Bus	Total HP/KW Connected To Bus	SHUTDOWN WITH LOSS OF OFFSITE POWER: No. Req'd Part Of Set	Time to Start (1)	Time to Stop	KW	LOCA WITH LOSS OF OFFSITE POWER: No. Req'd Part Of Set	Time to Start (1)	Time to Stop	KW
1)	Motor Operated Valves (5)	Set	200kw	Set	0 Sec	(2)	-	Set	0 Sec	(2)	-
2)	Emergency Lighting & Power (7)	Set	122kw	Set	0 Sec	(4)	122	Set	0 Sec	(4)	122
3)	Diesel Auxiliaries & HVAC	Set	185kw	Set	0 Sec (3)	(3)	127	Set	0 Sec (3)	(3)	97
4)	RHR Water Leg Pump	1	15/12kw	1	0 Sec	(4)	12	1	0 Sec	(4)	12
5)	Standby Liquid Control Pump	1	40/33kw	-	-	-	-	-	-	-	-
6)	Standby Liquid Control Tank Heaters	2	50kw	1	0 Sec (3)	(3)	10	1	0 Sec (3)	(3)	10
7)	Fuel Pool Cooling & Cleanup Sys.	Set	50/40kw	Set	10 Hrs (4)	(4)	(40)	-	-	-	-
8)	Plant Service Water Pump B (7)	1	1500/1197kw	1	10 Sec	(4)	1197	-	-	-	-
9)	RHR Pumps B & C	2	1600/1284kw	1	10 Min (4)	(4)	(642)	2	5 Sec & 0 Sec	(4)	1284
10)	Standby Service Water Pump	1	1750/1377kw	1	20 Sec	(4)	1377	1	20 Sec	(4)	1377
11)	Cooling Tower Make-Up Water Pump (7)	*2	1600/1270kw	1	Note 6 (4)	(4)	(635)	-	-	-	-
12)	Control Rod Drive Pump (7)	**1	250/205kw	1	(4)	(4)	(205)	-	-	-	-
13)	Reactor Closed Cooling Pump	2	400/320kw	1	0 Sec	(4)	160	-	-	-	-
14)	Load Center Transformer Losses TR-8-81 & 8-83	2	45kw	2	0 Sec	Cont.	33	2	0 Sec	Cont.	33
15)	125 V Battery Charger	1	43kw	1	0 Sec	(4)	43	1	0 Sec	(4)	43
16)	Standby Gas Treatment Fans &	2	50/40kw	1	10 Min (4)	(4)	(20)	1	30 Sec	(4)	20
	Heater Coils	2	45kw	-	-	-	-	2	20 Sec	(3)	45
17)	RPS MG Set (7)	1	25/20kw	1	0 Sec	(4)	20	1	(4)	(4)	(20)
18)	Hydrogen Recombiner	1	10/44kw	-	-	-	-	1	60 Min (4)	(4)	(44)
19)	Drywell Cooling Fans	Set	186kw	Set	0 Sec	(4)	186	-	-	-	-
20)	Control Air Compressor & Dryers (7)	1	100/126kw	1	1 Hr (4)	(4)	(126)	-	-	-	-
21)	Containment Instrument Air Compressor	1	15/12kw	1	0 Sec (3)	(4)	12	-	-	-	-
22)	Reactor Bldg. Elec. Equip. HVAC	Set	371kw	Set	0 Sec (3)	(4)	12	Set	0 Sec (3)	(4)	12
23)	Control Bldg. Elec. Equip. HVAC	Set	331kw	Set	0 Sec	(4)	61	Set	0 Sec	(4)	61
24)	Radwaste Bldg. Elec. Equip. HVAC (7)	Set	145kw	-	-	-	-	-	-	-	-
25)	Make-up Water Pumphouse Equip. HVAC (7)	**Set	90kw	Set	Note 6 (4)	(4)	(90)	-	-	-	-
26)	Standby Service Water Pumphouse	Set	40kw	Set	0 Sec	(4)	10	Set	0 Sec	(4)	10
				Total Automatically Applied			3382kw	Total Automatically Applied			3126kw

NOTE:
(1) Time to start after bus voltage and frequency have been established. Maximum time after signal to start generator for voltage to be established is 10 seconds.
(2) Motors stop automatically when valve action is completed.
(3) Start and/or stop automatically with associated pump or diesel, pressure, temperature switch or flow.
(4) Start and/or stop manually.
(5) Intermittent loads not included as long term loading.
(6) Available after one day.
For additional notes see bottom of Table 8.3-1.

(7) Items are non-Class 1E.



SIMPLIFIED LOGIC DIAGRAM
TO SHOW: PRIM & SEC U-V PROTECTION, BUS TRANSFER, DG START LOAD SHEDDING & LOAD SEQUENCING.
(OTHER PROTECTION PERMISSIVES OMITTED)
NORMAL XFMR
SU XFMR
N1
SM1
S1
11
BU XFMR
27-1
27-7
27-3
PREFERRED
71
SM-7
B7
BACKUP
NC
7DG
LPCS
SWA
RHRA
EMERGENCY
DG7
D.G.
M
LOCA
SM7 BUS VOLTAGE NORMAL (> 87.3%)
START LPCS & UNSHED LOADS
5 SEC
START RHR-A & C.B. HVAC
20 SEC
START SWP-A & SGTS HTG COILS
30 SEC
START SGTS FANS
BKR 71 OPEN
BU XFMR AVAIL (27-3) ≥ 94%
BKR B7 OPEN
15 SEC
2 SEC
BKR DG7 OPEN
MANUAL CLOSE
SYNCH SWITCH
CLOSE BKR B7
AUTOMATIC LOAD SEQUENCING
DEGOP (27-2) 87.3% OR LESS
8 SEC
LOOP (27-1) 69% OR LESS
2 SEC
BKR 71 CLOSED
TRIP BKR 71
LOAD SHEDDING
TRIP BKR B7
BKR B7 CLOSED
5 SEC
BKR B7 OPEN
BKR 71 OPEN
LOCA
MANUAL START
START DG
DG READY (V ≥ 94% f NORMAL) IN ≤ 10 SEC AFT START
MANUAL CLOSE
SYNCH SWITCH
CLOSE BKR DG7
SYMBOLS:
— OR
— AND
— NOT
— TIME DELA

starting the diesel generator

In the event of sustained bus undervoltage (87.3% of ~~rated~~ nominal bus voltage lasting more than 8 seconds), the second level of undervoltage protection automatically ~~isolates~~ trips the feeder breaker connecting the normal/startup sources to their respective 4.16 kV Class 1E buses. For Div I & II This action results in loss of bus voltage, thereby, initiating load shedding and energizing the three bus transfer timers mentioned in the primary undervoltage scheme above. In this case, however, the first two-second timer is bypassed. The second two-second timer permits closing of the backup source breaker and the five-second timer permits closing of the diesel generator breaker assuming a failure of the backup source breaker to close. Closure of the backup source and diesel generator breakers is permitted if the source voltage is at least 94% of normal.

Should the degraded voltage condition exist on the backup power source while the source is supplying the load, the second level undervoltage relays would then isolate that source, again initiating the sequence of events described for the secondary undervoltage sensing scheme above. However, closing of backup feeder breakers, as part of that sequence of events, is blocked.

When the Class 1E buses SM-7 and SM-8 are being fed from the turbine generator, the possibility of sustained undervoltage is not considered credible due to response characteristics of the voltage regulator and protection equipment for the unit.

The scheme described assures a power source within the acceptable voltage limits for the Class 1E loads at all times. Circuit design allows for testing of the individual relays, one at a time, without disrupting the protective function.

For division 3, the second level of undervoltage protection trips the normal/startup source breaker, thereby causing a loss of bus voltage. From this point on the primary undervoltage relay takes over and the ensuing sequence of events will be the same as in the case of the loss of offsite power discussed above.

~~Note: Supply Sys.~~ concurrence required.

U

8.3.1.2.4.3.2 Secondary Undervoltage Sensing

Static Class 1E undervoltage relays with definite time delay located in each of the redundant Division 1 and Division 2 4.16 kV Class 1E switchgear units are utilized for detection of sustained degraded voltage in the offsite power system. This protection scheme is designed to compliment the primary undervoltage scheme described above.

The trip setpoint of each relay is ~~set~~ at 3631 volts, corresponding to 87.3 percent of nominal bus voltage and 90.8 percent of nominal motor voltage. Trip setpoint selection is based upon insuring 90 percent of motor nominal voltage at the motor terminals, including allowance for feeder voltage drop. The relay automatically resets when the bus voltage recovers to 89.9% or over. more Eight seconds of time delay is provided to permit override of motor starting dip. The duration of motor starting voltage dip is very short lived - in the order of 2 to 5 seconds. The second level of undervoltage relays will not, therefore, initiate actions for this condition.

The relays operate to isolate the degraded source and initiate the sequence of events to select the next available source. Circuit design precludes spurious voltage loss signal and allows for testing of the individual relay, one at a time, without disrupting the protective function. DERIVED FR This time delay is ~~equal to~~ t 8 sec delay prior to the offsite bre er trip plus a 5 sec delay prior to the DG break closu During a loss - of - coolant accident, diesel generator power is available to the emergency loads 13 seconds after the sustained degraded grid voltage condition is sensed at the emergency bus. The above time delay is acceptable since during a concurrent loss-of-coolant accident ~~(LOCA)~~, the emergency core cooling system (ECCS) coolant injection time requirements as specified in Table 6.3-1 are met. See Figures 8.3-16C and 8.3-17C for the logic diagrams of Divisions 1 and 2 secondary undervoltage protection.

Vote:
ipply
ystem
oncurrence
required

The same voltage trip and time delay setpoints are used for the Division 3 secondary undervoltage relays. For Division 3, however, the diesel generator power is available at the bus 11 sec after a coincident occurrence of a loss-of-coolant accident and a degraded grid condition. See Figure 8.3-18C for the Division 3 secondary under-voltage protection logic diagram. The HPCS injection time requirement of Table 6.3-1 is also met.

This time delay is equal to the 8 second delay prior to the offsite breaker trip plus a 3 second delay prior to the DG breaker closure.

during an accident when.

* Assume that the emergency motor loads are running a subsequent degradation of off-site grid voltage occurs. Assuming further that the degraded voltage is anywhere between 69% and 87.3% of the bus nominal voltage; the following analysis shows that the motor loads remain adequately protected and ready for a restart as soon as the power supply has been restored to normal. Under the above condition the emergency motors would be exposed to a terminal voltage between 72% and 90% (approximately) of nameplate value. For terminal voltages between 80% (or 75% for the HPCS pump motor) and 90%, the motor will continue to run overloaded up to 125% (133% for the HPCS pump motor) of full load current*. ~~The motors can safely carry this overload for 8 seconds~~ For voltages less than 80% (75% for the HPCS pump motor), the motor torque could be less than the load torque, thus resulting in deceleration and eventual stalling.

The motors are protected against locked rotor conditions by a relay which trips and locks out in 10 seconds. Since the secondary undervoltage relaying is set to trip the offsite source breaker 8 seconds after the undervoltage condition develops, the locked rotor protective relay will not trip. Load shedding after the 8th second trips the motors without locking them out. A subsequent motor restart when power supply is restored will expose the motor to locked rotor currents for another 5 seconds as a maximum.

* - The motors can safely carry this overload for 8 seconds.

The total ~~locked rotor~~ stall time is therefore equal to 13 seconds. This is less than the designed motor safe stall time of ~~which is~~ 14 seconds at rated terminal voltage or greater than 17 seconds at voltages less than 90% of rated. Since the voltage at the motor is assumed to be less than 90% of nameplate value, it follows ~~is concluded~~ that there is sufficient margin between the motor stall time under the above worst case conditions, and the ~~the~~ designed motor safe stall time.

¶ If on the other hand it is assumed that the motor starting signal comes after the occurrence of the degraded grid voltage condition, the emergency motors are prevented from starting until the voltage has been restored to normal. This is accomplished by instantaneous interlocks from the secondary undervoltage relays to the motor starting circuit or by time delay ~~relays permissive~~ relays which delay ~~allows~~ motor starting following the accident signal, as in the case of the standby service water pumps.

The primary undervoltage sensing scheme for the 4.16 kV Class 1E distribution system utilizes instantaneous under-voltage relays to start the Divisionn 1, 2 and 3 standby diesel-generators immediately upon loss of voltage at their associated 4.16 kV Class 1E switchgear buses. These relays also energize ~~two-second~~ timers which allow the system to attempt to establish supply from the startup source (if the plant is operating from the normal source at the time) or verify that voltage loss is maintained (if the plant is operating from the startup source initially).

In the event that voltage loss is maintained for two seconds, the Division 1 and/or 2 timers trip the Class 1E bus normal/startup source breakers, institute load shedding, and energize additional two-second and five-second timers. The second two-second timer are utilized to attempt closing of the backup source breakers; backup transformer undervoltage relays will inhibit breaker closure in the event of backup source undervoltage. The five-second timers are used to inhibit closure of the diesel generator breakers until the system has had time to attempt re-establishment of supply via the backup source.

Since there is no provision for the Division 3 4.16 kV Class 1E bus transfer to ~~cannot be supplied by~~ the backup source, its diesel generator breaker closes via signals from the single Division 3 three-second timer, which is energized by the bus undervoltage relay.

Refer to 8.3.1.1.8.1.7 and 8.3.1.1.8.2.7 for additional discussion of the standby diesel generator starting and loading systems.

A second level of undervoltage protection is provided to protect against the effects of prolonged degraded voltage which could adversely affect the operation of Class 1E electric motors requiring at least 90% of the ~~rated~~ nameplate voltage for continuous operation. (See Table 8.3-13.) For this reason, Class 1E bus SM-4, SM-7 and SM-8 voltages are monitored by an additional set of Class 1E undervoltage relays. Three static type undervoltage relays are provided for each bus and are connected ~~in such a~~ manner as to monitor all three line voltages (i.e., phases AB, BC, & CA). The arrangement utilizes a 2-out-of-3 logic to preclude the possibility of spurious voltage loss signal and facilitate testing.

Note: Supply Sys. concurrence required

INTERNAL DISTRIBUTION

THIS LETTER SATISFIES COMMITMENT NO. ______

THIS LETTER (DOES) (DOES NOT) ESTABLISH A NEW COMMITMENT.

WPPSS CORRESPONDENCE NO. ______

GD Bouchey - 370
KA Hadley - 905A
LT Harrold - 570
JW Hedges - 907M
BA Holmberg - 906D
JA Landon - 988U
JD Martin - 927M
~~RG Matlock - 901A~~
~~RM Nelson - 905A~~
~~KS Nordby - 905A~~
~~PL Powell - 905A~~
GC Sorensen - 340
~~CD Taylor - 905A~~
~~WH Waddel - 570~~
~~D Yetabe - 440~~
BPN/LB
PLP/LB
JWH/LB-907M
BAH/LB-906D
JDM/LB-927M
JAL/LB-988U
GCS/LB-340
GDB/LB-370
~~KT/file~~
Docket File
Chrono File
~~sf (2)~~

bcc: EF Beckett - NRC
OK Earle - B&R
JC Plunkett - NUS
NS Reynolds - D&L
WNP-2 Files

February 12, 1982
G02-82-165
SS-L-02-PLP-82-005

Docket No. 50-397

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

Dear Mr. Schwencer:

Subject: NUCLEAR PROJECT NO. 2
WNP-2 RESPONSE TO NUREG-0612,
"CONTROL OF HEAVY LOADS"

Reference: a) Letter, D.C. Eisenhut to All Licensees, et al, "Control of Heavy Loads", dated December 23, 1981

b) Letter, G.D. Bouchey (SS) to A. Schwencer (NRC), Same Subject, dated January 13, 1982

Reference (a) requested confirmation, within 90 days of receipt, that interim actions forwarded with reference (a) had been implemented. Submittal of a final report was to follow.

WNP-2, being a near term operating license applicant, submitted the final report (reference (b)) in lieu of an interim report as sufficient time exists to implement the final report prior to operations. However, to support the Safety Evaluation Report review process, this letter confirms that the final report (reference (b)) encompasses or exceeds the requirements requested for an interim response by reference (a).

Very truly yours,

G. D. Bouchey
Deputy Director, Safety and Security

PLP/jca

J. Ridgley

cc: R Auluck - NRC
KS Chin - BPA
R Feil - NRC Site

AUTHOR:	PL Powell	FOR SIGNATURE OF:	GD Bouchey	2/11/82
SECTION				
FOR APPROVAL OF	~~RM Nelson~~	BA Holmberg	JW Hedges	JD Martin	JA Landon
APPROVED		BA Holmberg	2/11/82	for	2/11/82
DATE	GC Sorensen	2/10/82		2/11/82	

9.	Instrumentation for detection of inadequate core cooling	II.F.2
10.	HPCI & RCIC initiation levels	II.K.3.13
11.	Isolation of HPCI & RCIC	II.K.3.15
12.	Challenges to and failure of relief valves	II.K.3.16
13.	ADS actuation	II.K.3.18
14.	Restart of core spray and LPCI	II.K.3.21
15.	RCIC suction	II.K.3.22
16.	Space cooling for HPCI & RCIC	II.K.3.24
17.	Power on pump seals	II.K.3.25
18.	Common reference level	II.K.3.27
19.	ADS valve, accumulators, and associated equipment and instrumentation	II.K.3.28
20.	Emergency plans	III.A.1.1/ III.A.2
21.	Emergency support facilities	III.A.1.2
22.	In-plant I_2 radiation monitoring	III.D.3.3
23.	Control room habitability	III.D.3.4

Response:

~~Table 3.2-1 will be modified prior to fuel load to add and identify the~~ quality class of each generic item listed in the question and not ~~already~~ included in the table. Work performed during the operating phase~~,~~ including modification, maintenance, calibration, and testing, ~~will be~~ performed under ~~the applicable requirements of the Operational Quality Assurance Program.~~

Current
Tabulated

a. The following responses correspond with the same numbered items as in Question 421.043:

1. The biological shielding is part of the structures of the Reactor Building, Containment and Control/Radwaste Buildings. (See FSAR Section 3.8.2, 3.8.3 and 3.8.4.1.1.). As indicated in Table 3.2-1, Items 46 and 47, applicable parts of these sturctures are QC-I and thus all modifications to the biological shielding will be performed under the appropriate QA measures. Further addition to Table 3.2-1 is not required.

2. All missile barriers with the exception of the RPS MG set barrier are part of structures. Use of structural walls for barriers is covered in FSAR Section 3.5. The RPS MG set missile barrier is addressed in a forthcoming revision to FSAR Section 3.5 and is safety-related and controlled by the QA Program. Since where missile barriers are required, they are part of Seismic Category I structures they are QC-I as addressed in Item 46 and 47 of Table 3.2-1. Thus all modifications to missile barriers will be performed with the appropriate QA measures.

3. The spent fuel pool is safety-related and is part of the Reactor Building structure (FSAR 3.8.4.1.1.6) and is covered in Table 3.2-1 under Item 47.1. The spent fuel pool liner is safety-related and is addressed in Item 34.1 of Table 3.2-1. Further addition to Table 3.2-1 is not required.

4. Equipment and drain floor piping and containment isolation valves are addressed in Item 19.3 (refer to color coded Figures 3.2-9, 3.2-10 and Figure 11.2-2).* Further additions to Table 3.2-1 are not required.

5. Quenchers and quencher supports are safety-related and under QA Program requirements and listed in Table 3.2-1 under Item 2.4 (refer to color coded Figure 3.2-2). (Supports always meet the same or higher QA requirements as the item supported.)

6. Downcomers and braces are safety-related and under QA Program requirements and listed in Table 3.2-1 under Item 2.4 (refer to color coded Figure 3.2-2).

7. The containment spray system is part of the Residual Heat Removal (RHR) system, is safety-related and under QA Program requirements and listed under Items 10.4 and 10.8 (refer to color coded Figure 3.2-6) in Table 3.2-1.

8. Condensate and feedwater piping from PRV to the outermost isolation valves and the containment isolation valves are safety-related and are under QA Program requirements and are listed in Table 3.2-1 under Items 2.5 and 2.11 (refer to color coded Figure 3.2-2).

9. Primary containment access hatches/locks/doors are safety-related, are attached to the containment vessel and subject to QA Program requirements. These items are covered by Item 46 "Containment Vessel" in Table 3.2-1. Figure 3.2-1 shows that everything pertaining to the containment boundary would be code Group B, QC-I. Accordingly, primary containment penetration assemblies are safety-related and are under QA Program requirements. They are specifically addressed in FSAR Section 3.8.6 and 3.8.2.2.4.

*Color coded figures are FSAR figures.

9. Primary Containment vacuum relief valves are safety-related and under QA Program Management. They are part of the Primary Containment cooling and purging system and covered under Item 28 of Table 3.2-1, see color code Figure 3.2-15.

10. Engineering safety features actuation systems are safety-related and are under QA Program Management. These instrument and control systems are addressed in FSAR Sections 7.3 and 7.4 and are covered in Table 3.2-1 under each applicable system, i.e., for HPCS Item 12.10 covers the electrical components of the Engineering safety features actuation system for the HPCS system.

11. Combustible gas control system hydrogen recombiners are safety-related and under QA program control and are addressed in Item 30 of Table 3.2-1, refer to color coded Figure 3.2-17.

12. Safety-related instrument and control systems are identified in Chapter 7, Table 7.1-1, of the FSAR and are under QA program control. A footnote to this effect will be added to Table 3.2-1.

13. All of the items in Section 13 a) through l) are safety-related and controlled by the QA Program with the following clarifications.

a) Diesel generator packages, including auxiliaries, are safety-related to the extent as defined in FSAR Table 3.2-1, Item 38.

b) Valve operators are considered with the valves where they are installed and are addressed in Table 3.2-1 under the system the valve is installed in.

c) Conduit and cable trays and their supports for Class IE cables and those whose failure may damage other safety-related items are safety-related and controlled by the QA Program.

d) Instrumentation, control, power cables, transfers, inverters, etc., are considered with the system for which they are installed. If the system is a safety-related system it is controlled by the QA Program.

e) Fire-rated penetration seals for cable systems will be under the control of the Supply System Operational QA Program.

14. All of the items in Section 14 a) through d) are safety-related and controlled by the QA Program with the following clarifications.

a) Conduit and cable trays and their supports for Class IE cables and those whose failure may damage other safety-related items are safety-related and controlled by the QA Program.

b) Battery racks are considered with the batteries.

c) Protective relays and control panels are considered with the equipment panel they service. (Item 13d above is applicable.)

15. The normal operation fixed area and airborne montioring systems are discussed in FSAR Subsection 12.3.4. These systems are not safety-related and, therefore, are not controlled by the QA Program.

The post-accident high range radiation monitoring system for the drywell and containment is safety-related and the components are controlled by the QA Program.

Portable radiation monitoring is not a "structure, system, or component" requiring entry in Table 3.2-1. Control of these monitors as well as calibration of all radiation monitors is provided for by the appropriate WNP-2 Administrative Procedures. These procedures are subject to the pertinent requirements of the Supply System Operational QA Program.

16. The normal operation and post-accident process and effluent radioactivity monitoring systems are discussed in FSAR Section 7.5 and 11.5.

The only radioactivity monitoring components that are controlled by the QA Program are the radiation monitors for the main steam line, reactor building ventilation monitor, and the containment atmosphere radiation monitor. These monitors are covered in Items 9 and 48 of Table 3.2-1.

Portable radioactivity monitoring is not a "structure, system, or component" requiring entry in Table 3.2-1. Control of these monitors as well as calibration of all radioactivity monitors is provided by the appropriate WNP-2 Administrative Procedures. These procedures are subject to pertinent requirements of the Supply System Operational QA Program.

17. The normal sampling systems are discussed in FSAR Subsections 9.3.2 and 12.3.4. ~~These systems are not safety-related and are not, therefore, controlled by the QA Program.~~ No revision to Table 3.2-1 is required. Insert attached

18. Radioactive contamination measurement and analysis is not a "structure, system, or component" requiring entry in Table 3.2-1. Control of this activity is provided by appropriate WNP-2 Administrative Procedures. These procedures are subject to pertinent requirements of the Supply System Operational QA Program.

19. Personnel monitoring internal and external is not a "structure, system or component" requiring entry in Table 3.2-1. Control of this activity is provided by the appropriate WNP-2 Administrative Procedures. These procedures are subject to pertinent requirements of the Supply System Operational QA Program.

20. As required by the Supply System Operational Quality Assurance Program, WNP-2 has in-place measures to assure that measuring and testing equipment used in activities affecting quality are stored, controlled, calibrated and adjusted to maintain accuracy within specified limits.

21. Decontamination is not a "structure, system, or component" requiring entry in Table 3.2-1. Control of this activity is provided by the appropriate WNP-2 Administrative Procedures. These procedures are subject to pertinent requirements of the Supply System Operational QA Program.

22. Respiratory protection including testing is not a "structure, system, or component" requiring entry in Table 3.2-1. Control of this activity is provided by the appropriate WNP-2 Administrative Procedures. These procedures are subject to pertinent requirements of the Supply System Operational QA Program.

Insert to Page 421.043-6c, item a.17:

Control of this activity is provided by appropriate WNP-2 Administrative Procedures. These procedures are subject to pertinent requirements of the Supply System Operational QA Program.

23. Contamination control is not a "structure, system, or component" requiring entry in Table 3.2-1. Control of this activity is provided by the appropriate WNP-2 Administrative Procedures. These procedures are subject to pertinent requirements of the Supply System Operational QA Program.

24. Radiation shielding at WNP-2 may be classified as 1) shielding required to limit off-site radiation doses to allowable limits, and 2) shielding required to limit in-plant doses for personnel access to various plant areas.

Radiation shielding to limit off-site doses is considered safety-related and is provided by the containment and auxiliary buildings. These structures are fully designed as safety-related structures and are capable of withstanding all postulated natural phenomena and dynamic events.

Radiation shielding for personnel access to various plant areas is not considered safety-related. Radiation shielding for this purpose is provided in containment, turbine building, and radwaste/control building. Reinforced concrete walls are used to provide for necessary shielding. The in-plant radiation shielding walls in the radwaste/control building and containment are considered safety-related only to the extent that they must maintain structural integrity, i.e., the radiation shielding capability is not safety-related.

The radiation shielding walls in the turbine building have no safety-related function.

The quality assurance requirements for shielding are commensurate with QA requirements for the structures in which it is located. The QA requirements for the Containment, Reactor and Radwaste/Control Buildings are given in FSAR Table 3.2-1, Sections 46 and 47, Item 1 and 3.

25. Meteorological data collection equipment is not a "structure, system, or component" requiring entry in Table 3.2-1. Control of this activity is provided by the appropriate WNP-2 Administrative Procedures. These procedures are subject to pertinent requirements of the Supply System Operational QA Program.

26. This item is not a "structure, system, or component" requiring entry in Table 3.2-1. Control of this activity is provided by the appropriate Administrative Procedures. These procedures are subject to pertinent requirements of the Supply System Operational QA Program.

27. As required by the Supply System Operation Quality Assurance Program, WNP-2 has in-place measures to assure that measuring and testing equipment used in activities affecting quality are stored, controlled, calibrated and adjusted to maintain accuracy within specified limits.

28. WNP-2 has no safety-related masonry walls.

29. Class IE electrical duct banks are safety-related and under the control of the QA Program.

30. WNP-2 essential service water pipe line is the standby service water system and safety-related piping, including buried piping, is under QA Program requirements. This item is covered in Table 3.2-1, Section 25.1.

b. The following responses correspond with the same numbered items as in Question 421.043:

1. WNP-2 FSAR update (Amendment 20) upgrades the spent fuel pool cooling function of the Fuel Pool Cooling and Cleanup system to Quality Class I and Table 3.2-1 will be updated accordingly. The spent fuel pool cleanup function of the Fuel Pool Cooling and Cleanup system is not safety-related and therefore is not covered by the QA Program.

2. Item 1.6 of FSAR Table 3.2-1 includes these non-safety class internal structures such as feedwater spargers, steam dryers, shroud bead and steam separator assembly, incore guide tubes and stabilizers, and surveillance sample holders. These structures do not perform a safety function and are not required to prevent or mitigate the consequences of accidents. A failure of the feedwater sparger will not prevent transmission of cooling water to the core affecting the safety of the reactor system. Although these structures are not safety-related, they are so designed that they will not adversely affect the safety function of the safety-related structures. These non-safety structures are installed under QA Program requirements, and maintenance performed in the reactor vessel on these components is performed utilizing quality-affecting procedures which are under the control of the operational QA Program.

c. The following responses correspond with the same numbered items as in Question 421.043:

1. ~~The plant-safety-parameter display console is not safety-related. Justification is contained in NUREG-0696 Paragraph 2.5 and 4.2 (Table and Footnotes). Emergency Facilities (1) are not required for safe shutdown or immediate or long-term operation following a LOCA, and (2) will not cause the release of radioactivity in excess of 10CFR100 limits or increase severity of a DBA if they should fail. Therefore, Emergency Support Facilities will not be added to Table 3.2-1.~~ (Insert attached)

2. Vents are not required on BWR's to ensure post-accident natural circulation capability (see FSAR Appendix B Section II.B.1), but are provided for other uses. The vents are located in existing safety-related piping systems. No modifications in design were required to meet the requirements of this item. No change is required to FSAR Table 3.2-1 in that the vents are already shown on the various color coded figures.

3. The plant shielding item requires a review of the accessibility of various station areas under post-accident conditions. This review is not a "structure, system, or component" and thus is not appropriate for Table 3.2-1.

4. The post-accident sampling system is currently in the design stage. Revisions to the color coded figures will show the appropriate quality class when the design is finalized.

5. As stated in FSAR Appendix B Section II.D.3, a safety/relief valve position monitoring system is being added to WNP-2 to indicate the open/closed condition of each safety/relief valve. The system will meet the same quality requirements as stated for Section 2, Item 14 of FSAR Table 3.2-1.

6. Dedicated hydrogen penetrations are safety-related and included in Item 30 of Table 3.2-1 (refer to color coded Figure 3.2-17).

Insert to Page 421.043-6e, item c.1:

Control of this activity is provided by appropriate WNP-2 Administrative Procedures. These procedures are subject to pertinent requirements of the Supply System Operational QA Program. No revision to Table 3.2-1 is required.

7. The containment isolation valves and their associated circuits are safety-related and controlled by the QA Program. The isolation valves are listed in FSAR Table 3.2-1 under each individual applicable system. See also the response to Item a.10 above.

8. Modifications to the Accident Monitoring System are addressed in FSAR Appendix B Section II.F.1.1. Parts of the design modifications required by this item are safety-related and will result in modifications to Chapter 7 of the FSAR. The safety-related portions of these design modifications will be under the QA Program.

~~9. WNP-2 is performing a study in response to this item; the safety-relatedness of any additional instrumentation systems that may result from this study will be determined when the study is complete. See FSAR Appendix B Section II.F.2.~~ Insert attached

10. As stated in FSAR Appendix B Section II.K.3.13, there is no change planned in HPCS and RCIC initiation levels. As stated in this section; however, modifications will be made for auto-reset of RCIC, this addition will meet the same requirements of FSAR Table 3.2-1, Item 8.

11. As stated in FSAR Appendix B Section II.K.3.15, a time delay to the RCIC break detection circuitry will be added. This addition will meet the same quality requirement as given in FSAR Table 3.2-1 Section 13 Item 8.

12. FSAR Appendix B Section II.K.3.16 indicates that further modification to the WNP-2 design would not significantly reduce the frequency of safety/relief valve events. Therefore, no changes to FSAR Table 3.2-1 are required.

13. As stated in FSAR Appendix B Section II.K.3.18, no changes to the ADS is required, therefore, no change to FSAR Table 3.2-1 is required.

14. As stated in FSAR Appendix B Section II.K.3.21, modification to provide automatic restart for core spray and LPCI is not required. Therefore, change to FSAR Table 3.2-1 is not required.

15. The automatic switchover of the RCIC suction from the condensate storage tank to the suppression pool is considered safety-related and is subject to the pertinent QA requirements for Class IE electrical systems. Appropriate changes to Table 3.2-1 and the associated figures will be made when the design is finalized.

16. FSAR Appendix B Section II.K.3.24 describes the emergency space cooling system to the equipment rooms containing the HPCS and RCIC pumps. No design changes were necessary to meet this item, appropriate components of this system are under QA Program control and are listed in Table 3.2-1.

17. As stated in FSAR Appendix B Section II.K.3.25, no change in the WNP-2 design is required. Therefore, no addition to FSAR Table 3.2-1, is required.

18. As stated in FSAR Appendix B Section II.K.3.27, no change, other than recalibration, in the WNP-2 design is required. Therefore, no addition to FSAR Table 3.2-1 is required.

19. All equipment associated with the ADS System is safety-related and controlled by the QA Program. Major components are listed in FSAR Table 3.2-1 Section 37.

Insert to Page 421.043-6f:

9. WNP-2 is performing a study in response to this item. The safety-relatedness of any additional instrumentation systems that may result from this study will be determined when the study is complete. Additional instrumentation systems that are identified as safety-related will be included in Table 7.1-1. See part a, item 12 of this response. All instrumentation systems will be under the control of appropriate WNP-2 administrative procedures which are subject to pertinent requirements of the Supply System's Operational QA Program.

20. Emergency plans are not a "structure, system or component" requiring entry in Table 3.2-1. Emergency plan procedures are subject to audit by Supply System QA.

21. ~~Equipment and other items associated with the Emergency Support Facilities are not safety related. Justification is contained in NUREG-0696 Paragraph 2.5 and 4.2 (Table and Footnotes). Emergency Facilities (1) are not required for safe shutdown or immediate or long-term operation following a LOCA, and (2) will not cause the release of radioactivity in excess of 10CFR100 limits or increase severity of DBA if they should fail. Therefore, Emergency Support Facilities will not be added to Table 3.2-1.~~ (Insert attached.)

22. Inplant I_2 radiation monitoring would be performed under post-accident procedures in accordance with the Supply System Emergency Plan. (See FSAR Appendix B Section III.D.3.3.). Equipment for this monitoring under post-accident conditions will be controlled by procedures subject to the pertinent requirements of the Supply System Operational QA Program.

23. The control room HVAC system is safety-related and controlled by the QA Program. This system is addressed in FSAR Table 3.2-1 Section 31.

Insert to Page 421.043-6g, item c.21:

Control of this activity is provided by appropriate WNP-2 Administrative Procedures. These procedures are subject to pertinent requirements of the Supply System Operational QA Program. No revision to Table 3.2-1 is required.

FOLLOW-UP

PSB - ELECTRICAL

ITEM. Agenda Item #5
(from 9/25/81 meeting)

REMARKS: As was agreed to in the 9/25/81 meeting, a study has been completed showing available protection for electrical penetrations from primary and backup fault limiting devices. The study has been completed and is presented on the following attached pages. In selected cases, I^2t levels exceed the allowable penetration ratings considering the primary device fails. As stated, the Supply System commits to correct the situation. When the corrective action is identified, the responses to Q 40.34, 40.35, Appendix C of the FSAR, and FSAR section 8.3 will be updated to reflect the revised design and compliance with RG 1.63.

RESOLUTION: This item remains open pending NRC final review of the revised design details to be submitted in the FSAR. The Supply System will submit a proposed FSAR change as summarized above defining the final design by Feb. 15, 1982.

ACTION: SEE REVISED FSAR PAGES ATTACHED

TABLE 3.8-6 (Continued)

Penetration No./Type	Service	Qty.	Size	Voltage	Ampacity (Continuous) (8)	Description	Qty.	Length	Type	Box
PENETRATION (TYPE 4)			CONDUCTORS PER PENETRATION					TERMINATION		
X100A, B,C,D NON-CANISTER	NEUTRON MONITORING	4	75-OHM 7 STR #26 AWG	3000	----	Triaxial (1)	3	As Req.	Inline Connector	Yes
			135-OHM 7 STR #34 AWG	2000	----	Triaxial (1a)	4	As Req.	Inline Connector	
			#18 AWG	1000	----	SIS 90°C	145	3 ft.	Crimp Splices	
X-101A, B,C,D NON-CANISTER	CONTROL ROD POSITION INDICATION	4	#18 AWG	600	----	SIS 90°C	750	As Req.	Box Mounted Connector (Note 2)	Yes
			#18 AWG	600	----	Chromol	57	As Req.		
			#18 AWG	600	----	Alumol	57	As Req.		
X-102A, B NON-CANISTER	THERMO-COUPLE & RTD	2	#18 AWG	600	----	Copper (3)	224 ~~[illegible]~~	3 ft.	Pigtail With Parallel Crimp Connector	Yes
			#18 AWG	600	----	Constantan (3)	224	3 ft.		
			16 #~~[illegible]~~ AWG	600	----	Copper (4)	228	3 ft.		
X-105A, B,C,D NON-CANISTER	CONTROL AND INDICATION	4	#14 AWG	600	5 AMP	SIS 90°C	235	As Req.	Terminal Block	Yes
			#14 AWG	600	5 AMP	SIS 90°C	235	As Req.		
			#14 AWG	600	5 AMP	SIS 90°C	26	As Req.		

TABLE 3.8-6 (Continued) Page 3 of 3

NOTES FOR TABLE 3.8-6

(1) Raychem No. 10496 or functional equivalent.

(1a) Raychem No. 10495 or functional equivalent.

(2) On the inboard or drywell side of the penetration the wires are connected to 13 conductor connectors; each connector has 11-#18 AWG copper wires, one #18 chromel and one #18 alumel wire.

On the outboard or reactor building side of the penetration, each group of 11-#18 AWG wires is connected to a 13 conductor connector. All connectors are mounted on the side of termination box which has removable covers so that the penetration assembly conductors between the connector and the pressure seal can be exposed. The pairs of thermocouple wires are grouped into 6 pair thermocouple connectors.

(3) Thermocouple wires for Type X-102 penetrations are individual conductors for copper, constantan and copper drain wire, electrically equivalent to the cables.

(4) For use as 3/C cable for RTD leads only.

(5) Shielded thermocouple pair with drain wire for penetration temperature monitoring.

(6) Two groups of 13 conductors are formed, and each group is enclosed in a continuous metallic conduit through the entire penetration assembly and extending four feet beyond the termination conduit.

(7) Three 500 MCM, 8kv external cables are attached to the large terminals on both sides of the penetration assembly. The small terminal is a ~~neutral~~ conductor.

(8) These values are the minimum requirements for a Normal Operating Temperature of 135°F as indicated on Table 3.8-7.

ground

308C

Regulatory Guide 1.63, Rev. 1, May 1977

Electric Penetration Assemblies in Containment Structures for Light-Water-Cooled Nuclear Power Plants

Compliance or Alternate Approach Statement:

Revision 1 is not applicable to WNP-2 since it applies to the evaluation of construction permit applications docketed after December 30, 1977. WNP-2 complies with the guidance set forth in IEEE 317-1972 as modified by Revision 0 of Regulatory Guide 1.63.

General Compliance or Alternate Approach Assessment:

The compliance assessment given below correspond numerically to the Regulatory Positions as indicated in Section C of Regulatory Guide 1.63, Rev. 0, October 1973.

1. Capability of withstanding ~~a~~ maximum fault I^2T ~~short-circuit event~~ heating in the case that overload protective devices fail:

Insert A attached

~~WNP-2 is in compliance with this requirement since in all cases, the protective devices are backed by similar devices designed in compliance with IEEE 279.~~

2. The maximum containment pressure specified for WNP-2 complies with the safety margins required by the ASME Boiler and Pressure Vessel Code, Article N3000, Footnote 1.

3. The position refers to specific applicability or acceptability of other codes, standards and guides covered separately in other regulatory guides.

4. WNP-2 complies with the requirement of IEEE 336 and ANSI N45.2 concerning the quality assurance.

Specific Evaluation Reference:

Refer to 3.8.6 ~~and 3.1.5.2.~~

¶ Insert B attached

INSERT A TO PAGE C.3-56:

WNP-2 is in compliance with this requirement. In all cases, the overcurrent protective devices in circuits subject to short circuit are backed up by other overcurrent protective devices which are also designed to limit the fault current I^2T heating experienced by the penetration conductors to levels below the conductor ratings.

INSERT B TO PAGE C.3-56:

Refer to the response to Question 040.034 for detailed analysis of primary and backup overcurrent protective device fault clearing capability.

Q. 40.34

Provide a list of the following items, by voltage class, for the electrical penetrations in the containment: a) the I^2t rating; b) the maximum predicted fault currents; c) an identification of the maximizing faults; d) the protective equipment setpoints; and e) the expected clearing times.

Response:

~~Please see the attachment for information requested. The information in the table indicates that no single fault will cause a loss of penetration seal integrity due to excessive heating. The I^2t of the maximum expected fault, is in every case, less than the I^2t rating of the penetration.~~

Insert attached

PENETRATION NUMBER	TYPE	CABLE SIZE (NOTE 4)	I^2T RATING	MAXIMUM FAULT (AMPS)	MAXIMIZING FAULT	PROTECTIVE EQUIP. SET POINT (AMPS)	TYPE	CLEARING TIME (SECONDS)
X-103 A-D	MV (6.9KV)	1000 MCM	6.8×10^8	56,206	NOTE 1	1000	BRKR	.1333
X-104 "	LV (480V)	#1/o AWG	3.9×10^7	17,340	NOTE 2	60	FUSE	.01
" "	" "	#4 AWG	1.2×10^7	12,060	NOTE 2	30	FUSE	.01
" "	" "	#10 AWG	8.4×10^6	5,267	NOTE 2	15	FUSE	.01
X-105 "	Control & Ind	#14 AWG	1.2×10^5	356	NOTE 3	20	FUSE	.5
X-107 A,B	LV (480V) & Control	#10 AWG	8.4×10^5	5,267	NOTE 2	15	FUSE	.01
" "	" "	#14 AWG	1.2×10^5	62.5	NOTE 4	10	FUSE	6.0
" "	" "	#16 AWG	N.A.	Neg.*	N.A.	N.A.	N.A.	N.A.
X-100 A-D	Neutron Monit.	Inst. Cables	N.A.	Neg.*	N.A.	N.A.	N.A.	N.A.
X-101 A-D	Control Rod Posit.	Inst. Cables	N.A.	Neg.*	N.A.	N.A.	N.A.	N.A.
X-102 A,B	T/C & RTD	Inst. Cables	N.A.	Neg.*	N.A.	N.A.	N.A.	N.A.

* Negligible

NOTES:

1. Maximum momentary fault current available at 6.9KV switchgear buses serving power cables passing through penetrations is assumed to be available at the penetrations themselves.
2. The maximum fault current at any 480V motor control center was assumed to be available at the closest motor control center feeding through the penetrations, the cable impedance from the motor control center to the penetration was considered.
3. Fault value for cables AP7AE - 9021,3,4,5 feeding motor space heaters from power panel PP-7A-E.
4. Maximum momentary fault current available at motor control center control transformer secondaries serving control cables passing through penetrations is assumed to be available at the penetrations themselves.

replace with attached

040.034-2

WNP-2

Table 040.034-1 provides summary data regarding the containment electrical penetrations utilized on WNP-2 and the short circuit analysis performed to verify the adequacy of primary and backup protective devices.

a. I^2T Rating

Table 040.034-1 indicates penetration conductor thermal limit (I^2T) ratings based upon the maximum short circuit current to which conductors were tested. Figures 040.034-1 and 040.034-2 indicate the manufacturer's conductor thermal limit (I^2T) curves for these same conductors. Thermal limit curves have been used in analysis since they allow verification of protective device capability over the entire range of short circuit currents to which the penetration conductors might be subjected.

b. Maximum Predicted Fault Currents

Table 040.034-1 indicates the maximum predicted fault current for each conductor size in each penetration. It should be noted that penetration conductor thermal capability is a function of I^2T. It is possible, therefore, that short circuit currents below the maximum expected could result in excessive thermal heating of conductors due to a significant increase in fault clearing time. Relay protection is particularly subject to this phenomenon; fuse and breaker protection is less sensitive to this effect. The analytical method utilized verifies protective device adequacy over the entire range of fault currents to preclude the possibility of excessive I^2T at low fault current levels.

c. Maximum Faults

Table 040.034-1 indicates maximizing faults. Refer to Item (b) above for a discussion of the limited usefulness of fault current values obtained from consideration of the maximizing fault condition.

d. Protective Equipment Setpoints

Figure 040.034-3 (X-103 series penetrations) and Tables 040.034-2 through 040.034-4 (X-104, 105, 107 series penetrations) indicate the setpoints of the primary and backup protective devices. As indicated in Item (b) above, setpoint values have a limited usefulness. Analysis is designed to verify that conductor I^2T capability is not exceeded at any point along its thermal limit curve for all possible short circuit current levels (and the unique protective device clearing times for each short circuit current level). Consideration of the primary and backup protective device clearing times at all points along the clearing time curves (not just at the setpoint values) is required.

e. Expected Clearing Times

Analysis is based upon verifying that primary and backup protective devices clear the entire range of possible fault currents in sufficient time to avoid exceeding conductor thermal limit data presented on the conductor I^2T curves (Figures 040.034-1 and 040.034-2). This is done by comparing primary and backup protective device I vs. T curves to penetration conductor I vs. T curves. As such, there are no single expected clearing times that lend themselves to tabulation. Figures 040.034-3 through 040.034-10 compare penetration conductor I vs. T thermal capability curves to primary and backup protective device I vs. T clearing time curves.

The analysis presented in Tables 040.034-2 through 040.034-4, and Figures 040.034-1 through 040.034-10 verify for each individual containment penetration conductor that penetration seal integrity failure due to excessive short circuit induced heating does not occur, even for the case where the primary protective device fails to operate and the backup protective device is called upon to clear the fault. The I^2T of the maximum expected fault is, in every case, less than the I^2T rating of the penetration conductor.

TABLE 040.034-1

PRIMARY CONTAINMENT ELECTRICAL PENETRATION SUMMARY (See Note 12)

		Penetration Conductors				Primary and Backup Protective Devices			
Penetration Number	Type	Cable Size	I^2T Rating (Amp^2-Sec)[1]	Maximum Fault (Amps)[2]	Maximizing Fault[3]	Type	Setpoints (Amps)	Clearing Time (Seconds)[8]	I^2T AVAII
X-100 A-D	Neutron Monitor	#18 AWG	N/A	Negligible	–	–	–	–	–
X-100 A-D	Neutron Monitor	#26 AWG	N/A	Negligible	–	–	–	–	–
X-100 A-D	Neutron Monitor	#34 AWG	N/A	Negligible	–	–	–	–	–
X-101 A-D	Control Rod Posit.	#18 AWG	N/A	Negligible	–	–	–	–	–
X-102 A,B	T/C & RTD	#18 AWG	N/A	Negligible	–	–	–	–	–
X-102 A,B	T/C & RTD	#16 AWG	N/A	Negligible	–	–	–	–	–
X-103 A-D[10]	HV (6.9 kV) Pwr.	1000 MCM	2.91×10^9	32,575	Note 4	Figure 040.034-3	Figure 040.034-3	Figure 040.034-3	1.41 x
X-103 A-D	HV (6.9 kV) Pwr.	250 MCM[11]	N/A	–	–	–	–	–	–
X-104 A-D	LV (480 V) Pwr.	#1/0 AWG	3.9×10^7	17,340	Note 5	Table 040.034-2	Table 040.034-2	Table 040.034-2	3.01 x
X-104 A-D	LV (480 V) Pwr.	#4 AWG	1.2×10^7	12,060	Note 5	Table 040.034-2	Table 040.034-2	Table 040.034-2	1.45 x
X-104 A-D	LV (480 V) Pwr.	#10 AWG	8.4×10^5	5,267	Note 5	Table 040.034-2	Table 040.034-2	Table 040.034-2	2.77 x
X-105 A-D	Control & Indic.	#14 AWG	1.2×10^5	356	Note 6	Table 040.034-3	Table 040.034-3	Table 040.034-3	0.51 x
X-106 A-D	Spare Nozzles	--	–	–	–	–	–	–	–
X-107 A,B	LV (480 V) Pwr. Control & Indic.	#10 AWG	8.4×10^5	5,267	Note 5	Table 040.034-4	Table 040.034-4	Table 040.034-4	2.77 x
X-107 A,B	LV (480 V) Pwr. Control & Indic.	#14 AWG	1.2×10^5	62.5	Note 7	Table 040.034-4	Table 040.034-4	Table 040.034-4	2.60 x
X-107 A,B	LV (480 V) Pwr. Control & Indic.	#16 AWG	N/A	Negligible	–	–	–	–	–

TABLE 040.034-1 (Cont'd)

NOTES:

1. Values indicated are manufacturer's stated I^2T values for each conductor. Manufacturer's I^2T curves for each conductor are utilized in detailed analysis (see Figures 040.034-1 and 040.034-2 for individual conductor curves forming the basis of analysis). Instrumentation, thermocouple, RTD, and communication circuits not requiring analysis do not have an I^2T value assigned.

2. Maximum fault levels are provided for information only. Analysis is based on I^2T curves, which account for I^2T levels which could be more severe for lower level faults.

3. Three-phase to ground fault levels (except for #14 conductors which supply single phase circuits only.

4. Maximum momentary fault current available at 6.9 kV switchgear buses serving power cables passing through penetrations is assumed to be available at the penetrations themselves.

5. The maximum fault current at any 480 V motor control center was assumed to be available at the closest motor control center feeding through the penetrations. The cable impedence from the motor control center to the penetration was considered.

6. Fault current for cables AP7AE-9021, 9023, 9024, and 9025 feeding motor space heaters from power panel PP-7A-E.

7. Maximum momentary fault current available at motor control center transformer secondaries serving control cables passing through penetrations is assumed to be available at the penetrations themselves.

8. Clearing times of protective devices are dependent upon the level of fault current flowing.

TABLE 040.034-1 (Cont'd)

NOTES: (Cont'd)

9. I^2T available is dependent upon the level of fault current flowing. The values indicated are based upon flow of maximum available fault current through the largest primary protective device ~~which will protect~~ utilized for that ~~the~~ penetration. ~~conductor~~

10. Penetrations X-103 B and D are not utilized. Data presented is for penetrations X-103 A and C which supply the 6.9 kV reactor recirculation pumps.

11. This conductor is a ground conductor only.

12. Details of Table subject to revision based upon finalization of design.

TABLE 040.034-
PRIMARY CONTAINMENT ELECTRICAL PENETRATION ANALYSIS (See Note 3)
PENETRATIONS X-104 A,B,C,D

PENETRATION			EXTERNAL CABLING		CIRCUIT DATA					PRIMARY O/C DEVICE			BACKUP O/C DEVICE		
PENET IDENT NO	COND DESIG	SIZE	OUTBOARD CABLE DESIG	INBOARD CABLE DESIG	PWR SOURCE	DESTIN-ATION	HP/KW	VOLTS	AMPS	DEVICE	LOCATION	FIGURE	DEVICE	LOCATION	FIGURE
X-104A	217-226	#1/0	None	None	-	-	-	-	-	-	-	-	-	-	-
X-104A	300-302	#4	AH7C-9110	AH7C-9111	MC-7C	RRC-V-67A Pwr.	15.8/-	460VAC	18.1	25AF	MC-7C	040.034-5	50AF	MC-7C	040.034-5
X-104A	303&304	#4	AP7CA-9150	AP7CA-9151	PP-7CA-A	B35-C001A Htr.	-/3.6	120VAC	30	40ACB	PP-7CA-A	040.034-5	90AF	PP-7CA-A	040.034-5
X-104A	305-310	#4	AH7B-9190	AH7B-9191	MC-7B	CRA-FN-2A-2 Pwr.	30/-	460VAC	37.6	50AF	MC-7B	040.034-5	90AF	MC-7B	040.034-5
X-104A	311-325	#4	None	None	None	-	-	-	-	-	-	-	-	-	-
X-104A	1-3	#10	None	None	-	-	-	-	-	-	-	-	-	-	-
X-104A	4-6	#10	AH7C-9170	AH7C-9171	MC-7C	RCC-V-71A Pwr.	.33/-	460VAC	.95	1.25AF	MC-7C	040.034-6	25AF	MC-7C	040.034-6
X-104A	7-9	#10	AH7C-9180	AH7C-9181	MC-7C	RCC-V-72A Pwr.	.33/-	460VAC	.95	1.25AF	MC-7C	040.034-6	25AF	MC-7C	040.034-6
X-104A	10-12	#10	AH7C-9230	AH7C-9231	MC-7C	RCC-V-17A Pwr.	.33/-	460VAC	.95	1.25AF	MC-7C	040.034-6	25AF	MC-7C	040.034-6
X-104A	13-200	#10	None	None	-	-	-	-	-	-	-	-	-	-	-
X-104B	217-222	#1/0													
	&311-316	#4	BH8B-9170	BH8B-9171	MC-8B	CRA-FN-1C-2 Pwr.	50(65)/-	460VAC	65	110AF	MC-8B	Note 1	150AF	MC-8B	Note 1
X-104B	223-225	#1/0	BH8C-9272	BH8C-9273	MC-8C	Recept	-	460VAC	-	60AF	MC-8C	040.034-4	90AF	MC-8C	040.034-4
X-104B	226	#1/0	None	None	-	-	-	-	-	-	-	-	-	-	-
X-104B	300-302	#4	BH8C-9050	BH8C-9051	MC-8C	RRC-V-67B Pwr.	15.8/-	460VAC	18.1	25AF	MC-8C	040.034-5	50AF	MC-8C	040.034-5
X-104B	303-305	#4	BH8C-9090	BH8C-9091	MC-8C	Recept	-	460VAC	-	30AF	MC-8C	040.034-5	50AF	MC-8C	040.034-5
X-104B	306&307	#4	BP8CA-9150	BP8CA-9151	PP-8CA-A	B35-C001B Htr.	-/3.6	120VAC	30	40ACB	PP-8CA-A	040.034-5	90AF	PP-8CA-A	040.034-5
X-104B	308-310	#4	None	None	-	-	-	-	-	-	-	-	-	-	-
X-104B	317-325	#4	None	None	-	-	-	-	-	-	-	-	-	-	-
X-104B	1-3	#10	BH8C-9020	BH8C-9021	MC-8C	RRC-V-23B Pwr.	6.4/-	460VAC	9.4	12AF	MC-8C	040.034-6	25AF	MC-8C	040.034-6
X-104B	4-6	#10	None	None	-	-	-	-	-	-	-	-	-	-	-
X-104B	7-9	#10	BH8C-9060	BH8C-9061	MC-8C	RWCU-V-102 Pwr.	1.6/-	460VAC	4	5AF	MC-8C	040.034-6	25AF	MC-8C	040.034-6
X-104B	10-12	#10	BH8C-9070	BH8C-9071	MC-8C	RWCU-V-106 Pwr.	.7/-	460VAC	2.3	3AF	MC-8C	040.034-6	25AF	MC-8C	040.034-6
X-104B	13-15	#10	BH8C-9110	BH8C-9111	MC-8C	RRC-V-23A Pwr.	.33/-	460VAC	.75	1AF	MC-8C	040.034-6	25AF	MC-8C	040.034-6
X-104B	16-18	#10	BH8C-9230	BH8C-9231	MC-8C	RWCU-V-101 Pwr.	.7/-	460VAC	2.3	3AF	MC-8C	040.034-6	25AF	MC-8C	040.034-6
X-104B	19-21	#10	BH8C-9220	BH8C-9221	MC-8C	RWCU-V-100 Pwr.	.7/-	460VAC	2.3	3AF	MC-8C	040.034-6	25AF	MC-8C	040.034-6
X-104B	22-24	#10	BH8C-9200	BH8C-9201	MC-8C	RCC-V-17B Pwr.	.33/-	460VAC	.95	1.25AF	MC-8C	040.034-6	25AF	MC-8C	040.034-6
X-104B	25-27	#10	BH8C-9180	BH8C-9181	MC-8C	RCC-V-71C Pwr.	.33/-	460VAC	.95	1.25AF	MC-8C	040.034-6	25AF	MC-8C	040.034-6
X-104B	28-30	#10	BH8C-9170	BH8C-9171	MC-8C	RCC-V-71B Pwr.	.33/-	460VAC	.95	1.25AF	MC-8C	040.034-6	25AF	MC-8C	040.034-6
X-104B	31-200	#10	None	None	-	-	-	-	-	-	-	-	-	-	-
X-104C	217-222	#1/0													
	&309-314	#4	AH7B-9070	AH7B-9071	MC-7B	CRA-FN-1A-2 Pwr.	50(65)/-	460VAC	65	110AF	MC-7B	Note 1	150 AF	MC-7B	Note 1
X-104C	223-225	#1/0	AH3DA-9070	AH3DA-9071	MC-3D-A	HT-HOI-18 Pwr.	22/-	460VAC	37.6	50AF	MC-3D-A	040.034-4	200ACB	MC-3D	040.034-4
X-104C	226	#1/0	None	None	-	-	-	-	-	-	-	-	-	-	-
X-104C	300-302	#4													
	&315-317	#4	AH7B-9170	AH7B-9171	MC-7B	CRA-FN-1A-1 Pwr.	30(44)/-	460VAC	37.6	70AF	MC-7B	040.034-5	90AF	MC-7B	040.034-5
X-104C	303-305	#4	None	None	-	-	-	-	-	-	-	-	-	-	-
X-104C	306-308	#4													
	&318-323	#4	AH7B-9210	AH7B-9211	MC-7B	CRA-FN-2A-1 Pwr.	75/-	460VAC	100	110AF	MC-7B	040.034-5	110AF	MC-7B	040.034-5
X-104C	324-325	#4	None	None	-	-	-	-	-	-	-	-	-	-	-

Device Abbreviations for Tables 040.034-2, -3, & -4:
F - Fuse
CB - Circuit Breaker

TABLE 040.034-2

PRIMARY CONTAINMENT ELECTRICAL PENETRATION ANALYSIS

PENETRATIONS X-104 A,B,C,D

PENETRATION			EXTERNAL CABLING		CIRCUIT DATA					PRIMARY O/C DEVICE			BACKUP O/C DEVICE		
PENET IDENT NO	COND DESIG	SIZE	OUTBOARD CABLE DESIG	INBOARD CABLE DESIG	PWR SOURCE	DESTIN-ATION	HP/KW	VOLTS	AMPS	DEVICE	LOCATION	FIGURE	DEVICE	LOCATION	FIGURE
X-104C	1&63	#10	LP-3DA-C	LP-3DA-C	LP-3DA-C	Ltg.	-/1.3	120VAC	10	20ACB	LP-3DA-C	040.034-7	100ACB	LP-3DA-C	040.034-7
X-104C	2&64	#10	LP-3DA-C	LP-3DA-C	LP-3DA-C(Neut.)	-	-	-	-	-	-	-	-	-	-
X-104C	3-5 & 26-28	#10	AH7B-9050	AH7B-9051	MC-7B	CRA-FN-5A Pwr.	10/-	460VAC	17.1	25AF	MC-7B	040.034-6	50AF	MC-7B	040.034-6
X-104C	6-8	#10	AH7B-9060	AH7B-9061	MC-7B	CRA-FN-4A Pwr.	7.5/-	460VAC	9.9	15AF	MC-7B	040.034-7	50AF	MC-7B	040.034-7
X-104C	9-11 & 46-48	#10	AH7B-9200	AH7B-9201	MC-7B	CRA-FN-5C Pwr.	10/-	460VAC	17.1	25AF	MC-7B	040.034-7	50AF	MC-7B	040.034-7
X-104C	12-14 & 60-62	#10	AH7B-9230	AH7B-9231	MC-7B	CRA-FN-3A Pwr.	10/-	460VAC	17.1	25AF	MC-7B	040.034-7	50AF	MC-7B	040.034-7
X-104C	15&65	#10	LP-3DA-C	LP-3DA-C	LP-3DA-C (Ckt. 21)	Ltg.	-/1.3	120VAC	10	20ACB	LP-3DA-C	040.034-7	100ACB	LP-3DA-C	040.034-7
X-104C	16&66	#10	LP-3DA-G	LP-3DA-C	LP-3DA-C (Neut.)	-	-	-	-	-	-	-	-	-	-
X-104C	17&67	#10	LP-3DA-G	LP-3DA-G	LP-3DA-G (Ckt. 22)	Ltg.	-/1.3	120VAC	10	20ACB	LP-3DA-G	040.034-7	100ACB	LP-3DA-G	040.034-7
X-104C	18&68	#10	LP-3DA-G	LP-3DA-G	LP-3DA-G (Neut.)	-	-	-	-	-	-	-	-	-	-
X-104C	19&69	#10	LP-3DA-G	LP-3DA-G	LP-3DA-G (Ckt. 17)	Ltg.	-/1.3	120VAC	10	20ACB	LP-3DA-G	040.034-7	100ACB	LP-3DA-G	040.034-7
X-104C	20&70	#10	LP-3DA-G	LP-3DA-G	LP-3DA-G (Ckt. 19)	Ltg.	-/1.3	120VAC	10	20ACB	LP-3DA-G	040.034-7	100ACB	LP-3DA-G	040.034-7
X-104C	21&71	#10	LP-3DA-G	LP-3DA-G	LP-3DA-G (Ckt. 21)	Ltg.	-/1.3	120VAC	10	20ACB	LP-3DA-G	040.034-7	100ACB	LP-3DA-G	040.034-7
X-104C	22&72	#10	LP-3DA-G	LP-3DA-G	LP-3DA-G (Neut.)	-	-	-	-	-	-	-	-	-	-
X-104C	23&73	#10	LP-3DA-G	LP-3DA-G	LP-3DA-G (Ckt. 18)	Ltg.	-/1.3	120VAC	10	20ACB	LP-3DA-G	040.034-7	100ACB	LP-3DA-G	040.034-7
X-104C	24&74	#10	LP-3DA-G	LP-3DA-G	LP-3DA-G (Ckt. 20)	Ltg.	-/1.3	120VAC	10	20ACB	LP-3DA-G	040.034-7	100ACB	LP-3DA-G	040.034-7
X-104C	25&75	#10	LP-3DA-G	LP-3DA-G	LP-3DA-G (Neut.)	-	-	-	-	-	-	-	-	-	-
X-104C	29-31	#10	AH3DA-9080	AH3DA-9081	MC-3D-A	HT-HOI-19C Pwr.	5.25/-	460VAC	10	20AF	MC-3D-A	040.034-6	50AF	MC-3D-A	040.034-6
X-104C	32&76	#10	LP-3DA-G	LP-3DA-G	LP-3DA-G (Ckt. 8)	Ltg.	-/1.3	120VAC	10	20ACB	LP-3DA-G	040.034-7	100ACB	LP-3DA-G	040.034-7
X-104C	33&77	#10	LP-3DA-G	LP-3DA-G	LP-3DA-G (Ckt. 10)	Ltg.	-/1.3	120VAC	10	20ACB	LP-3DA-G	040.034-7	100ACB	LP-3DA-G	040.034-7
X-104C	34&78	#10	LP-3DA-G	LP-3DA-G	LP-3DA-G (Ckt. 12)	Ltg.	-/1.3	120VAC	10	20ACB	LP-3DA-G	040.034-7	100ACB	LP-3DA-G	040.034-7
X-104C	35&79	#10	LP-3DA-G	LP-3DA-G	LP-3DA-G (Neut.)	-	-	-	-	-	-	-	-	-	-

TABLE 040[illegible] (Cont)

PRIMARY CONTAINMENT ELECTRIC[illegible] PENETRATION ANALYSIS

PENETRATIONS X-104 A,B,C,D

PENETRATION			EXTERNAL CABLING		CIRCUIT DATA					PRIMARY O/C DEVICE			BACKUP O/C DEVICE		
PENET. IDENT NO	COND DESIG	SIZE	OUTBOARD CABLE DESIG	INBOARD CABLE DESIG	PWR SOURCE	DESTIN-ATION	HP/KW	VOLTS	AMPS	DEVICE	LOCATION	FIGURE	DEVICE	LOCATION	FIGURE
X-104C	36&80	#10	LP-3DA-G	LP-3DA-G	LP-3DA-G (Ckt. 11)	Ltg.	-/1.3	120VAC	10	20ACB	LP-3DA-G	040.034-7	100ACB	LP-3DA-G	040.034-7
X-104C	37&81	#10	LP-3DA-G	LP-3DA-G	LP-3DA-G (Ckt. 13)	Ltg.	-/1.3	120VAC	10	20ACB	LP-3DA-G	040.034-7	100ACB	LP-3DA-G	040.034-7
X-104C	38&82	#10	LP-3DA-G	LP-3DA-G	LP-3DA-G (Ckt. 15)	Ltg.	-/1.3	120VAC	10	20ACB	LP-3DA-G	040.034-7	100ACB	LP-3DA-G	040.034-7
X-104C	39&83	#10	LP-3DA-G	LP-3DA-G	LP-3DA-G (Neut.)	-	-	-	-	-	-	-	-	-	-
X-104C	40&84	#10	LP-3DA-G	LP-3DA-G	LP-3DA-G (Ckt. 14)	Ltg.	-/1.3	120VAC	10	20ACB	LP-3DA-G	040.034-7	100ACB	LP-3DA-G	040.034-7
X-104C	41&85	#10	LP-3DA-G	LP-3DA-G	LP-3DA-G (Ckt. 16)	Ltg.	-/1.3	120VAC	10	20ACB	LP-3DA-G	040.034-7	100ACB	LP-3DA-G	040.034-7
X-104C	42&86	#10	LP-3DA-G	LP-3DA-G	LP-3DA-G (Ckt. 24)	Ltg.	-/1.3	120VAC	10	20ACB	LP -3DA-G	040.034-7	100ACB	LP-3DA-G	040.034-7
X-104C	43&87	#10	LP-3DA-G	LP-3DA-G	LP-3DA-G (Neut.)	-	-	-	-	-	-	-	-	-	-
X-104C	44&88	#10	LP-3DA-G	LP-3DA-G	LP-3DA-G (Ckt. 5)	Ltg.	-/1.3	120VAC	10	20ACB	LP-3DA-G	040.034-7	100ACB	LP-3DA-G	040.034-7
X-104C	45&89	#10	LP-3DA-G	LP-3DA-G	LP-3DA-G (Neut.)	-	-	-	-	-	-	-	-	-	-
X-104C	49-51	#10	Note 2	Note 2	-	-	-	-	-	-	-	-	-	-	-
X-104C	52-54	#10	Note 2	Note 2	-	-	-	-	-	-	-	-	-	-	-
X-104C	55-57	#10	Note 2	Note 2	-	-	-	-	-	-	-	-	-	-	-
X-104C	58-59	#10	Note 2	Note 2	-	-	-	-	-	-	-	-	-	-	-
X-104C	90-200	#10	None	None	-	-	-	-	-	-	-	-	-	-	-
X-104D	217-224 &312-317	#1/0 #4	BH8B-9180	BH8B-9181	MC-8B	CRA-FN-1B-2 Pwr.	50(65)/-	460VAC	65	110AF	MC-8B	Note 1	150AF	MC-8B	Note 1
X-104D	223-225 &306-308	#1/0 #4	BH8B-9200	BH8B-9201	MC-8B	CRA-FN-2B-1 Pwr.	75/-	460VAC	100	110AF	MC-8B	Note 1	150AF	MC-8B	Note 1
X-104D	226	#1/0	None	-	-	-	-	-	-	-	-	-	-	-	-
X-104D	300-302 &318-320	#4 #4	BH8B-9070	BM8B-9071	MC-8B	CRA-FN-1B-1 Pwr.	30(44)/-	460VAC	37.6	70AF	MC-8B	040.034-5	90AF	MC-8B	040.034-5
X-104D	303-305 &321-323	#4 #4	BH8B-9190	BH8B-9191	MC-8B	CRA-FN-1C-1 Pwr.	30(44)/-	460VAC	37.6	70AF	MC-8D	040.034-5	90AF	MC-8B	040.034-5
X-104D	309-311	#4	BH8B-9210	BH8B-9211	MC-8B	CRA-FN-2B-2 Pwr.	25/-	460VAC	35	40AF	MC-8B	040.034-5	90AF	MC-8B	040.034-5
X-104D	324 & 325	#4 #4	None	None	-	-	-	-	-	-	-	-	-	-	-
X-104D	1&141	#10	LP-6BA-C	LP-6BA-C	LP-6BA-C (Ckt. 16)	Ltg.	-/1.3	120VAC	10	20ACB	LP-6BA-C	040.034-7	100ACB	LP-6BA-C	040.034-7
X-104D	2&142	#10	LP-6BA-C	LP-6BA-C	LP-6BA-C (Neut.)	-	-	-	-	-	-	-	-	-	-
X-104D	3-5 & 100-102	#10 #10	2H8BA-190	2H8BA-191	MC-8B-A	MS-V-16 Pwr.	.5/-	460VAC	1	1.25AF	MC-8B-A	040.034-7	125ACB	MC-8B	040.034-7

TABLE 040[illegible] (Cont)

PRIMARY CONTAINMENT ELECTRICAL PENETRATION ANALYSIS

PENETRATIONS X-104 A,B,C,D

PENETRATION			EXTERNAL CABLING		CIRCUIT DATA					PRIMARY O/C DEVICE			BACKUP O/C DEVICE		
PENET IDENT NO	COND DESIG	SIZE	OUTBOARD CABLE DESIG	INBOARD CABLE DESIG	PWR SOURCE	DESTINATION	HP/KW	VOLTS	AMPS	DEVICE	LOCATION	FIGURE	DEVICE	LOCATION	FIGURE
X-104D	6-8 & 103-105	#10	2H8BA-250	2H8BA-251	MC-8B-A	RWCU-V-1 Pwr.	1.6/-	460VAC	4	5.6AF	MC-8B-A	040.034-7	125ACB	MC-8B	040.034-7
X-104D	9-11 & 106-108	#10	2H8BA-310	2H8BA-311	MC-8B-A	RHR-V-9 Pwr.	7.9/-	460VAC	10.7	15AF	MC-8B-A	040.034-7	125ACB	MC-8B	040.034-7
X-104D	12-14 & 109-111	#10	2H8BA-360	2H8BA-361	MC-8B-A	RCIC-V-63 Pwr.	7/-	460VAC	10.7	15AF	MC-8B-A	040.034-7	125ACB	MC-8B	040.034-7
X-104D	15&143	#10	LP-6BA-C	LP-6BA-C	LP-6BA-C	Ltg.	-/1.3	120VAC	10	20ACB	LP-6BA-C	040.034-7	100ACB	LP-6BA-C	040.034-7
X-104D	16&144	#10	LP-6BA-C	LP-6BA-C	LP-6BA-C (Neut.)	-	-	-	-	-	-	-	-	-	-
X-104D	17-19 & 117-119	#10	2H8BA-370	2H8BA-371	MC-8B-A	RCC-V-40 Pwr.	.7/-	460VAC	2.3	3.2AF	MC-8B-A	040.034-7	125ACB	MC-8B	040.034-7
X-104D	20-22 & 120-122	#10	2H8BA-430	2H8BA-431	MC-8B-A	RHR-V-123B Pwr.	.33/-	460VAC	.75	1.125AF	MC-8B-A	040.034-7	125ACB	MC-8B	040.034-7
X-104D	23-25& 123-125	#10	2H8BA-440	2H8BA-441	MC-8B-A	RCIC-V-76 Pwr.	2/-	460VAC	2.5	4AF	MC-8B-A	040 034-7	125ACB	MC-8B	040.034-7
X-104D	26-28 & 126-128	#10	BH8B-9080	BH8B-9081	MC-8B	CRA-FN-5B Pwr.	10/-	460VAC	17.1	25AF	MC-8B	040.034-7	50AF	MC-8B	040.034-7
X-104D	29-31 & 129-131	#10	BH8B-9090	BH8B-9091	MC-8B	CRA-FN-5D Pwr.	10/-	460VAC	17.1	25AF	MC-8B	040.034-7	50AF	MC-8B	040.034-7
X-104D	32&145	#10	LP-6BA-G	LP-6BA-G	LP-6BA-G (Ckt. 26)	Ltg.	-/1.3	120VAC	10	20ACB	LP-6BA-G	040.034-7	100ACB	LP-6BA-G	040.034-7
X-104D	33&146	#10	LP-6BA-G	LP-6BA-G	LP-6BA-G (Neut.)	-	-	-	-	-	-	-	-	-	-
X-104D	34-36 & 132-134	#10	BH8B-9220	BH8B-9221	MC-8B	CRA-FN-3B Pwr.	10/-	460VAC	17.1	25AF	MC-8B	040.034-7	50AF	MC-8B	040.034-7
X-104D	37-39 & 135-137	#10	BH8B-9230	BH8B-9231	MC-8B	CRA-FN-3C Pwr.	10/-	460VAC	17.1	25AF	MC-8B	040.034-7	50AF	MC-8B	040.034-7
X-104D	40-42	#10	BH8B-9240	BH8B-9241	MC-8B	CRA-FN-4B Pwr.	7.5/-	460VAC	9.9	15AF	MC-8B	040.034-6	25AF	MC-8B	040.034-6
X-104D	43-45	#10	BH8C-9210	BH8C-9211	MC-8C	RCC-V-72B Pwr.	.33/-	460VAC	.95	1.25AF	MC-8C	040.034-6	25AF	MC-8C	040.034-6
X-104D	46-48	#10	BH8CB-9320	BH8CB-9321	MC-8C	HS-V-1 Pwr.	2/-	460VAC	3	4AF	MC-8C	040.034-6	25AF	MC-8C	040.034-6
X-104D	49-51	#10	BH8CB-9330	BH8CB-9331	MC-8C-B	HS-V-2 Pwr.	2/-	460VAC	3	4AF	MC-8C-B	040.034-6	25AF	MC-8C-B	040.034-6
X-104D	52-54	#10	BH8CB-9340	BH8CB-9341	MC-8C-B	HS-V-5 Pwr.	2/-	460VAC	3	4AF	MC-8C-B	040.034-6	25AF	MC-8C-B	040.034-6
X-104D	55&147	#10	LP-6BA-G	LP-6BA-G	LP-6BA-G (Ckt. 17)	Ltg.	-/1.3	120VAC	10	20ACB	LP-6BA-G	040.034-7	100ACB	LP-6BA-G	040.034-7
X-104D	56&148	#10	LP-6BA-G	LP-6BA-G	LP-6BA-G (Ckt. 19)	Ltg.	-/1.3	120VAC	10	20ACB	LP-6BA-G	040.034-7	100ACB	LP-6BA-G	040.034-7
X-104D	57&149	#10	LP-6BA-G	LP-6BA-G	LP-6BA-G (Ckt. 21)	Ltg.	-/1.3	120VAC	10	20ACB	LP-6BA-G	040.034-7	100ACB	LP-6BA-G	040.034-7
X-104D	58&150	#10	LP-6BA-G	LP-6BA-G	LP-6BA-G (Neut.)	-	-	-	-	-	-	-	-	-	-
X-104D	59&151	#10	LP-6BA-G	LP-6BA-G	LP-6BA-G (Ckt. 22)	Ltg.	-/1.3	120VAC	10	20ACB	LP-6BA-G	040.034-7	100ACB	LP-6BA-G	040.034-7
X-104D	60&152	#10	LP-6BA-G	LP-6BA-G	LP-6BA-G (Ckt. 23)	Ltg.	-/1.3	120VAC	10	20ACB	LP-6BA-G	040.034-7	100ACB	LP-6BA-G	040.034-7

TABLE 040.034-2 (Cont)
PRIMARY CONTAINMENT ELECTRICAL PENETRATION ANALYSIS
PENETRATIONS X-104 A,B,C,D

PENETRATION			EXTERNAL CABLING		CIRCUIT DATA					PRIMARY O/C DEVICE			BACKUP O/C DEVICE		
PENET IDENT NO	COND DESIG	SIZE	OUTBOARD CABLE DESIG	INBOARD CABLE DESIG	PWR SOURCE	DESTINATION	HP/KW	VOLTS	AMPS	DEVICE	LOCATION	FIGURE	DEVICE	LOCATION	FIGURE
X-104D	61&153	#10	LP-6BA-G	LP-6BA-G	LP-6BA-G (Ckt. 25)	Ltg.	-/1.3	120VAC	10	20ACB	LP-6BA-G	040.034-7	100ACB	LP-6BA-G	040.034-7
X-104D	62&154	#10	LP-6BA-G	LP-6BA-G	LP-6BA-G (Neut.)	-	-	-	-	-	-	-	-	-	-
X-104D	63&155	#10	LP-6BA-G	LP-6BA-G	LP-6BA-G (Ckt. 24)	Ltg.	-/1.3	120VAC	10	20ACB	LP-6BA-G	040.034-7	100ACB	LP-6BA-G	040.034-7
X-104D	64&156	#10	LP-6BA-G	LP-6BA-G	LP-6BA-G (Neut.)	-	-	-	-	-	-	-	-	-	-
X-104D	65&157	#10	None	None	-	-	-	-	-	-	-	-	-	-	-
X-104D	66&158	#10	LP-6BA-G	LP-6BA-G	LP-6BA-G (Ckt. 8)	Ltg.	-/1.3	120VAC	10	20ACB	LP-6BA-G	040.034-7	100ACB	LP-6BA-G	040.034-7
X-104D	67&159	#10	LP-6BA-G	LP-6BA-G	LP-6BA-G (Ckt. 10)	Ltg.	-/1.3	120VAC	10	20ACB	LP-6BA-G	040.034-7	100ACB	LP-6BA-G	040.034-7
X-104D	68&160	#10	LP-6BA-G	LP-6BA-G	LP-6BA-G (Ckt. 12)	Ltg.	-/1.3	120VAC	10	20ACB	LP-6BA-G	040.034-7	100ACB	LP-6BA-G	040.034-7
X-104D	69&161	#10	LP-6BA-G	LP-6BA-G	LP-6BA-G (Neut.)	-	-	-	-	-	-	-	-	-	-
X-104D	70&162	#10	LP-6BA-G	LP-6BA-G	LP-6BA-G (Ckt. 9)	Ltg.	-/1.3	120VAC	10	20ACB	LP-6BA-G	040.034-7	100ACB	LP-6BA-G	040.034-7
X-104D	71&163	#10	LP-6BA-G	LP-6BA-G	LP-6BA-G (Ckt. 11)	Ltg.	-/1.3	120VAC	10	20ACB	LP-6BA-G	040.034-7	100ACB	LP-6BA-G	040.034-7
X-104D	72&164	#10	LP-6BA-G	LP-6BA-G	LP-6BA-G (Ckt. 13)	Ltg.	-/1.3	120VAC	10	20ACB	LP-6BA-G	040.034-7	100ACB	LP-6BA-G	040.034-7
X-104D	73&165	#10	LP-6BA-G	LP-6BA-G	LP-6BA-G (Neut.)	-	-	-	-	-	-	-	-	-	-
X-104D	74&166	#10	LP-6BA-G	LP-6BA-G	LP-6BA-G (Ckt. 15)	Ltg.	-/1.3	120VAC	10	20ACB	LP-6BA-G	040.034-7	100ACB	LP-6BA-G	040.034-7
X-104D	75&167	#10	LP-6BA-G	LP-6BA-G	LP-6BA-G (Ckt. 18)	Ltg.	-/1.3	120VAC	10	20ACB	LP-6BA-G	040.034-7	100ACB	LP-6BA-G	040.034-7
X-104D	76&168	#10	LP-6BA-G	LP-6BA-G	LP-6BA-G (Ckt. 20)	Ltg.	-/1.3	120VAC	10	20ACB	LP-6BA-G	040.034-7	100ACB	LP-6BA-G	040.034-7
X-104D	77&169	#10	LP-6BA-G	LP-6BA-G	LP-6BA-G (Neut.)	-	-	-	-	-	-	-	-	-	-
X-104D	78&170	#10	LP-6BA-G	LP-6BA-G	LP-6BA-G (Ckt. 14)	Ltg.	-/1.3	120VAC	10	20ACB	LP-6BA-G	040.034-7	100ACB	LP-6BA-G	040.034-7
X-104D	79&171	#10	LP-6BA-G	LP-6BA-G	LP-6BA-G (Ckt. 16)	Ltg.	-/1.3	120VAC	10	20ACB	LP-6BA-G	040.034-7	100ACB	LP-6BA-G	040.034-7
X-104D	80&172	#10	LP-6BA-G	LP-6BA-G	LP-6BA-G (Neut.)	-	-	-	-	-	-	-	-	-	-
X-104D	81 & 82	#10	None	None	-	-	-	-	-	-	-	-	-	-	-
X-104D	83-85	#10	BH8B-9481	BH8B-9485	MC-8B	Dampers	Neg.	460VAC	Neg.	5AP	TB-R417	040.034-6	20AP	MC-8B	040.034-6
X-104D	86-88	#10	BH8B-9482	BH8B-9486	MC-8B	Dampers	Neg.	460VAC	Neg.	5AP	TB-R417	040.034-6	20AP	MC-8B	040.034-6
X-104D	89-91	#10	BH8B-9483	BH8B-9487	MC-8B	Dampers	Neg.	460VAC	Neg.	5AP	TB-R417	040.034-6	20AP	MC-8B	040.034-6
X-104D	92-94	#10	BH8B-9484	BH8B-9488	MC-8B	Dampers	Neg.	460VAC	Neg.	5AP	TB-R417	040.034-6	20AP	MC-8B	040.036-6
X-104D	95-97	#10	Note 2	Note 2	-	-	-	-	-	-	-	-	-	-	-
X-104D	98&99	#10	Note 2	Note 2	-	-	-	-	-	-	-	-	-	-	-

TABLE 040 (Cont)

PRIMARY CONTAINMENT ELECTRICAL PENETRATION ANALYSIS

PENETRATIONS X-104 A,B,C,D

PENETRATION		EXTERNAL CABLING		CIRCUIT DATA					PRIMARY O/C DEVICE			BACKUP O/C DEVICE		
PENET IDENT NO	COND DESIG SIZE	OUTBOARD CABLE DESIG	INBOARD CABLE DESIG	PWR SOURCE	DESTIN-ATION	HP/KW	VOLTS	AMPS	DEVICE	LOCATION	FIGURE	DEVICE	LOCATION	FIGURE
X-104D	112&113 #10	None	None	-	-	-	-	-	-	-	-	-	-	-
X-104D	114-116 #10 &138-140 #10	2H8BA-500	2H8BA-501	MC-8B-A	RHR-V-123A Pwr.	.9/-	460VAC	1.2	2.25AF	MC-8B-A	040.034-1	125ACB	MC-8B	040.034-1
X-104D	173-200 #10	None	None	-	-	-	-	-	-	-	-	-	-	-

is 80A is 45A

NOTES: 1. Fans CRA-FN-1C-2, CRA-FN-1A-2, CRA-FN-2B-1, CRA-FN-1B-2 each utilize 1-#1/0 and 1-#4 conductors per phase through the electrical penetrations to provide sufficient phase conductor capacity for motor inrush. Phase current capacity for the #1/0 and #4 ~~combination (80A + 45A = 125A)~~ and is sized adequately for use with the 110A overcurrent protection (continuous current basis). The I^2t experienced by each penetration conductor is within its capability when the proportional amount of short circuit current carried by each of the conductors is considered.

2. These conductors are presently utilized for supply of CRA-AD-1A-1, CRA-AD-1A-2, CRA-AD-2A (motor), CRA-AD-2A (valve), CRA-AD-2B (motor) and CRA-AD-2 B (valve). This equipment will be spared under PCN #7166. Inboard and outboard conductors will be disconnected and penetration conductors will become "spares".

3. Details of Table are subject to revision based upon finalization of design.

TABLE 040.034-3
PRIMARY CONTAINMENT ELECTRICAL [illegible]RATION ANALYSIS (See Note 11)
PENETRATIONS X-[illegible]C,D

PENETRATION			EXTERNAL CABLING		CIRCUIT DATA					PRIMARY O/C DEVICE			BACKUP O/C DEVICE		
PENET IDENT NO	COND DESIG	SIZE	OUTBOARD CABLE DESIG	INBOARD CABLE DESIG	PWR SOURCE	DESTIN-ATION	HP/KW	VOLTS	AMPS	DEVICE	LOCATION	FIGURE	DEVICE	LOCATION	FIGURE
X-105A	1-7	#14	None	None	-	-	-	-	-	-	-	-	-	-	-
X-105A	8&9	#14	AAHH-9743	AAHH-9742	Board H	RCC-V-40 Status	-	125VDC	Neg.	Note 3	-	-	Note 3	-	-
X-105A	10,11, 47&472	#14	4RPS-3	4RPS-4	Board P609	B22-F028A/22A Intl'k	-	120VAC	Neg.	5AF	Board P609	040.034-9	Note 4	-	040.034-9
X-105A	12,13, 473&474	#14	4RPS-6	4RPS-7	Board P609	B22-F028B/22B Intl'k	-	120VAC	Neg.	5AF	Board P609	040.034-9	Note 4	-	040.034-9
X-105A	14-20	#14	None	None	-	-	-	-	-	-	-	-	-	-	-
X-105A	21,22, 475&476	#14	6RPS-6	6RPS-7	Board P611	B22-F028C/22C Intl'k	-	120VAC	Neg.	5AF	Board P611	040.034-9	Note 4	-	040.034-9
X-105A	23,24, 477&478	#14	6RPS-3	6RPS-4	Board P611	B22-F028A/22A Intl'k	-	120VAC	Neg.	5AF	Board P611	040.034-9	Note 4	-	040.034-9
X-105A	25	#14	Note 1	Note 1	-	-	-	-	-	-	-	-	-	-	-
X-105A	26	#14	None	None	-	-	-	-	-	-	-	-	-	-	-
X-105A	100,101, 479&480	#14	1LDS-30	1LDS-6	Board P632	E31-F005F Sol Pwr	-	120VAC	-	10AF	Board P632	040.034-9	Note 4	-	040.034-9
X-105A	102,103, 481&482	#14	1LDS-30	1LDS-7	Board P632	E31-F005G Sol Pwr	-	120VAC	-	10AF	Board P632	040.034-9	Note 4	-	040.034-9
X-105A	104,105, 483&484	#14	1LDS-30	1LDS-8	Board P632	E31-F005H Sol Pwr	-	120VAC	-	10AF	Board P632	040.034-9	Note 4	-	040.034-9
X-105A	106-109	#14	None	None	-	-	-	-	-	-	-	-	-	-	-
X-105A	110,111, 485&486	#14	1LDS-30	1LDS-11	Board P632	E31-F005L Sol Pwr	-	120VAC	-	10AF	Board P632	040.034-9	Note 4	-	040.034-9
X-105A	112,113, 487&488	#14	1LDS-30	1LDS-12	Board P632	E31-F005M Sol Pwr	-	120VAC	-	10AF	Board P632	040.034-9	Note 4	-	040.034-9
X-105A	114,115, 489&490	#14	1LDS-30	1LDS-13	Board P632	E31-F005N Sol Pwr	-	120VAC	-	10AF	Board P632	040.034-9	Note 4	-	040.034-9
X-105A	116-118& 491-493	#14	1RHR-34	1RHR-35	Board P601	E12-F112A Indic.	-	120VAC	Neg.	10AF	Board P601	040.034-9	Note 4	-	040.034-9
X-105A	119	#14	ARR-9021	ARR-9025	Cable Shield	-	-		-		-	-		-	-
X-105A	120-126	#14	ARR-9021	ARR-9025	HPU-B35-D003A	B35-N026A LVDT	-	-	-	Note 5	-	-	Note 5	-	-
X-105A	127&128	#14	None	None	-	-	-	-	-	-	-	-	-	-	-
X-105A	129,130, 494&495	#14	1LDS-29	1LDS-1	Board P632	E31-F005A Sol Pwr	-	120VAC	-	10AF	Board P632	040.034-9	Note 4	-	040.034-9
X-105A	131,132, 496&497	#14	1LDS-29	1LDS-2	Board P632	E31-F005B Sol Pwr	-	120VAC	-	10AF	Board P632	040.034-9	Note 4	-	040.034-9
X-105A	133,134, 498&499	#14	1LDS-29	1LDS-3	Board P632	E31-F005C Sol Pwr	-	120VAC	-	10AF	Board P632	040.034-9	Note 4	-	040.034-9
X-105A	135,136, 500&501	#14	1LDS-29	1LDS-4	Board P632	E31-F005D Sol Pwr	-	120VAC	-	10AF	Board P632	040.034-9	Note 4	-	040.034-9
X-105A	137,138, 502&503	#14	1LDS-29	1LDS-5	Board P632	E31-F005E Sol Pwr	-	120VAC	-	10AF	Board P632	040.034-9	Note 4	-	040.034-9
X-105A	139-143	#14	ARR-9233	ARR-9234	Pnl B35-P001A	B35-F023A/60A/67A	-	125VDC	Neg.	5AF	Pnl B35-P001A	040.034-8	15AF	Pnl B35-P001A	040.034-8
X-105A	144&145	#14	None	None	-	-	-	-	-	-	-	-	-	-	-
X-105A	146-149	#14	ASH5-9352	ASH5-9351	B35-C001A	Swgr. SH-5, Bkr RRA	-	-	-	Note 6	-	-	Note 6	-	-
X-105A	150	#14	None	ASH5-9351	-	-	-	-	-	-	-	-	-	-	-
X-105A	151&152	#14	ARR-9020	ARR-9024	PnlB35-P001A	RRC-V-60A (B35-N027A)	-	125VDC	Neg.	5AF	Pnl B35-P001A	040.034-8	15AF	-	040.034-8
X-105A	153-161	#14	AH7C-9172	AH7C-9173	MC-7C	RCC-V-71A Ctrl.	-	120VAC	Neg.	3AF	MC-7C	040.034-10	1.25AF (460V)	MC-7C	040.034-10
X-105A	162-170	#14	AH7C-9182	AH7C-9183	MC-7C	RCC-V-72A Ctrl.	-	120VAC	Neg.	3AF	MC-7C	040.034-10	1.25AF (460V)	MC-7C	040.034-10
X-105A	171	#14	ARR-9048	ARR-9052	Cable Shield	-	-	-	-	-	-	-	-	-	-

TABLE 040.034-[illegible]
PRIMARY CONTAINMENT ELECTRICA[illegible]CATION ANALYSIS
PENETRATIONS X-[illegible]C,D

PENETRATION			EXTERNAL CABLING		CIRCUIT DATA					PRIMARY O/C DEVICE			BACKUP O/C DEVICE		
PENET IDENT NO	COND DESIG	SIZE	OUTBOARD CABLE DESIG	INBOARD CABLE DESIG	PWR SOURCE	DESTINATION	HP/KW	VOLTS	AMPS	DEVICE	LOCATION	FIGURE	DEVICE	LOCATION	FIGURE
X-105A	172-178	#14	ARR-9048	ARR-9052	IPU B35-D003B	B35-N026B LVDT	-	-	-	Note 5	-	-	Note 5	-	-
X-105A	179-187	#14	AH7C-9232	AH7C-9233	MC-7C	RCC-V-17A Ctrl.	-	120VAC	Neg.	3AF	MC-7C	040.034-10	1.25AF (460V)	MC-7C	040.034-10
X-105A	188-194	#14	ARR-9217	ASH5-9341	SH-9 Bkr RPT 3A	B35-F023A/67A/79A/Vib. Sw	-	125VDC	-	5AF	Bkr RPT 3A.	040.034-8	6AF	Bkr RPT 3A	040.034-8
X-105A	195&196	#14	None	ASH5-9341	-	-	-	-	-	-	-	-	-	-	-
X-105A	197	#14	ARR-9053	ARR-9054	Cable Shield	-	-	-	-	-	-	-	-	-	-
X-105A	198-204	#14	ARR-9053	ARR-9054	IPU B35-D003A	B35-F060A LVT	-	-	-	Note 5	-	-	Note 5	-	-
X-105A	205-334	#14	None	None	-	-	-	-	-	-	-	-	-	-	-
X-105A	400,401, 504&505	#14	1LDS-31	1LDS-14	Board P632	E31-F005P Sol Pwr	-	120VAC	-	10AF	Board P632	040.034-9	Note 4	-	040.034-9
X-105A	402,403, 506&507	#14	1LDS-31	1LDS-15	Board P632	E31-F005R Sol Pwr	-	120VAC	-	10AF	Board P632	040.034-9	Note 4	-	040.034-9
X-105A	404,405, 508&509	#14	1LDS-31	1LDS-16	Board P632	E31-F005S Sol Pwr,	-	120VAC	-	10AF	Board P632	040.034-9	Note 4	-	040.034-9
X-105A	406,407, 510&511	#14	1LDS-31	1LDS-17	Board P632	E31-F005T Sol Pwr	-	120VAC	-	10AF	Board P632	040.034-9	Note 4	-	040.034-9
X-105A	408,409, 512&513	#14	1LDS-31	1LDS-18	Board P632	E31-F005V Sol Pwr	-	120VAC	-	10AF	Board P632	040.034-9	Note 4	-	040.034-9
X-105A	410,411, 514&515	#14	1LDS-31	1LDS-19	Board P632	E31-F005W Sol Pwr	-	120VAC	-	10AF	Board P632	040.034-9	Note 4	-	040.034-9
X-105A	412,413, 516&517	#14	1LDS-31	1LDS-20	Board P632	E31-F005X Sol Pwr	-	120VAC	-	10AF	Board P632	040.034-9	Note 4	-	040.034-9
X-105A	414,415, 518&519	#14	1LDS-31	1LDS-21	Board P632	E31-F005Y Sol Pwr	-	120VAC	-	10AF	Board P632	040.034-9	Note 4	-	040.034-9
X-105A	416-418 &534-537	#14	1RHR-32	1RHR-33	Board P601	E12-F111A Indic.	-	120VAC	Neg.	10AF	Board P601	040.034-9	Note 4	-	040.034-9
X-105A	419	#14	ARR-9055	ARR-9056	Cable Shield	-	-	-	-	-	-	-	-	-	-
X-105A	420-426	#14	ARR-9055	ARR-9056	IPU B35-D003B	B35-F060B LVT	-	-	-	Note 5	-	-	Note 5	-	-
X-105A	427,428, 520&521	#14	1LDS-32	1LDS-22	Board P632	E31-F005Z Sol Pwr	-	120VAC	-	10AF	Board P632	040.034-9	Note 4	-	040.034-9
X-105A	429,430, 522&523	#14	1LDS-32	1LDS-23	Board P632	E31-F005AA Sol Pwr	-	120VAC	-	10AF	Board P632	040.034-9	Note 4	-	040.034-9
X-105A	431,432, 524&525	#14	1LDS-32	1LDS-24	Board P632	E31-F005BB Sol Pwr	-	120VAC	-	10AF	Board P632	040.034-9	Note 4	-	040.034-9
X-105A	433,434, 526&527	#14	1LDS-32	1LDS-25	Board P632	E31-F005CC Sol Pwr	-	120VAC	-	10AF	Board P632	040.034-9	Note 4	-	040.034-9
X-105A	435,436, 528&529	#14	1LDS-32	1LDS-26	Board P632	E31-F005DD Sol Pwr	-	120VAC	-	10AF	Board P632	040.034-9	Note 4	-	040.034-9
X-105A	437,438, 530&531	#14	1LDS-32	1LDS-27	Board P632	E31-F005EE Sol Pwr	-	120VAC	-	10AF	Board P632	040.034-9	Note 4	-	040.034-9
X-105A	439,440, 532&533	#14	1LDS-32	1LDS-28	Board P632	E31-F005FF Sol Pwr	-	120VAC	-	10AF	Board P632	040.034-9	Note 4	-	040.034-9
X-105A	441-447	#14	None	None	-	-	-	-	-	-	-	-	-	-	-
X-105A	448-450 &534-536	#14	1RHR-18	1RHR-19	Board P601	E12-F030A Indic.	-	120VAC	Neg.	10AF	Board P601	040.034-9	Note 4	-	040.034-9
X-105A	451&452	#14	None	None	-	-	-	-	-	-	-	-	-	-	-
X-105A	453-461	#14	AH7C-9112	AH7C-9113	MC-7C	RRC-V-67A Ctrl.	-	120VAC	Neg.	3AF	MC-7C	040.034-10	3AF (120V)	MC-7C	040.034-10
X-105A	462&463	#14	ARR-9047	ARR-9051	Pnl B35-P001B	RRC-V-60B (B35-H027B)	-	125VDC	Neg.	5AF	Pnl B35-P001B	040.034-8	15AF	Pnl B35-P001B	040.034-8
X-105A	464-465 &537-539	#14	1RHR-16	1RHR-17	Board P601	E12-F041A Indic.	-	120VAC	Neg.	10AF	Board P601	040.034-9	Note 4	-	040.034-9

TABLE 040.034-3
PRIMARY CONTAINMENT ELECTRICAL P[illegible]ION ANALYSIS
PENETRATIONS X-105[illegible]D

PENETRATION			EXTERNAL CABLING		CIRCUIT DATA					PRIMARY O/C DEVICE			BACKUP O/C DEVICE		
PENET IDENT NO	COND DESIG	SIZE	OUTBOARD CABLE DESIG	INBOARD CABLE DESIG	PWR SOURCE	DESTINATION	HP/KW	VOLTS	AMPS	DEVICE	LOCATION	FIGURE	DEVICE	LOCATION	FIGURE
X-105A	467-469 &540-542	#14	ARR-9208	ARR-9209	Bkr LF2A	B35-F023A/67A	-	125VDC	-	40AF	Bkr LF2A	040.034-9	30AF	Bkr LF2A	040.034-9
X-105A	543-634	#14	None	None	-	-	-	-	-	-	-	-	-	-	-
X-105B	1-9	#14	None	None	-	-	-	-	-	-	-	-	-	-	-
X-105B	10,11, 560&561	#14	5RPS-3	5RPS-4	Board P609	B22-F028C	-	120VAC	Neg.	5AF	Board P609	040.034-9	Note 4	-	040.034-9
X-105B	12,13, 562&563	#14	5RPS-6	5RPS-7	Board P609	B22-F028D	-	120VAC	Neg.	5AF	Board P609	040.034-9	Note 4	-	040.034-9
X-105B	14-22	#14	None	None	-	-	-	-	-	-	-	-	-	-	-
X-105B	23,24, 564&565	#14	7RPS-3	7RPS-4	Board P611	B22-F028B	-	120VAC	Neg.	5AF	Board P611	040.034-9	Note 4	-	040.034-9
X-105B	25,26, 566&567	#14	7RPS-6	7RPS-7	Board P611	B22-F028D	-	120VAC	Neg.	5AF	Board P611	040.034-9	Note 4	-	040.034-9
X-105B	100-126	#14	BTIP-9032	BTIP-9033	C51-J001A	C51-J002A	-	-	-	Note 7	-	-	Note 7	-	-
X-105B	127	#14	BTIP-9032	BTIP-9033	Cable Shield	-	-	-	-	-	-	-	-	-	-
X-105B	128-133	#14	2NS4-8	2NS4-16	Board P622	B22-F022D	-	120VAC	Neg.	5AF	Board P622	040.034-8	5AF	Board P622	040.034-8
X-105B	134-139	#14	2NS4-8	2NS4-15	Board P622	B22-F022D	-	120VAC	Neg.	5AF	Board P622	040.034-8	5AF	Board P622	040.034-8
X-105B	140-146	#14	BMSC-9022	BMSC-9023	HC-8C	RRC-V-23B Ctrl.	-	120VAC	Neg.	3AF	HC-8C	040.034-10	3AF (120V)	HC-8C	040.034-10
X-105B	147-149 &580-582	#14 #14	2RHR-69	2RHR-70	Board P601	E12-F112B	-	120VAC	Neg.	10AF	Board P601	040.034-9	Note 4	-	040.034-9
X-105B	150-152 &583-585	#14	2RHR-71	2RHR-72	Board P601	E12-F111B	-	120VAC	Neg.	10AF	Board P601	040.034-9	Note 4	-	040.034-9
X-105B	153-158	#14	2NS4-10	2NS4-18	Board P622	B22-F022C	-	120VAC	Neg.	5AF	Board P622	040.034-8	5AF	Board P622	040.034-8
X-105B	159-164	#14	2NS4-10	2NS4-17	Board P622	B22-F022C	-	120VAC	Neg.	5AF	Board P622	040.034-8	5AF	Board P622	040.034-8
X-105B	165-169	#14	BRR-9233	BRR-9234	Pnl B35-P001B	B35-F023B/60B/67B	-	125VDC	Neg.	5AF	Pnl B35-P001B	040.034-8	15AF	Pnl B35-P001B	040.034-8
X-105B	170&171	#14	None	None	-	-	-	-	-	-	-	-	-	-	-
X-105B	172-176 &597-601	#14	2NS4-12	2NS4-14	Board P622	B35-F019	-	120VAC	Neg.	5AF	Board P622	040.034-9	Note 4	-	040.034-9
X-105B	177&178	#14	BLDS-9005	BLDS-9006	Board P601	E31-N034	-	125VDC	Neg.	Note 3	-	-	Note 3	-	-
X-105B	179-185	#14	BMSC-9052	BMSC-9053	HC-8C	RRC-V-67B Ctrl.	-	120VAC	Neg.	3AF	HC-8C	040.034-10	3AF (120V)	HC-8C	040.034-10
X-105B	186-194	#14	BMSC-9212	BMSC-9213	HC-8C	RCC-V-72B Ctrl.	-	120VAC	Neg.	3AF	HC-8C	040.034-10	1.25AF (460V)	HC-8C	040.034-10
X-105B	195-197	#14	BMSC-9084	BMSC-9085	HC-8C	RWCU-P-1B Ctrl.	-	120VAC	Neg.	3AF	HC-8C	040.034-10	3AF (120V)	HC-8C	040.034-10
X-105B	198-204	#14	BMSC-9062	BMSC-9063	HC-8C	RWCU-V-102 Ctrl.	-	120VAC	Neg.	3AF	HC-8C	040.034-10	5AF (460V)	HC-8C	040.034-10
X-105B	205-230 &256	#14	BTIP-9034	BTIP-9035	C51-J001B	C51-J002B	-	-	-	Note 7	-	-	Note 7	-	-
X-105B	231	#14	BTIP-9034	BTIP-9035	Cable Shield	-	-	-	-	-	-	-	-	-	-
X-105B	232-237	#14	2NS4-9	2NS4-20	Board P622	B22-F022B	-	120VAC	-	5AF	Board P622	040.034-8	5AF	Board P622	040.034-8
X-105B	238-243	#14	2NS4-9	2NS4-19	Board P622	B22-F022D	-	120VAC	-	5AF	Board P622	040.034-8	5AF	Board P622	040.034-8
X-105B	244-252	#14	BMSC-9172	BMSC-9173	HC-8C	RCC-V-71B Ctrl.	-	120VAC	Neg.	3AF	HC-8C	040.034-10	1.25AF (460V)	HC-8C	040.034-10
X-105B	253-255	#14	BMSC-9244	BMSC-9245	HC-8C	RWCU-P-1A Ctrl.	-	120VAC	Neg.	3AF	HC-8C	040.034-10	3AF (120V)	HC-8C	040.034-10
X-105B	257-263	#14	BMSC-9072	BMSC-9073	HC-8C	RWCU-V-106 Ctrl.	-	120VAC	Neg.	3AF	HC-8C	040.034-10	3AF (460V)	HC-8C	040.034-10
X-105B	264-272	#14	BMSC-9182	BMSC-9183	HC-8C	RCC-V-71C Ctrl.	-	120VAC	Neg.	3AF	HC-8C	040.034-10	1.25AF (460V)	HC-8C	040.034-10
[illegible]	[illegible]	#14	2RHR-28	2RHR-29	Board P601	E12-F041C	-	120VAC	Neg.	10AF	Board P601	040.034-9	Note 4	-	040.034-9

IT NO	LEADS	SIZE	CABLE DESIG	CABLE DESIG	PWR SOURCE	LOCATION	HP/KW	VOLTS	AMPS	DEVICE	LOCATION	FIGURE	DEVICE	LOCATION	FIGURE
X-1058	276-282	#14	BHGC-9222	BHGC-9223	HC-8C	RWCU-V-100 Ctrl.	-	120VAC	Neg.	3AF	HC-8C	040.034-10	3AF (460V)	HC-8C	040.034-10
X-1058	283-289	#14	BHGC-9112	BHGC-9113	HC-8C	RRC-V-23A Ctrl.	-	120VAC	Neg.	3AF	HC-8C	040.034-10	1AF (460V)	HC-8C	040.034-10
X-1058	290-298	#14	BHGC-9202	BHGC-9203	HC-8C	RCC-V-17B Ctrl.	-	120VAC	Neg.	3AF	HC-8C	040.034-10	1.25AF (460V)	HC-8C	040.034-10
X-1058	299-301 & 620-622	#14	2RHR-67	2RHR-68	Board P601	E12-F111C	-	120V	Neg.	10AF	Board P601	040.034-9	Note 4	-	040.034-9
X-1058	302-308	#14	BHGC-9232	BHGC-9233	HC-8C	RWCU-V-101 Ctrl.	-	120VAC	Neg.	3AF	HC-8C	040.034-10	3AF (460V)	HC-8C	040.034-10
X-1058	309-314	#14	2NS4-11	2NS4-22	Board P622	B22-F022A	-	120VAC	-	5AF	Board P622	040.034-8	5AF	Board P622	040.034-8
X-1058	315-320	#14	2NS4-11	2NS4-21	Board P622	B22-F022A	-	120VAC	-	5AF	Board P622	040.034-8	5AF	Board P622	040.034-8
X-1058	321-329	#14	BRR-9001	BRR-9007	Board P602	B35-C001B	-	125VDC	Neg.	Note 3	-	-	Note 3	-	-
X-1058	330-333	#14	BSH5-9352	BSH6-9351	-	B35-C001B	-	-	-	Note 6	-	-	Note 6	-	-
X-1058	334	#14	None	BSH6-9351	-	-	-	-	-	-	-	-	-	-	-
X-1058	400-426	#14	BTIP-9036	BTIP-9037	C51-J001C	C51-J002C,	-	-	-	Note 7	-	-	Note 7	-	-
X-1058	427	#14	BTIP-9036	BTIP-9037	Cable Shield	-	-	-	-	-	-	-	-	-	-
X-1058	428-434	#14	BRR-9217	BSH6-9341	Bkr. RPT 3B	B35-F023B/67B/79B/Vlb.Sw.	-	125VDC	Neg.	5AF	RPT 3B	040.034-8	6AF	Bkr. RPT 3B	040.034-8
X-1058	435-436	#14	None	BSH6-9341	-	-	-	-	-	-	-	-	-	-	-
X-1058	437,438, 568 & 569	#14	2ADS-33	2ADS-26	Board P631	ADS Vlvs-Sol. B	-	125VDC	-	10AF	Board P631	040.034-9	Note 4	-	040.034-9
X-1058	439,440, 570 & 571	#14	2ADS-33	2ADS-27	Board P631	ADS Vlvs.-Sol. B	-	125VDC	-	10AF	Board P631	040.034-9	Note 4	-	040.034-9
X-1058	441,442, 572&573	#14	2ADS-33	2ADS-28	Board P631	ADS Vlvs.- Sol.B	-	125VDC	-	10AF	Board P631	040.034-9	Note 4	-	040.034-9
X-1058	443,444, 574&575	#14	2ADS-33	2ADS-25	Board P631	ADS Vlvs.- Sol.B	-	125VDC	-	10AF	Board P631	040.034-9	Note 4	-	040.034-9
X-1058	445-451	#14	2HBBA-432	2HBBA-433	HC-88-A	RHR-V-123B Ctrl.	-	120VAC	Neg.	3AF	HC-88-A	040.034-10	1.125AF (460V)	HC-88-A	040.034-10
X-1058	452-478	#14	BTIP-9038	BTIP-9039	C51-J001D	C51-J002D	-	-	-	Note 7	-	-	Note 7	-	-
X-1058	479	#14	BTIP-9038	BTIP-9039	Cable Shield	-	-	-	-	-	-	-	-	-	-
X-1058	480-488	#14	BRR-9002	BRR-9008	Board P602	B35-C001A	-	125VDC	-	Note 3	-	-	Note 3	-	-
X-1058	489-491 & 576-578	#14	BRR-9208	BRR-9209	Bkr LF2B	B35-F023B/67B	-	125VDC	-	10AF	Bkr LF2B	040.034-9	30AF	Bkr LF2B	040.034-9
X-1058	492-498	#14	2HBBA-503	2HBBA-504	HC-88-A	RHR-V-123A Ctrl.	-	120VAC	Neg.	3AF	HC-88-A	040.034-10	4AF. (460V)	HC-88-A	040.034-10
X-1058	499,500, 586&587	#14	2ADS-32	2ADS-29	Board P631.	ADS Vlvs.- Sol.B	-	125VDC	-	10AF	Board P631	040.034-9	Note 4	-	040.034-9
X-1058	501,502, 588&589	#14	2ADS-32	2ADS-30	Board P631	ADS Vlvs.- Sol.B	-	125VDC	-	10AF	Board P631	040.034-9	Note 4	-	040.034-9
X-1058	503,504, 590&591	#14	2ADS-32	2ADS-31	Board P631	ADS Vlvs.- Sol.B	-	125VDC	-	10AF	Board P631	040.034-9	Note 4	-	040.034-9
X-1058	505-516, 518-530, 555&556	#14	BTIP-9040	BTIP-9041	C51-J001E	C51-J002E	-	-	-	Note 7	-	-	Note 7	-	-
X-1058	531	#14	BTIP-9040	BTIP-9041	Cable Shield	-	-	-	-	-	-	-	-	-	-
X-1058	517	#14	Note 1	Note 1	-	-	-	-	-	-	-	-	-	-	-
X-1058	532&533	#14	BRR-9003	BRR-9009	Board P602	B35-H002B	-	125VDC	-	Note 3	-	-	Note 3	-	-
X-1058	534&535	#14	BRR-9003	BRR-9010	Board P602	B35-H004B	-	125VDC	-	Note 3	-	-	Note 3	-	-
X-1058	536&537	#14	BRR-9003	BRR-9011	Board P602	B35-H007B	-	125VDC	-	Note 3	-	-	Note 3	-	-
X-1058	538&539	#14	BRR-9003	BRR-9012	Board P602	B35-H008B	-	125VDC	-	Note 3	-	-	Note 3	-	-
X-1058	540&541	#14	BRR-9004	BRR-9013	Board P602	B35-C001A	-	125VDC	-	Note 3	-	-	Note 3	-	-
X-1058	542&543	#14	BRR-9004	BRR-9014	Board P602	B35-C001A	-	125VDC	-	Note 3	-	-	Note 3	-	-

TABLE 040.03[illegible]

PRIMARY CONTAINMENT ELECTRIC[illegible]TRATION ANALYSIS

PENETRATIONS X-[illegible]B,C,D

PENETRATION			EXTERNAL CABLING		CIRCUIT DATA					PRIMARY O/C DEVICE			BACKUP O/C DEVICE		
PENET IDENT NO	COND DESIG	SIZE	OUTBOARD CABLE DESIG	INBOARD CABLE DESIG	PWR SOURCE	DESTINATION	HP/KW	VOLTS	AMPS	DEVICE	LOCATION	FIGURE	DEVICE	LOCATION	FIGURE
X-105B	546&547	#14	BRR-9004	BRR-9016	Board P602	B35-C001A	-	125VDC	-	Note 3	-	-	Note 3	-	-
X-105B	548-550 &592-594	#14	2RHR-53	2RHR-54	Board P601	E12-F050B	-	120VAC	-	10AF	Board P601	040.034-9	Note 4	-	040.034-9
X-105B	551&552	#14	None	None	-	-	-	-	-	-	-	-	-	-	-
X-105B	553,554, 595&596	#14	2RHR-47	2RHR-19	Board P618	E12-C002B	-	125VDC	-	10AF	Board P618	040.034-9	Note 4	-	040.034-9
X-105B	557-559 &608-610	#14	2RHR-56	2RHR-57	Board P601	E12-F041B	-	120VAC	-	10AF	Board P601	040.034-9	Note 4	-	040.034-9
X-105B	579,585, 605&606	#14	None	None	-	-	-	-	-	-	-	-	-	-	-
X-105B	607	#14	Note 1	Note 1	-	-	-	-	-	-	-	-	-	-	-
X-105B	611-619 &623-634	#14	None	None	-	-	-	-	-	-	-	-	-	-	-
X-105C	1-26	#14	None	None	-	-	-	-	-	-	-	-	-	-	-
X-105C	100-109	#14	None	None	-	-	-	-	-	-	-	-	-	-	-
X-105C	110&111	#14	ACACS-9178	ACACS-9182	Note 8	-	-	-	-	-	-	-	-	-	-
X-105C	112-118	#14	ACHB-9011	ACHB-9012	Note 8	-	-	-	-	-	-	-	-	-	-
X-105C	119,120, 225&226	#14	1ADS-33	1ADS-9	Board P628	ADS Vlvs.- Sol.C	-	125VDC	-	10AF	Board P628	040.034-9	Note 4	-	040.034-9
X-105C	121,122, 227&228	#14	1ADS-33	1ADS-10	Board P628	ADS Vlvs.- Sol.C	-	125VDC	-	10AF	Board P628	040.034-9	Note 4	-	040.034-9
X-105C	123,124, 229&230	#14	1ADS-33	1ADS-11	Board P628	ADS Vlvs.- Sol.C	-	125VDC	-	10AF	Board P628	040.034-9	Note 4	-	040.034-9
X-105C	125,126, 231&232	#14	1ADS-33	1ADS-12	Board P628	ADS Vlvs.- Sol.C	-	125VDC	-	10AF	Board P628	040.034-9	Note 4	-	040.034-9
X-105C	127,128, 233&234	#14	1ADS-31	1ADS-3	Board P628	ADS Vlvs.- Sol.C	-	125VDC	-	10AF	Board P628	040.034-9	Note 4	-	040.034-9
X-105C	129,130, 235&236	#14	1ADS-31	1ADS-4	Board P628	ADS Vlvs.- Sol.C	-	125VDC	-	10AF	Board P628	040.034-9	Note 4	-	040.034-9
X-105C	131,132, 237&238	#14	1ADS-31	1ADS-5	Board P628	ADS Vlvs.- Sol.C	-	125VDC	-	10AF	Board P628	040.034-9	Note 4	-	040.034-9
X-105C	133&134	#14	None	None	-	-	-	-	-	-	-	-	-	-	-
X-105C	135,136, 239&240	#14	1ADS-31	1ADS-2	Board P628	ADS Vlvs.- Sol.C	-	125VDC	-	10AF	Board P628	040.034-9	Note 4	-	040.034-9
X-105C	137&138	#14	ACACS-9179	ACACS-9183	Note 8	-	-	-	-	-	-	-	-	-	-
X-105C	139,140, 241&242	#14	1ADS-27	1ADS-8	Board P628	ADS Vlvs.- Sol.C	-	125VDC	-	10AF	Board P628	040.034-9	Note 4	-	040.034-9
X-105C	141,142, 243&244	#14	1ADS-27	1ADS-7	Board P628	ADS Vlvs.- Sol.C	-	125VDC	-	10AF	Board P628	040.034-9	Note 4	-	040.034-9
X-105C	143-145	#14	ACACS-9175	ACACS-9172	Note 8	-	-	-	-	-	-	-	-	-	-
X-105C	146-148	#14	ACACS-9176	ACACS-9173	Note 8	-	-	-	-	-	-	-	-	-	-
X-105C	149,150, 241&242	#14	1ADS-31	1ADS-1	Board P628	ADS Vlvs.- Sol.C	-	125VDC	-	10AF	Board P628	040.034-9	Note 4	-	040.034-9
X-105C	151&152	#14	None	None	-	-	-	-	-	-	-	-	-	-	-
X-105C	153,154, 243&244	#14	1ADS-37	1ADS-21	Board P628	ADS Vlvs.- Sol.A	-	125VDC	-	10AF	Board P628	040.034-9	Note 4	-	040.034-9
X-105C	155,156, 245&246	#14	1ADS-37	1ADS-22	Board P628	ADS Vlvs.- Sol.A	-	125VDC	-	10AF	Board P628	040.034-9	Note 4	-	040.034-9
X-105C	157,158, 247&248	#14	1ADS-37	1ADS-23	Board P628	ADS Vlvs.- Sol.A	-	125VDC	-	10AF	Board P628	040.034-9	Note 4	-	040.034-9
X-105C	159,160, 249&250	#14	1ADS-37	1ADS-24	Board P628	ADS Vlvs.- Sol.A	-	125VDC	-	10AF	Board P628	040.034-9	Note 4	-	040.034-9
X-105C	161,162,	#14	1ADS-37	1ADS-25	Board P628	ADS Vlvs.- Sol.A	-	125VDC	-	10AF	Board P628	040.034-9	Note 4	-	040.034-9

PENETRATION			EXTERNAL CABLING		CIRCUIT DATA					PRIMARY O/C DEVICE			BACKUP O/C DEVICE		
PENET IDENT NO	COND DESIG	SIZE	OUTBOARD CABLE DESIG	INBOARD CABLE DESIG	PWR SOURCE	DESTINATION	HP/KW	VOLTS	AMPS	DEVICE	LOCATION	FIGURE	DEVICE	LOCATION	FIGURE
X-105C	163,164, 253&254	#14	1ADS-36	1ADS-6	Board P628	ADS Vlvs.- Sol.C	-	125VDC	-	10AF	Board P628	040.034-9	Note 4	-	040.034-9
X-105C	165,166, 255&256	#14	1ADS-36	1ADS-17	Board P628	ADS Vlvs.- Sol.C	-	125VDC	-	10AF	Board P628	040.034-9	Note 4	-	040.034-9
X-105C	167,168, 257&258	#14	1ADS-36	1ADS-13	Board P628	ADS Vlvs.- Sol.C	-	125VDC	-	10AF	Board P628	040.034-9	Note 4	-	040.034-9
X-105C	169-171	#14	ACACS-9177	ACACS-9174	Note 8	-	-	-	-	-	-	-	-	-	-
X-105C	172-174 &259-261	#14	1LPCS-13	1LPCS-15	Board P601	E21-F051	-	120VAC	-	10AF	Board P601	040.034-9	Note 4	-	040.034-9
X-105C	175,176, 262&263	#14	AP7AE-9021	AP7AE-9050	PP-7A-E	CRA-FN-1A-1 Htr.	175W	120VAC	1.5A	10AF	PP-7A-E	040.034-9	20AF	PP-7A-E	040.034-9
X-105C	177,178, 264&265	#14	AP7AE-9023	AP7AE-9051	PP-7A-E	CRA-FN-1A-2 Htr.	264W	120VAC	2.2A	10AF	PP-7A-E	040.034-9	20AF	PP-7A-E	040.034-9
X-105C	179,180, 270&271	#14	1ADS-26	1ADS-18	Board P628	ADS Vlvs.- Sol.C	-	125VDC	-	10AF	Board P628	040.034-9	Note 4	-	040.034-9
X-105C	181,182, 272&273	#14	1ADS-26	1ADS-16	Board P628	ADS Vlvs.- Sol.C	-	125VDC	-	10AF	Board P628	040.034-9	Note 4	-	040.034-9
X-105C	183,184, 274&275	#14	1ADS-26	1ADS-14	Board P628	ADS Vlvs.- Sol.C	-	125VDC	-	10AF	Board P628	040.034-9	Note 4	-	040.034-9
X-105C	185,186, 276&277	#14	1ADS-26	1ADS-15	Board P628	ADS Vlvs.- Sol.C	-	125VDC	-	10AF	Board P628	040.034-9	Note 4	-	040.034-9
X-105C	187,188, 278&279	#14	1ADS-34	1ADS-19	Board P628	ADS Vlvs.- Sol.A	-	125VDC	-	10AF	Board P628	040.034-9	Note 4	-	040.034-9
X-105C	189,190, 280&281	#14	1ADS-34	1ADS-20	Board P628	ADS Vlvs.- Sol.A	-	125VDC	-	10AF	Board P628	040.034-9	Note 4	-	040.034-9
X-105C	191,192, 266&267	#14	AP7AE-9024	AP7AE-9052	PP-7A-E	CRA-FN-2A-1 Htr.	370W	120VAC	3A	10AF	PP-7A-E	040.034-9	20AF	PP-7A-E	040.034-9
X-105C	193,194, 268&269	#14	AP7AE-9025	AP7AE-9053	PP-7A-E	CRA-FN-2A-2 Htr.	125W	120VAC	1A	10AF	PP-7A-E	040.034-9	20AF	PP-7A-E	040.034-9
X-105C	195-197	#14	1IR73-1	None	-	-	-	-	-	-	-	-	-	-	-
X-105C	198,199, 282&283	#14	1IR73-1 (Note 2)	1IR73-2	IR-73	HS-V-22A	-	120VAC	-	10AF	IR-73	040.034-9	Note 9	-	040.034-9
X-105C	199,200, 283&284	#14	1IR73-1 (Note 2)	1IR783-3	IR-73	HS-V-22B	-	120VAC	-	10AF	IR-73	040.034-9	Note 9	-	040.034-9
X-105C	201,202, 285&286	#14	1IR73-1	1IR73-4	IR-73	HS-V-22C	-	120VAC	-	10AF	IR-73	040.034-9	Note 9	-	040.034-9
X-105C	203,204, 287&288	#14	1IR73-1	1IR73-5	IR-73	HS-V-22D	-	120VAC	-	10AF	IR-73	040.034-9	Note 9	-	040.034-9
X-105C	205-209 &289-293	#14	1RCIC-44	1RCIC-13	Board P601	E21-F066	-	120VAC	Neg.	10AF	Board P601	040.034-9	Note 4	-	040.034-9
X-105C	210-212	#14	ACACS-9170	ACACS-9171	Note 8	-	-	-	-	-	-	-	-	-	-
X-105C	213-215 &294-296	#14	1LPCS-10	1LPCS-11	Board P601	E21-F006	-	120VAC	Neg.	10AF	Board P601	040.034-9	Note 4	-	040.034-9
X-105C	216-218	#14	None	None	-	-	-	-	-	-	-	-	-	-	-
X-105C	219&220	#14	AANH-9279	AANH-9280	Note 3	-	-	-	-	-	-	-	-	-	-
X-105C	221&222	#14	AANH-9274	AANH-9275	Note 3	-	-	-	-	-	-	-	-	-	-
X-105C	223&224	#14	AANH-9272	AANH-9273	Note 3	-	-	-	-	-	-	-	-	-	-
X-105C	297-334	#14	None	None	-	-	-	-	-	-	-	-	-	-	-
X-105C	403-534	#14	None	None	-	-	-	-	-	-	-	-	-	-	-
X-105D	1	#14	3IPCS-453	3IPCS-452	Cable Shield	-	-	-	-	-	-	-	-	-	-
X-105D	2-13	#14	3IPCS-453	3IPCS-452	Posit. Detector	1PCS-V-5	-	-	-	Note 10	-	-	Note 10	-	-
X-105D	14-16 &527-529	#14	3IPCS-454	3IPCS-276	Board P601	E22-F005	-	120VAC	-	10AF	Board P601	040.034-9	Note 4	-	040.034-9

TABLE 040.034-3
PRIMARY CONTAINMENT ELECTRICAL P[illegible]ION ANALYSIS
PENETRATIONS X-105[illegible]

PENETRATION			EXTERNAL CABLING		CIRCUIT DATA					PRIMARY O/C DEVICE			BACKUP O/C DEVICE		
PENET IDENT NO	COND DESIG	SIZE	OUTBOARD CABLE DESIG	INBOARD CABLE DESIG	PWR SOURCE	DESTINATION	HP/KW	VOLTS	AMPS	DEVICE	LOCATION	FIGURE	DEVICE	LOCATION	FIGURE
X-105D	17,18,20 & 530-532	#14	3HPCS-280	3HPCS-281	Board P601	E22-F039	-	120VAC	-	10AF	Board P601	040.034-9	Note 4	-	040.034-9
X-105D	19	#14	Note 1	Note 1	-	-	-	-	-	-	-	-	-	-	-
X-105D	21-23 & 533-535	#14	3HPCS-642	3HPCS-643	Board P601	HPCS-V-76	-	120VAC	-	10AF	Board P601	040.034-9	Note 4	-	040.034-9
X-105D	24-26	#14	None	None		-	-	-	-	-	-	-	-	-	-
X-105D	100-108	#14	BSRHD-9003	BSRHD-9027	Pnl H22-P008	C51-S001A-SRM A	-	120VAC	-	5AF	Pnl H22-P008	040.034-8	10AF	Pnl H22-P008	040.034-8
X-105D	109-117	#14	BSRHD-9005	BSRHD-9029	Pnl H22-P008	C51-S001B-SRM B	-	120VAC	-	5AF	Pnl H22-P008	040.034-8	10AF	Pnl H22-P008	040.034-8
X-105D	118-126	#14	BSRHD-9007	BSRHD-9031	Pnl H22-P008	C51-S001C-SRM C	-	120VAC	-	5AF	Pnl H22-P008	040.034-8	10AF	Pnl H22-P008	040.034-8
X-105D	127-135	#14	BSRHD-9009	BSRHD-9033	Pnl H22-P008	C51-S001D-SRM D	-	120VAC	-	5AF	Pnl H22-P008	040.034-8	10AF	Pnl H22-P008	040.034-8
X-105D	136-142	#14	2HBBA-252	2HBBA-253	HC-8B-A	RWCU-V-1 Ctrl.	-	120VAC	Neg.	3AF	HC-8B-A	040.034-10	5.6AF (460V)	HC-8B-A	040.034-10
X-105D	143-147	#14	BSRHD-9004	BSRHD-9028	Pnl H22-P008	C51-S001A-SRM A	-	120VAC	-	1AF	Pnl H22-P008	040.034-8	5AF	Pnl H22-P008	040.034-8
X-105D	148-152	#14	BSRHD-9006	BSRHD-9030	Pnl H22-P008	C51-S001B-SRM B	-	120VAC	-	1AF	Pnl H22-P008	040.034-8	5AF	Pnl H22-P008	040.034-8
X-105D	153-161	#14	BSRHD-9011	BSRHD-9035	Pnl H22-P008	C51-S001E-IRM A	-	120VAC	-	5AF	Pnl H22-P008	040.034-8	10AF	Pnl H22-P008	040.034-8
X-105D	162-168	#14	2HBBA-312	2HBBA-313	HC-8B-A	RHR-V-9 Ctrl.	-	120VAC	Neg.	3AF	HC-8B-A	040.034-10	3AF (120V)	HC-8B-A	040.034-10
X-105D	169-173	#14	BSRHD-9008	BSRHD-9032	Pnl H22-P008	C51-S001C-SRM C	-	120VAC	-	1AF	Pnl H22-P008	040.034-8	5AF	Pnl H22-P008	040.034-8
X-105D	174-178	#14	BSRHD-9010	BSRHD-9034	Pnl H22-P008	C51-S001D-SRM D	-	120VAC	-	1AF	Pnl H22-P008	040.034-8	5AF	Pnl H22-P008	040.034-8
X-105D	179-185	#14	2HBBA-192	2HBBA-193	HC-8B-A	HS-V-16 Ctrl.	-	120VAC	Neg.	3AF	HC-8B-A	040.034-10	1.25AF (460V)	HC-8B-A	040.034-10
X-105D	186-194	#14	BSRHD-9013	BSRHD-9037	Pnl H22-P008	C51-S001F-IRM B	-	120VAC	-	5AF	Pnl H22-P008	040.34-8	10AF	Pnl H22-P008	040.034-8
X-105D	195-199	#14	BSRHD-9012	BSRHD-9036	Pnl H22-P008	C51-S001E-IRM A	-	120VAC	-	1AF	Pnl H22-P008	040.034-8	5AF	Pnl H22-P008	040.034-8
X-105D	200-204	#14	BSRHD-9014	BSRHD-9038	Pnl H22-P008	C51-S001F-IRM B	-	120VAC	-	1AF	Pnl H22-P008	040.034-8	5AF	Pnl H22-P008	040.034-8
X-105D	205-216	#14	BIVD-9089	BIVD-9163											
X-105D	217-221	#14	BSRHD-9016	BSRHD-9040	Pnl H22-P008	C51-S001G-IRM C	-	120VAC	-	1AF	Pnl H22-P008	040.034-8	5AF	Pnl H22-P008	040.034-8
X-105D	222-224	#14	BCACS-9192	BCACS-9190	Note 8	-	-	-	-	-	-	-	-	-	-
X-105D	225-227	#14	BCACS-9193	BCACS-9189	Note 8	-	-	-	-	-	-	-	-	-	-
X-105D	228-230	#14	BCACS-9194	BCACS-9188	Note 8	-	-	-	-	-	-	-	-	-	-
X-105D	231-239	#14	BSRHD-9015	BSRHD-9039	Pnl H22-P008	C51-S001G-IRM C	-	120VAC	-	5AF	Pnl H22-P008	040.034-8	10AF	Pnl H22-P008	040.034-8
X-105D	240-246	#14	2HBBA-442	2HBBA-443	HC-8B-A	RCIC-V-76 Ctr.	-	120VAC	Neg.	3AF	HC-8B-A	040.034-10	4AF (460V)	HC-8B-A	040-034-10
X-105D	247-251	#14	BSRHD-9018	BSRHD-9042	Pnl H22-P008	C51-S001H-IRM D	-	120VAC	-	1AF	Pnl H22-P008	040.034-8	5AF	Pnl H22-P008	040.034-8
X-105D	252-256	#14	BSRHD-9020	BSRHD-9044	Pnl H22-P008	C51-S001J-IRM E	-	120VAC	-	1AF	Pnl H22-P008	040.034-8	5AF	Pnl H22-P008	040.034-8
X-105D	257-263	#14	BCBH-9011	BCBH-9012	Note 8	-	-	-	-	-	-	-	-	-	-
X-105D	264-272	#14	BSRHD-9017	BSRHD-9041	Pnl H22-P008	C51-S001H-IRM D	-	120VAC	-	5AF	Pnl H22-P008	040.034-8	10AF	Pnl H22-P008	040.034-8
X-105D	273-277	#14	BSRHD-9022	BSRHD-9046	Pnl H22-P008	C51-S001K-IRM F	-	120VAC	-	1AF	Pnl H22-P008	040.034-8	5AF	Pnl H22-P008	040.034-8
X-105D	278-282	#14	BSRHD-9024	BSRHD-9048	Pnl H22-P008	C51-S001L-IRM G	-	120VAC	-	1AF	Pnl H22-P008	040.034-8	5AF	Pnl H22-P008	040.034-8
X-105D	283-291	#14	BSRHD-9019	BSRHD-9043	Pnl H22-P008	C51-S001J-IRM E	-	120VAC	-	5AF	Pnl H22-P008	040.034-8	10AF	Pnl H22-P008	040.034-8
X-105D	292-300	#14	BSRHD-9021	BSRHD-9045	Pnl H22-P008	C51-S001K-IRM F	-	120VAC	-	5AF	Pnl H22-P008	040.034-8	10AF	Pnl H22-P008	040.034-8
X-105D	301-303	#14	BCACS-9196	BCACS-9187	Note 8	-	-	-	-	-	-	-	-	-	-
X-105D	304-306	#14	BCACS-9197	BCACS-9186	Note 8	-	-	-	-	-	-	-	-	-	-
X-105D	307&308	#14	BRCIC-9009	BRCIC-9010	-	E51-F076 Status	-	125VDC	Neg.	Note 3	-	-	Note 3	-	-
X-105D	309-317	#14	BSRHD-9023	BSRHD-9047	Pnl H22-P008	C51-S001L-IRM G	-	120VAC	-	5AF	Pnl H22-P008	040.034-8	10AF	Pnl H22-P008	040.034-8
X-105D	318-322	#14	BSRHD-9026	BSRHD-9050	Pnl H22-P008	C51-S001H-IRM H	-	120VAC	-	1AF	Pnl H22-P008	040.034-8	5AF	Pnl H22-P008	040.034-8
X-105D	323-331	#14	BSRHD-9025	BSRHD-9049	Pnl H22-P008	C51-S001H-IRM H	-	120VAC	-	5AF	Pnl H22-P008	040.034-8	10AF	Pnl H22-P008	040.034-8
X-105D	332-334 & 528-530	#14	BSLC-9005	BSLC-9006	Board P603	C41-F008 Indic.	-	120VAC	Neg.	5AF	Board P603	040.034-9	Note 4	-	040.034-9
X-105D	400-408	#14	BIVD-9087	BIVD-9160	Board S	Misc. Vlvs.	-	12VAC	Neg.	5AF	Board S	040.034-8	10AF	Board S	040.034-8
X-105D	409-417	#14	BIVD-9088	BIVD-9162	Board S	Misc. Vlvs.	-	12VAC	Neg.	5AF	Board S	040.034-8	5AF	Board S	040.034-8
X-105D	418-426	#14	BIVD-9090	BIVD-9161	Board S	Misc. Vlvs.	-	12VAC	Neg.	5AF	Board S	040.034-8	10AF	Board S	040.034-8
X-105D	427-433	#14	BHSCB-9322	BHSCB-9323	HC-8C-B	HS-V-1 Ctrl.	-	120VAC	Neg.	3AF	HC-8C-B	040.034-10	4AF (460V)	HC-8C-B	040.034-10

TABLE 040.034-5
PRIMARY CONTAINMENT ELECTRICAL PE[illegible]ON ANALYSIS
PENETRATIONS X-105[illegible]

PENETRATION			EXTERNAL CABLING		CIRCUIT DATA					PRIMARY O/C DEVICE			BACKUP O/C DEVICE		
PENET IDENT NO	COND DESIG	SIZE	OUTBOARD CABLE DESIG	INBOARD CABLE DESIG	PWR SOURCE	DESTINATION	IP/KW	VOLTS	AMPS	DEVICE	LOCATION	FIGURE	DEVICE	LOCATION	FIGURE
X-105D	441&442	#14	BCACS-9198	BCACS-9205	Note 8	-	-	-	-	-	-	-	-	-	-
X-105D	443&444	#14	BCACS-9199	BCACS-9206	Note 8	-	-	-	-	-	-	-	-	-	-
X-105D	445&446	#14	BCACS-9200	BCACS-9207	Note 8	-	-	-	-	-	-	-	-	-	-
X-105D	447-452	#14	None	None	-	-	-	-	-	-	-	-	-	-	-
X-105D	453-461	#14	2H8DA-372	2H8BA-373	HC-8B-A	RCC-V-40 Ctrl.	-	120VAC	Neg.	3AF	HC-8B-A	040.034-10	3.2AF (460V)	HC-8B-A	040.034-10
X-105D	462-468	#14	BH8CB-9342	BH8CB-9343	HC-8C-B	HS-V-3 Ctrl.	-	120VAC	Neg.	3AF	HC-8C-B	040.034-10	4AF (460V)	HC-8C-B	040.034-10
X-105D	469-477	#14	2H8BA-362	2H8BA-363	HC-8B-A	RCIC-V-63 Ctrl.	-	120VAC	Neg.	3AF	HC-8B-A	040.034-10	3AF (120V)	HC-8B-A	040.034-10
X-105D	478	#14	None	None	-	-	-	-	-	-	-	-	-	-	-
X-105D	479,480, 516&517	#14	BP8AE-9018	BP8AE-9052	PP-8A-E	CRA-FN-1B-1 Htr.	175W	120VAC	1.5A	10AF	PP-8A-E	040.034-9	20AF	PP-8A-E	040.034-9
X-105D	481,482, 518&519	#14	BP8AE-9019	BP8AE-9053	PP-8A-E	CRA-FN-1B-2 Htr.	264W	120VAC	2.2A	10AF	PP-8A-E	040.034-9	20AF	PP-8A-E	040.034-9
X-105D	483,484, 520&521	#14	BP8AE-9020	BP8AE-9054	PP-8A-E	CRA-FN-1C-1 Htr.	175W	120VAC	1.5A	10AF	PP-8A-E	040.034-9	20AF	PP-8A-E	040.034-9
X-105D	485,486, 522&523	#14	BP8AE-9021	BP8AE-9055	PP-8A-E	CRA-FN-1C-2 Htr.	264W	120VAC	2A	10AF	PP-8A-E	040.034-9	20AF	PP-8A-E	040.034-9
X-105D	487,488, 524&525	#14	BP8AE-9022	BP8AE-9056	PP-8A-E	CRA-FN-2B-1 Htr.	370W	120VAC	3A	10AF	PP-8A-E	040.034-9	20AF	PP-8A-E	040.034-9
X-105D	489,490, 526&527	#14	BP8AE-9023	BP8AE-9057	PP-8A-E	CRA-FN-2B-2 Htr.	125W	120VAC	1A	10AF	PP-8A-E	040.034-9	20AF ~~PP-8A-E~~	PP-8A-E ~~040.034-9~~	040.034-9
X-105D	491&492	#14	None	None	-	-	-	-	-	-	-	-	-	-	-
X-105D	493-495	#14	BCACS-9195	BCACS-9184	Note 8	-	-	-	-	-	-	-	-	-	-
X-105D	496-498	#14	BCACS-9191	BCACS-9185	Note 8	-	-	-	-	-	-	-	-	-	-
X-105D	499&500	#14	BANN-9282	BANN-9283	-	HPCS-V-51	-	-	-	Note 3	-	-	Note 3	-	-
X-105D	501-504	#14	None	None	-	-	-	-	-	-	-	-	-	-	-
X-105D	505&506	#14	BANN-9254	BANN-9255	-	SLC-V-1	-	-	-	Note 3	-	-	Note 3	-	-
X-105D	507&508	#14	BANN-9271	BANN-9272	-	RHR-V-111B	-	-	-	Note 3	-	-	Note 3	-	-
X-105D	509&510	#14	BANN-9267	BANN-9268	-	RHR-V-111C	-	-	-	Note 3	-	-	Note 3	-	-
X-105D	511&512	#14	BANN-9269	BANN-9270	-	RHR-V-113	-	-	-	Note 3	-	-	Note 3	-	-
X-105D	513&514	#14	BRCIC-9027	BRCIC-9028	-	RCIC-V-63	-	-	-	Note 3	-	-	Note 3	-	-
X-105D	515	#14	BRCIC-9027	BRCIC-9028	Cable Shield	-	-	-	-	-	-	-	-	-	-
X-105D	528-634	#14	None	None	-	-	-	-	-	-	-	-	-	-	-

N[illegible] 1. Damaged terminal point. Penetration conductor tagged as damaged and [illegible]ilable for use.

2. Outboard cables utilize a common penetration conductor (conductor No. 199).

3. Annunciator circuits are low energy (125VDC, 3ma) circuits which connect to a low energy power module in the main control room with dry contacts within containment. These circuits do not have the capability to supply short circuit currents of the levels required to cause penetration conductor failure.

4. All circuits which receive their power supply from a board located in the Main Control Room are ultimately supplied by branch circuits located in the Main Control Room power panels. These branch circuits are provided with one of the following protective devices (depending upon the particular panel in question):

   a. 20A fuse or circuit breaker
   b. 30A fuse or circuit breaker

   Figure 040.034-9 indicates that any of these protective devices will limit I^2T levels to an acceptable value for a circuit utilizing 2 #14 penetration conductors per phase.

5. These circuits are low energy (4-20 ma, 24VDC) circuits. These circuits do not have the capability to supply short circuit currents of the levels required to cause penetration conductor failure.

6. These are current transformer secondary circuits. These circuits do not have the capability to supply short circuit currents of the levels required to cause penetration conductor failure.

7. These circuits are low energy instrumentation circuits (TIP Drive Position Sensing). These circuits do not have the capability to supply short circuit currents of the levels required to cause penetration conductor failure.

8. These circuits to valves RCC-TCV-71A, RCC-TCV-71B, RCC-TCV-71C, RCC-TCV-72A and RCC-TCV-72B and to dampers CRA-AD-1A-1, CRA-AD-1A-2, CRA-AD-1B-1, CRA-AD-1B-2, CRA-AD-1C-1, CRA-AD-2A and CRA-AD-2B are being deleted under B & R PCN #7166. Cables will be disconnected and penetration conductors labeled "spare".

9. Valves MS-V-22A,B,C,D wired together into one circuit. The 10A fuse in IR-73 is backed by a 20A C/B from a local power panel (this is the typical power arrangement for all IR's. See Figure 040.034-9.)

10. This is a low energy instrumentation circuit (valve position detection). This circuit does not have the capability to supply short circuit current of the level required to cause penetration conductor failure.

11. Details of Table subject to revision based upon finalization of design.

TABLE ...-4
PRIMARY CONTAINMENT ELEC... PENETRATION ANALYSIS (See Note 2)
PENETRATIONS X-107 A,B

PENETRATION			EXTERNAL CABLING		CIRCUIT DATA					PRIMARY O/C DEVICE			BACKUP O/C DEVICE		
PENET IDENT NO	COND DESIG	SIZE	OUTBOARD CABLE DESIG	INBOARD CABLE DESIG	PWR SOURCE	DESTINATION	HP/KW	VOLTS	AMPS	DEVICE	LOCATION	FIGURE	DEVICE	LOCATION	FIGURE
X-107A	1&7	#10	LP-3DA-G	LP-3DA-G	LP-3DA-G(Ckt. 2)	Ltg.	-/1.3	120VAC	10	15ACB	LP-3DA-G	040.034-7	100ACB	LP-3DA-G	040.034-7
X-107A	2&8	#10	LP-3DA-G	LP-3DA-G	LP-3DA-G(Ckt. 4)	Ltg.	-/1.3	120VAC	10	15ACB	LP-3DA-G	040.034-7	100ACB	LP-3DA-G	040.034-7
X-107A	3&9	#10	LP-3DA-G	LP-3DA-G	LP-3DA-G(Ckt. 6)	Ltg.	-/1.3	120VAC	10	15ACB	LP-3DA-G	040.034-7	100ACB	LP-3DA-G	040.034-7
X-107A	4&11	#10	LP-3DA-B	LP-3DA-B	LP-3DA-B(Ckt. 11)	Ltg.	-/1.3	120VAC	10	15ACB	LP-3DA-B	040.034-7	100ACB	LP-3DA-B	040.034-7
X-107A	5&6	#10	None	None	-	-	-	-	-	-	-	-	-	-	-
X-107A	10&20	#10	LP-3DA-G	LP-3DA-G	LP-3DA-G(Neut)	Ltg.	-	-	-	-	-	-	-	-	-
X-107A	12&21	#10	LP-3DA-B	LP-3DA-B	LP-3DA-B(Neut)	Ltg.	-	-	-	-	-	-	-	-	-
X-107A	13-15	#10	None	None	-	-	-	-	-	-	-	-	-	-	-
X-107A	16-18	#10	AM3DA-9040	AM3DA-9041	MC-3D-A	MT-HOI-11	3.25/-	480VAC	9.0	15AF	MC-3D-A	040.034-6	25AF	MC-3D-A	040.034-6
X-107A	19	#10	AM3DA-9040	AM3DA-9041	Ground Cond.	MT-HOI-11	-	-	-	-	-	-	-	-	-
X-107A	22-85	#10	None	None	-	-	-	-	-	-	-	-	-	-	-
X-107A	100	#14	None	None	-	-	-	-	-	-	-	-	-	-	-
X-107A	101-112	#14	ACACS-9241	ACACS-9231	Pnl VB-1	CVB-V-1AB	Neg	120VAC	Neg	5AF(F3)	Pnl VB-1	040.034-8	15AF(F1-1)	Pnl VB-1	040.034-8
X-107A	113-124	#14	ACACS-9242	ACACS-9232	Pnl VB-1	CVB-V-1CD	Neg	120VAC	Neg	5AF(F2)	Pnl VB-1	040.034-8	15AF(F2-1)	Pnl VB-1	040.034-8
X-107A	125	#14	None	None	-	-	-	-	-	-	-	-	-	-	-
X-107A	126-137	#14	ACACS-9243	ACACS-9233	Pnl VB-1	CVB-V-1EF	Neg	120VAC	Neg	5AF(F3)	Pnl VB-1	040.034-8	15AF(F3-1)	Pnl VB-1	040.034-8
X-107A	138-149	#14	ACACS-9244	ACACS-9234	Pnl VB-1	CVB-V-1GH	Neg	120VAC	Neg	5AF(F4)	Pnl VB-1	040.034-8	15AF(F4-1)	Pnl VB-1	040.034-8
X-107A	150-161	#14	ACACS-9245	ACACS-9235	Pnl VB-1	CVB-V-1JK	Neg	120VAC	Neg	5AF(F5)	Pnl VB-1	040.034-8	15AF(F5-1)	Pnl VB-1	040.034-8
X-107A	162-173	#14	ACACS-9246	ACACS-9236	Pnl VB-1	CVB-V-1LM	Neg	120VAC	Neg	5AF(F6)	Pnl VB-1	040.034-8	15AF(F6-1)	Pnl VB-1	040.034-8
X-107A	174-185	#14	ACACS-9247	ACACS-9237	Pnl. VB-1	CVB-V-1NP	Neg	120VAC	Neg	5AF(F7)	Pnl VB-1	040.034-8	15AF(F7-1)	Pnl VB-1	040.034-8
X-107A	186-189	#14	ACACS-9154	ACACS-9137	Pnl VB-1	CVB-V-1AB	Neg	120VAC	Neg	5AF(F1)	Pnl VB-1	040.034-8	15AF(F1-1)	Pnl VB-1	040.034-8
X-107A	190-193	#14	ACACS-9155	ACACS-9138	Pnl VB-1	CVB-V-1CD	Neg	120VAC	Neg	5AF(F2)	Pnl VB-1	040.034-8	15AF(F2-1)	Pnl VB-1	040.034-8
X-107A	194-197	#14	ACACS-9156	ACACS-9139	Pnl VB-1	CVB-V-1EF	Neg	120VAC	Neg	5AF(F3)	Pnl VB-1	040.034-8	15AF(F3-1)	Pnl VB-1	040.034-8
X-107A	198-209	#14	ACACS-9248	ACACS-9238	Pnl VB-1	CVB-V-1QR	Neg	120VAC	Neg	5AF(F8)	Pnl VB-1	040.034-8	15AF(F8-1)	Pnl VB-1	040.034-8
X-107A	210-213	#14	ACACS-9157	ACACS-9143	Pnl VB-1	CVB-V-1GH	Neg	120VAC	Neg	5AF(F4)	Pnl VB-1	040.034-8	15AF(F4-1)	Pnl VB-1	040.034-8
X-107A	214-217	#14	ACACS-9158	ACACS-9144	Pnl VB-1	CVB-V-1JK	Neg	120VAC	Neg	5AF(F5)	Pnl VB-1	040.034-8	15AF(F5-1)	Pnl VB-1	040.034-8
X-107A	218-221	#14	ACACS-9159	ACACS-9204	Pnl VB-1	CVB-V-1LM	Neg	120VAC	Neg	5AF(F6)	Pnl VB-1	040.034-8	15AF(F6-1)	Pnl VB-1	040.034-8
X-107A	222-233	#14	ACACS-9249.	ACACS-9239	Pnl VB-1	CVB-V-1ST	Neg	120VAC	Neg	5AF(F9)	Pnl VB-1	040.034-8	15AF(F9-1)	Pnl VB-1	040.034-8
X-107A	234-237	#14	ACACS-9160	ACACS-9143	Pnl VB-1	CVB-V-1NP	Neg	120VAC	Neg	5AF(F7)	Pnl VB-1	040.034-8	15AF(F7-1)	Pnl VB-1	040.034-8
X-107A	238-241	#14	ACACS-9161	ACACS-9144	Pnl VB-1	CVB-V-1QR	Neg	120VAC	Neg	5AF(F8)	Pnl VB-1	040.034-8	15AF(F8-1)	Pnl VB-1	040.034-8
X-107A	242-245	#14	ACACS-9206	ACACS-9204	Pnl VB-1	CVB-V-1ST	Neg	120VAC	Neg	5AF(F9)	Pnl VB-1	040.034-8	15AF(F9-1)	Pnl VB-1	040.034-8
X-107A	246-249	#14	AMISC-9803	AMISC-9800	ILRT Box "F"	RTD #17	Neg	-	Neg	Note 1	-	-	Note 1	-	-
X-107A	250	#14	AMISC-9803	AMISC-9800	ILRT Box "F"	Shield for RTD #17	-	-	-	-	-	-	-	-	-
X-107A	251-254	#14	AMISC-9804	AMISC-9801	ILRT Box "F"	RTD #18	Neg	-	Neg	Note 1	-	-	Note 1.	-	-
X-107A	255	#14	AMISC-9804	AMISC-9801	ILRT Box "F"	Shield for RTD #18	-	-	-	-	-	-	-	-	-
X-107A	256-260	#14	AMISC-9806	AMISC-9802	ILRT Box "F"	Dew Cell #6	Neg	-	Neg	Note 1	-	-	Note 1	-	-
X-107A	261	#14	AMISC-9806	AMISC-9802	ILRT Box "F"	Shield for Dew Cell #6	-	-	-	-	-	-	-	-	-
X-107A	262-269	#14	None	None	-	-	-	-	-	-	-	-	-	-	-
X-107A	300-302	#16	-	-	-	-	-	-	-	Note 1	-	-	Note 1	-	-
X-107A	303-314	#16	None	None	-	-	-	-	-	-	-	-	-	-	-
X-107A	315-342	#16	-	-	-	-	-	-	-	Note 1	-	-	Note 1	-	-

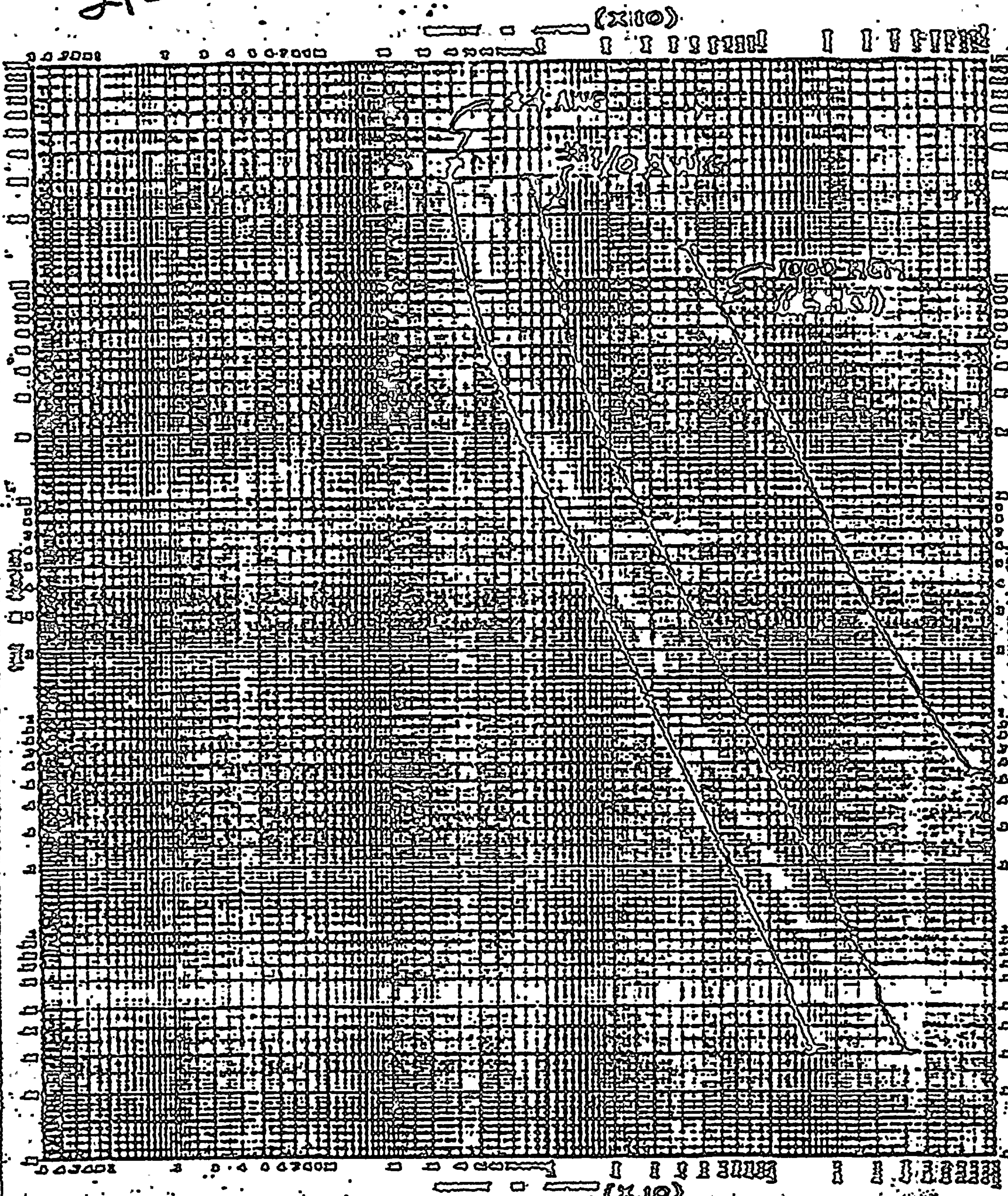
TABLE 040.034-4
PRIMARY CONTAINMENT ELECTRICAL PENETRATION ANALYSIS
PENETRATIONS X-107 A,B

PENETRATION			EXTERNAL CABLING		CIRCUIT DATA					PRIMARY O/C DEVICE			BACKUP O/C DEVICE		
PENET IDENT NO	COND DESIG	SIZE	OUTBOARD CABLE DESIG	INBOARD CABLE DESIG	PWR SOURCE	DESTIN-ATION	HP/KW	VOLTS	AMPS	DEVICE	LOCATION	FIGURE	DEVICE	LOCATION	FIGURE
X-107A	343-354	#16	-	-	-	-	-	-	-	Note 1	-	-	Note 1	-	-
X-107B	1 & 7	#10	LP-6BA-G	LP-6BA-G	LP-6BA-G(Ckt. 2)	Ltg.	-/1.3	120VAC	10	15ACB	LP-6BA-G	040.034-7	100ACB	LP-6BA-G	040.034-7
X-107B	2 & 8	#10	LP-6BA-G	LP-6BA-G	LP-6BA-G(Ckt. 4)	Ltg.	-/1.3	120VAC	10	15ACB	LP-6BA-G	040.034-7	100ACB	LP-6BA-G	040.034-7
X-107B	3 & 9	#10	LP-6BA-G	LP-6BA-G	LP-6BA-G(Ckt. 6)	Ltg.	-/1.3	120VAC	10	15ACB	LP-6BA-G	040.034-7	100ACB	LP-6BA-G	040.034-7
X-107B	4 & 11	#10	LP-6BA-B	LP-6BA-B	LP-6BA-B (Ckt. 19)	Ltg.	-/1.3	120VAC	10	15ACB	LP-6BA-B	040.034-7	100ACB	LP-6BA-G	040.034-7
X-107B	5 & 6	#10	None	None	-	-	-	-	-	-	-	-	-	-	-
X-107B	10&13	#10	LP-6BA-G	LP-6BA-G	LP-6BA-G(Neut)	-	-	-	-	-	-	-	-	-	-
X-107B	12&14	#10	LP-6BA-B	LP-6BA-B	LP-6BA-B(Neut)	-	-	-	-	-	-	-	-	-	-
X-107B	15-85	#10	None	None	-	-	-	-	-	-	-	-	-	-	-
X-107B	100	#14	None	None	-	-	-	-	-	-	-	-	-	-	-
X-107B	101-112	#14	BCACS-9281	BCACS-9271	Pnl VB-2	CBV-V-1AB	Neg	120VAC	Neg	5AF(F1)	Pnl VB-2	040.034-8	15AF(F1-1)	Pnl VB-2	040.034-8
X-107B	113-124	#14	BCACS-9282	BCACS-9272	Pnl VB-2	CVB-V-1CD	Neg	120VAC	Neg	5AF(F2)	Pnl VB-2	040.034-8	15AF(F2-1)	Pnl VB-2	040.034-8
X-107B	125	#14	None	None	-	-	-	-	-	-	-	-	-	-	-
X-107B	126-137	#14	BCACS-9283	BCACS-9273	Pnl VB-2	CVB-V-1EF	Neg	120VAC	Neg	5AF(F3)	Pnl VB-2	040.034-8	15AF(F3-1)	Pnl VB-2	040.034-8
X-107B	138-149	#14	BCACS-9284	BCACS-9274	Pnl VB-2	CVB-V-1GH	Neg	120VAC	Neg	5AF(F4)	Pnl VB-2	040.034-8	15AF(F4-1)	Pnl VB-2	040.034-8
X-107B	150-161	#14	BCACS-9285	BCACS-9275	Pnl VB-2	CVB-V-1JK	Neg	120VAC	Neg	5AF(F5)	Pnl VB-2	040.034-8	15AF(F5-1)	Pnl VB-2	040.034-8
X-107B	162-173	#14	BCACS-9286	BCACS-9276	Pnl VB-2	CVB-V-1LM	Neg	120VAC	Neg	5AF(F6)	Pnl VB-2	040.034-8	15AF(F6-1)	Pnl VB-2	040.034-8
X-107B	174-185	#14	BCACS-9287	BCACS-9277	Pnl VB-2	CVB-V-1NP	Neg	120VAC	Neg	5AF(F7)	Pnl VB-2	040.034-8	15AF(F7-1)	Pnl VB-2	040.034-8
X-107B	186-189	#14	BCACS-9162	BCACS-9145	Pnl VB-2	CVB-V-1AB	Neg	120VAC	Neg	5AF(F1)	Pnl VB-2	040.034-8	15AF(F1-1)	Pnl VB-2	040.034-8
X-107B	190-193	#14	BCACS-9163	BCACS-9146	Pnl VB-2	CVB-V-1CD	Neg	120VAC	Neg	5AF(F2)	Pnl VB-2	040.034-8	15AF(F2-1)	Pnl VB-2	040.034-8
X-107B	194-197	#14	BCACS-9164	BCACS-9147	Pnl VB-2	CVB-V-1EF	Neg	120VAC	Neg	5AF(F3)	Pnl VB-2	040.034-8	15AF(F3-1)	Pnl VB-2	040.034-8
X-107B	198-209	#14	BCACS-9288	BCACS-9278	Pnl VB-2	CVB-V-1QR	Neg	120VAC	Neg	5AF(F8)	Pnl VB-2	040.034-8	15AF(F8-1)	Pnl VB-2	040.034-8
X-107B	210-213	#14	BCACS-9168	BCACS-9148	Pnl VB-2	CVB-V-1GH	Neg	120VAC	Neg	5AF(F4)	Pnl VB-2	040.034-8	15AF(F4-1)	Pnl VB-2	040.034-8
X-107B	214-217	#14	BCACS-9166	BCACS-9149	Pnl VB-2	CVB-V-1JK	Neg	120VAC	Neg	5AF(F5)	Pnl VB-2	040.034-8	15AF(F5-1)	Pnl VB-2	040.034-8
X-107B	218-221	#14	BCACS-9167	BCACS-9150	Pnl VB-2	CVB-V-1LM	Neg	120VAC	Neg	5AF(F6)	Pnl VB-2	040.034-8	15AF(F6-1)	Pnl VB-2	040.034-8
X-107B	222-233	#14	BCACS-9289	BCACS-9279	Pnl VB-2	CVB-V-1ST	Neg	120VAC	Neg	5AF(F9)	Pnl VB-2	040.034-8	15AF(F9-1)	Pnl VB-2	040.034-8
X-107B	234-237	#14	BCACS-9168	BCACS-9151	Pnl VB-2	CVB-V-1NP	Neg	120VAC	Neg	5AF(F7)	Pnl VB-2	040.034-8	15AF(F7-1)	Pnl VB-2	040.034-8
X-107B	238-241	#14	BCACS-9169	BCACS-9152	Pnl VB-2	CVB-V-1QR	Neg	120VAC	Neg	5AF(F8)	Pnl VB-2	040.034-8	15AF(F8-1)	Pnl VB-2	040.034-8
X-107B	242-245	#14	BCACS-9254	BCACS-9252	Pnl VB-2	CVB-V-1ST	Neg	120VAC	Neg	5AF(F9)	Pnl VB-2	040.034-8	15AF(F9-1)	Pnl VB-2	040.034-8
X-107B	246-249	#14	BMISC-9838	BMISC-9837	ILRT Box "F"	RTD #15	Neg	-	Neg	Note 1	-	-	Note 1	-	-
X-107B	250	#14	BMISC-9838	BMISC-9837	ILRT Box "F"	Shield for RTD #15	-	-	-	-	-	-	-	-	-
X-107B	251-254	#14	BMISC-9840	BMISC-9839	ILRT Box "F"	RTD #16	Neg	-	Neg	Note 1	-	-	Note 1	-	-
X-107B	255	#14	BMISC-9840	BMISC-9839	ILRT Box "F"	Shield for RTD #16	-	-	-	-	-	-	-	-	-
X-107B	256-260	#14	BMISC-9850	BMISC-9849	ILRT Box "F"	Dew Cell #5	Neg	-	Neg	Note 1	-	-	Note 1	-	-
X-107B	261	#14	BMISC-9850	BMISC-9849	ILRT Box "F"	Shield for Dew Cell #5	-	-	-	-	-	-	-	-	-
X-107B	262-269	#14	None	None	-	-	-	-	-	-	-	-	-	-	-
X-107B	300-304	#16	-	-	-	-	-	-	-	Note 1	-	-	Note 1	-	-
X-107B	305-314	#16	None	None	-	-	-	-	-	-	-	-	-	-	-
X-107B	315-342	#16	-	-	-	-	-	-	-	Note 1	-	-	Note 1	-	-
X-107B	343-354	#16	None	None	-	-	-	-	-	-	-	-	-	-	-

NOTES: 1. These circuits are instrumentation, thermocouple, RTD and communication circuits.

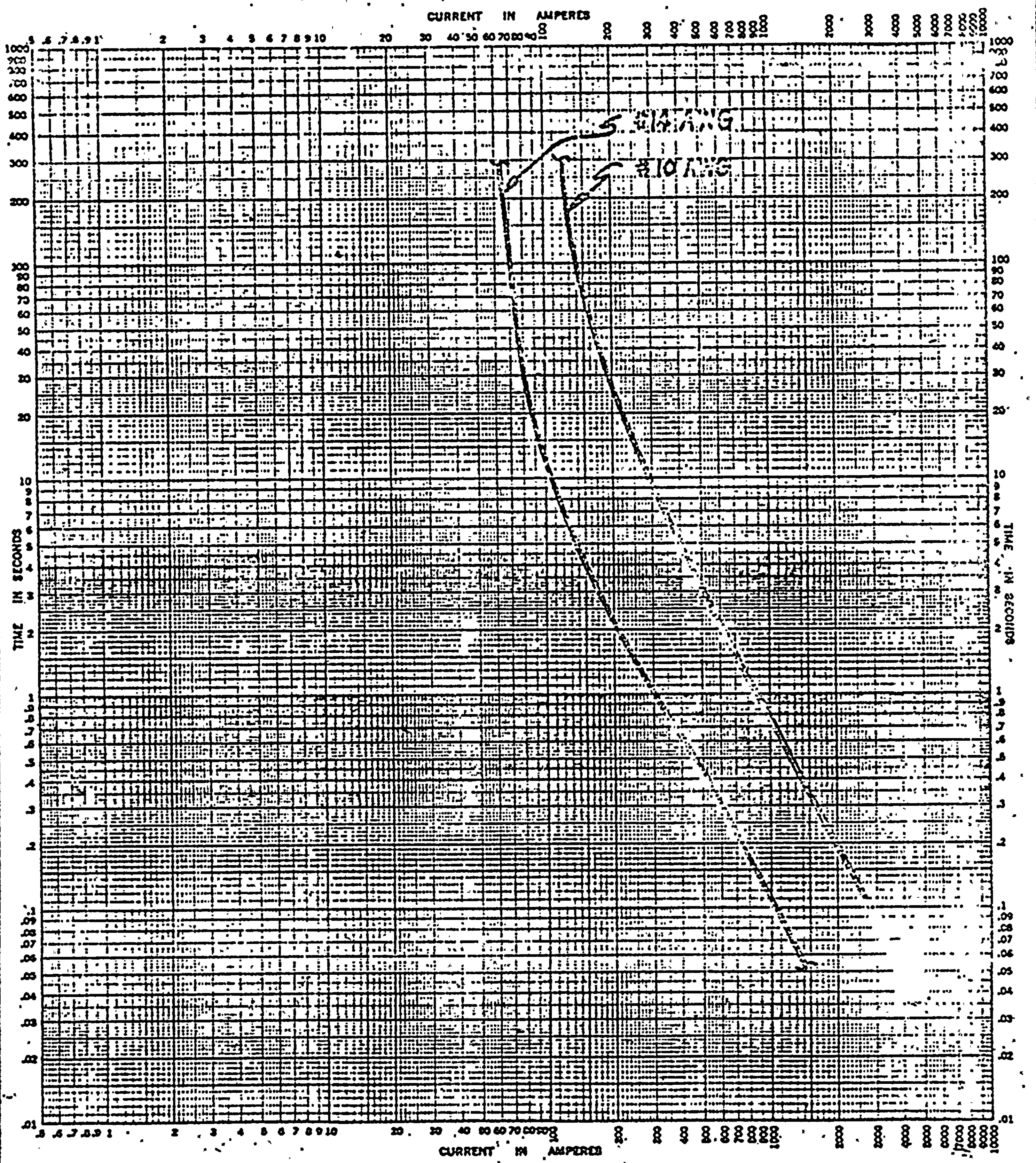
2. Details of Table subject to revision based upon finalization of design.

213



Basis: Westinghouse Report No. PEN-TR-[illegible] (1000 MCM)
Westinghouse Report No. PEN-TR-77-68 (#1/0 & #4)

WASHINGTON PUBLIC POWER SUPPLY SYSTEM NUCLEAR PROJECT NO. 2	CONTAINMENT ELECTRICAL PENETRATIONS PENETRATION CONDUCTOR I^2T CURVES 1000 MCM, #1/0 & #4 CONDUCTORS	FIGURE 040. 034-1

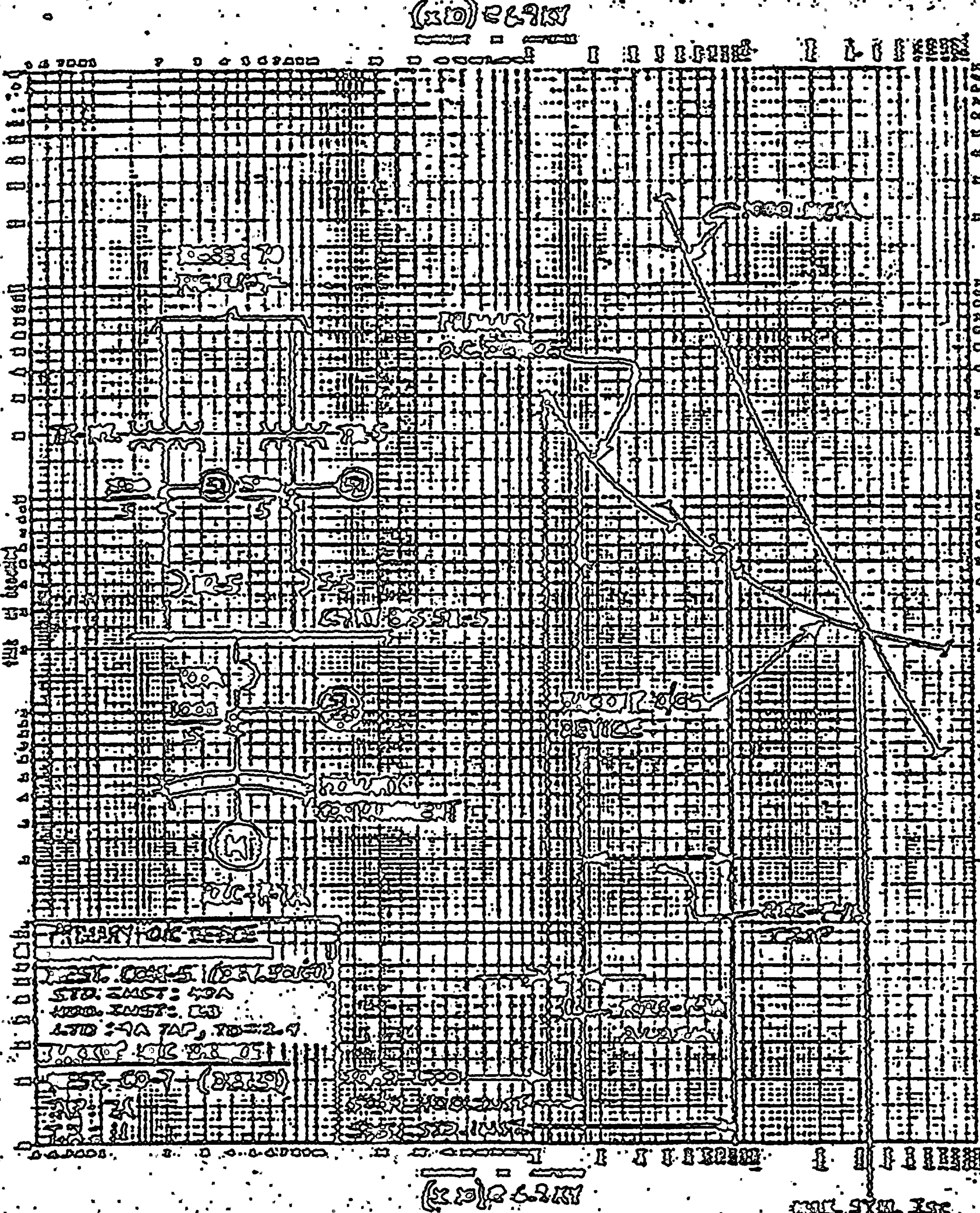


Basis: Westinghouse Report No. PEN-TR-77-68

WASHINGTON PUBLIC POWER SUPPLY SYSTEM NUCLEAR PROJECT NO. 2	CONTAINMENT ELECTRICAL PENETRATIONS PENETRATION CONDUCTOR I^2T CURVES #10 and #14 CONDUCTORS	FIGURE 040. 034-2

NOTE: DATA SHOWN IS FOR PENETRATION X-103A.
PENETRATION X-103C IS SIMILAR.

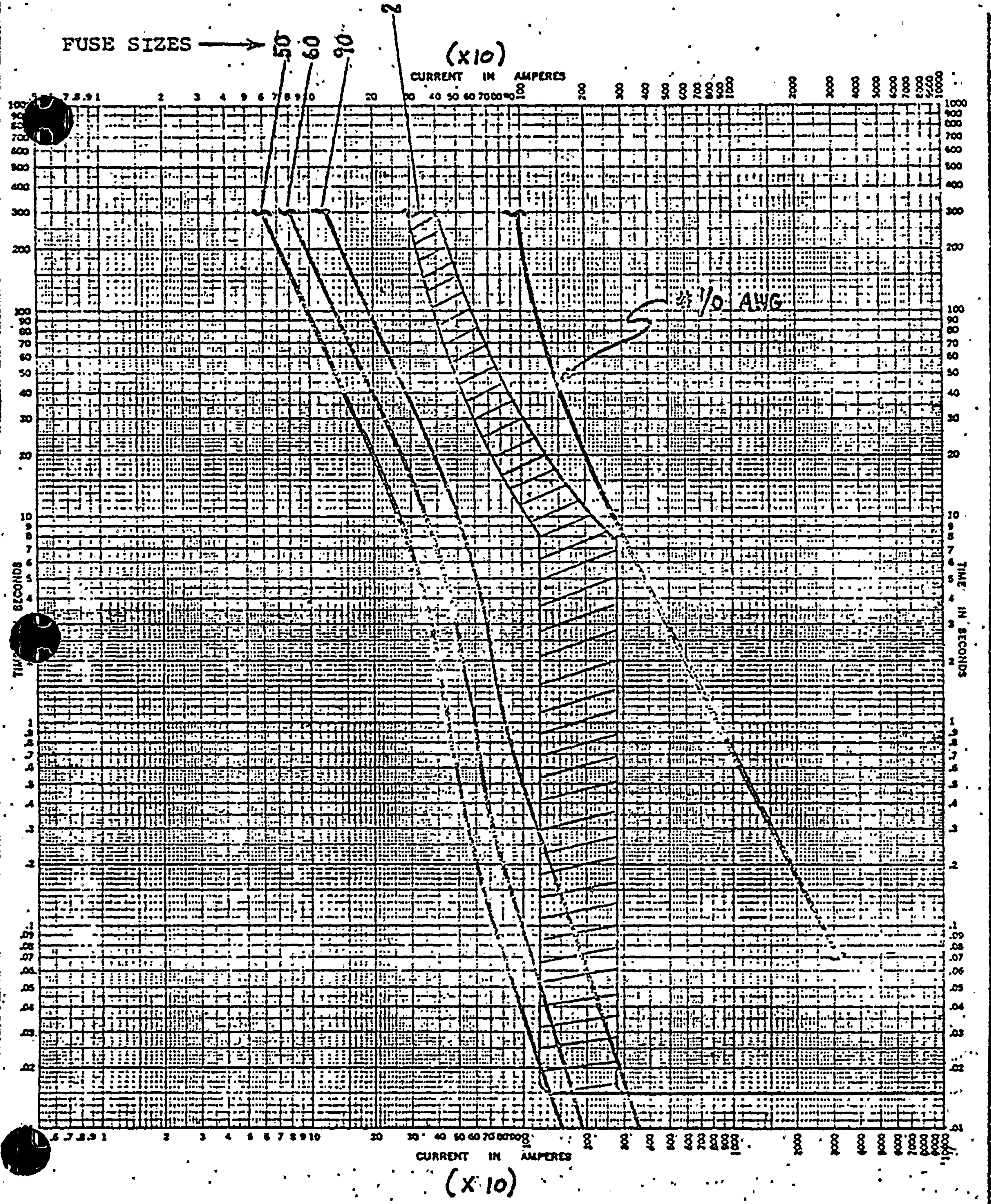
313



MAX. SYM. Isc
AT SH-5
(52,575A.)

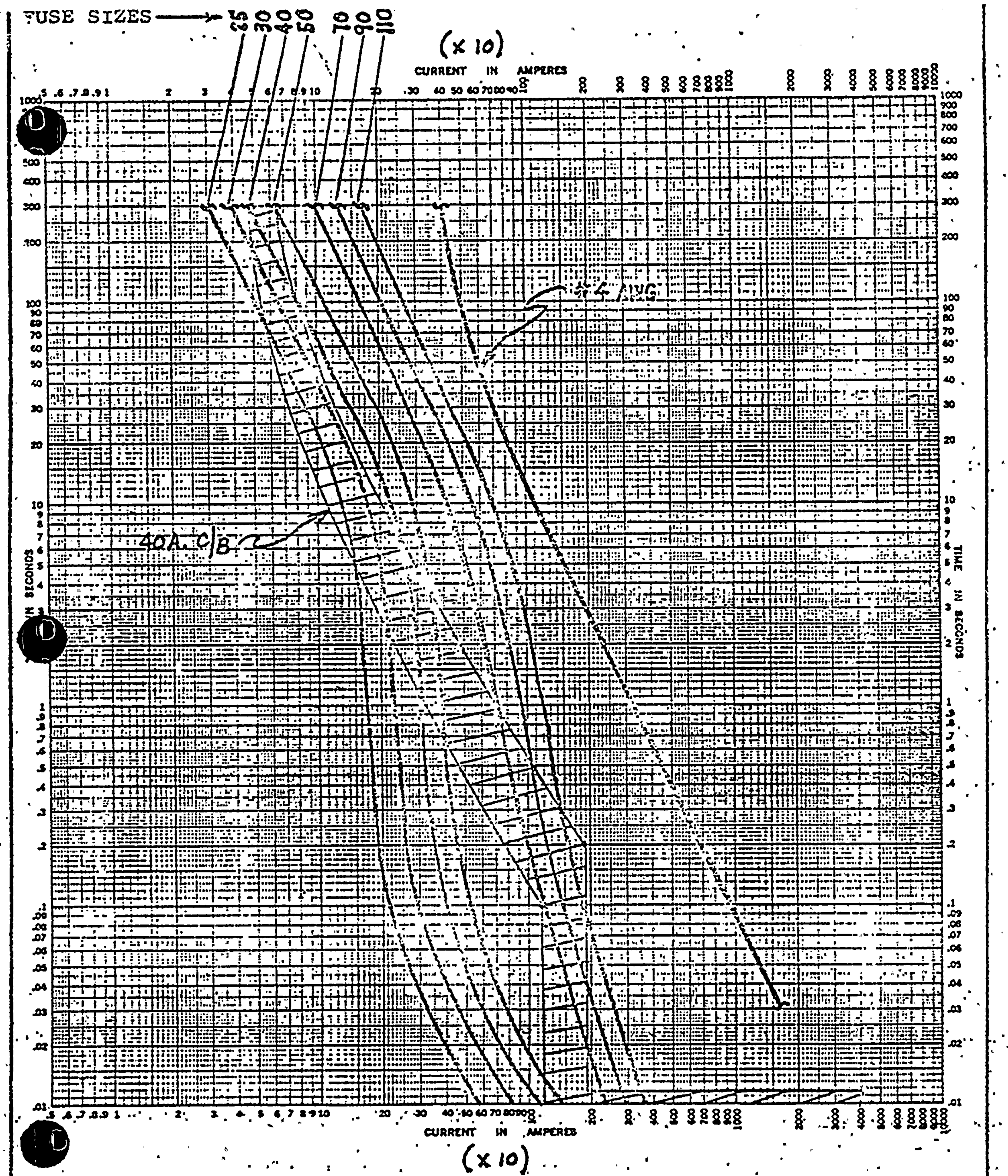
Basis: [illegible] Calc. 2.03.12

[illegible]	CONTAINMENT ELECTRICAL PENETRATIONS PENETRATIONS X-103-A-D —— PRIMARY & BACKUP SHORT CIRCUIT PROTECTION	FIGURE 040.034-3



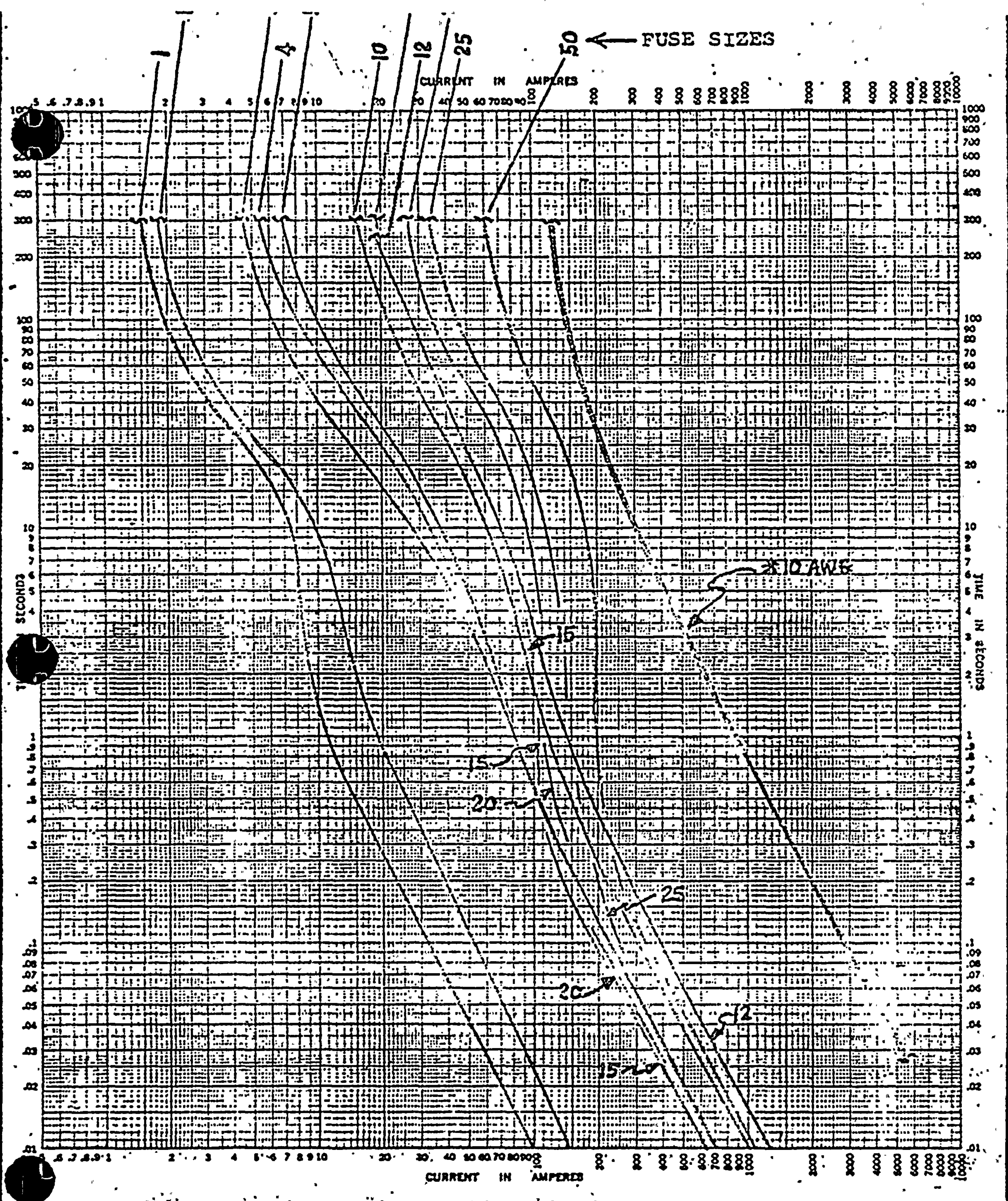
Basis: B&R Calc. 2.03.12

WASHINGTON PUBLIC POWER SUPPLY SYSTEM NUCLEAR PROJECT NO. 2	CONTAINMENT ELECTRICAL PENETRATIONS I^2T COMPARISON (#1/0 AWG CONDUCTOR) CONDUCTOR CURVE VS. DEVICE CURVES	FIGURE 040. 034-4



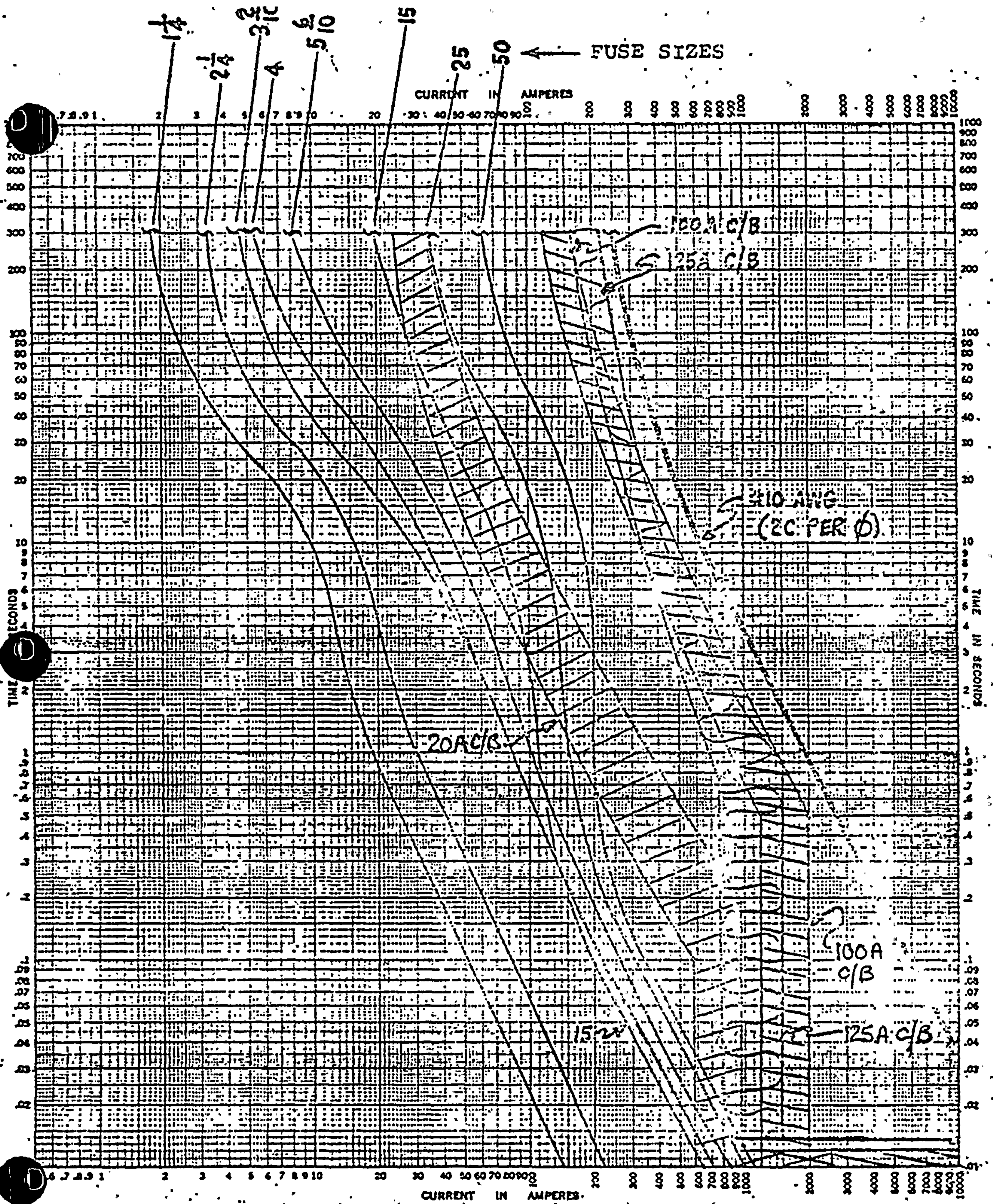
BASIS: B&R CALC. 2.03.12

WASHINGTON PUBLIC POWER SUPPLY SYSTEM NUCLEAR PROJECT NO. 2	CONTAINMENT ELECTRICAL PENETRATIONS I^2T COMPARISON (#4 AWG CONDUCTOR) CONDUCTOR CURVE VS. DEVICE CURVES	FIGURE 040. 034-5



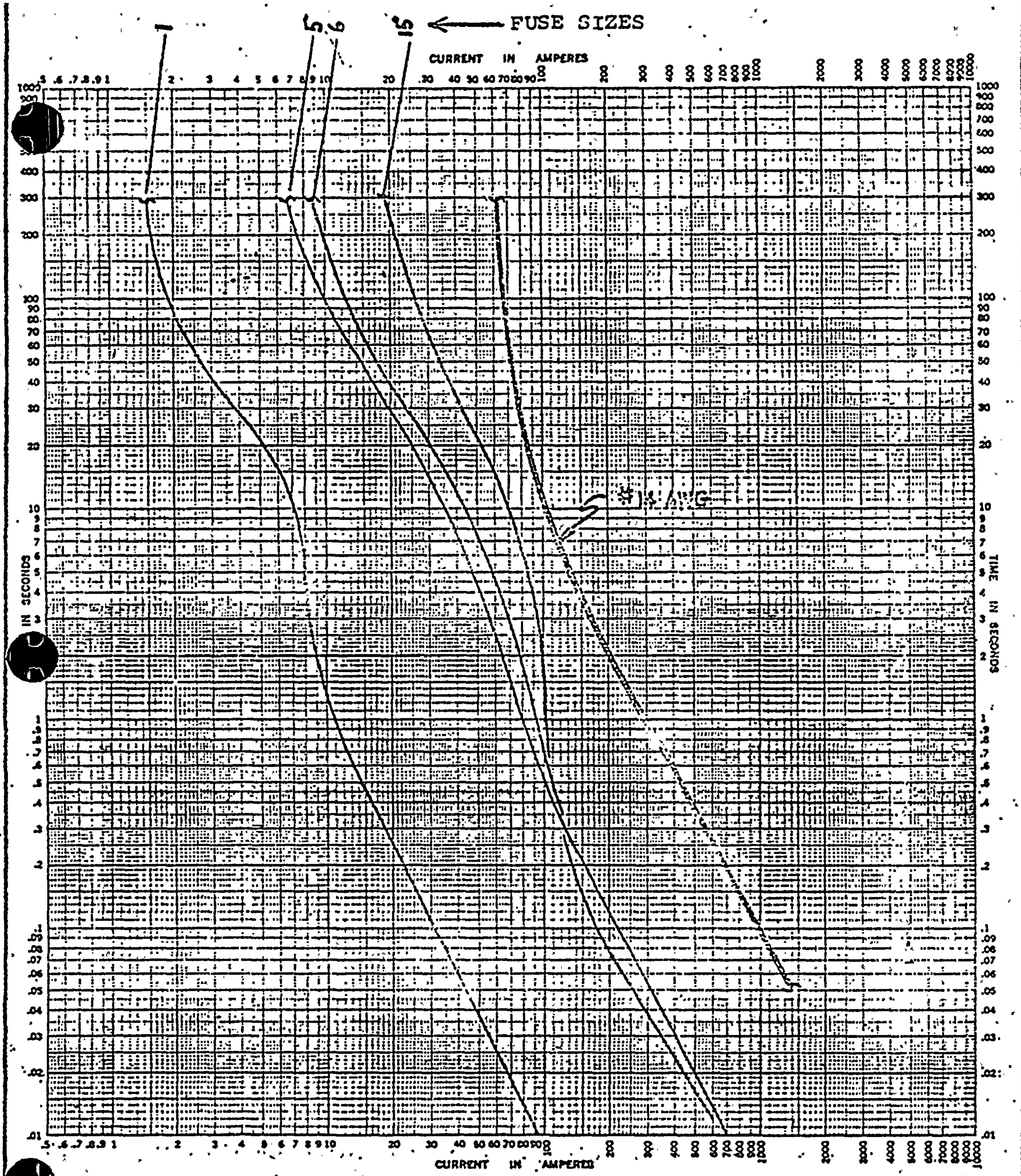
BASIS: B&R CALC. 2.03.12

WASHINGTON PUBLIC POWER SUPPLY SYSTEM NUCLEAR PROJECT NO. 2	CONTAINMENT ELECTRICAL PENETRATIONS I^2T COMPARISON (#10 AWG CONDUCTOR) CONDUCTOR CURVE VS. DEVICE CURVES	FIGURE 040. 034-6



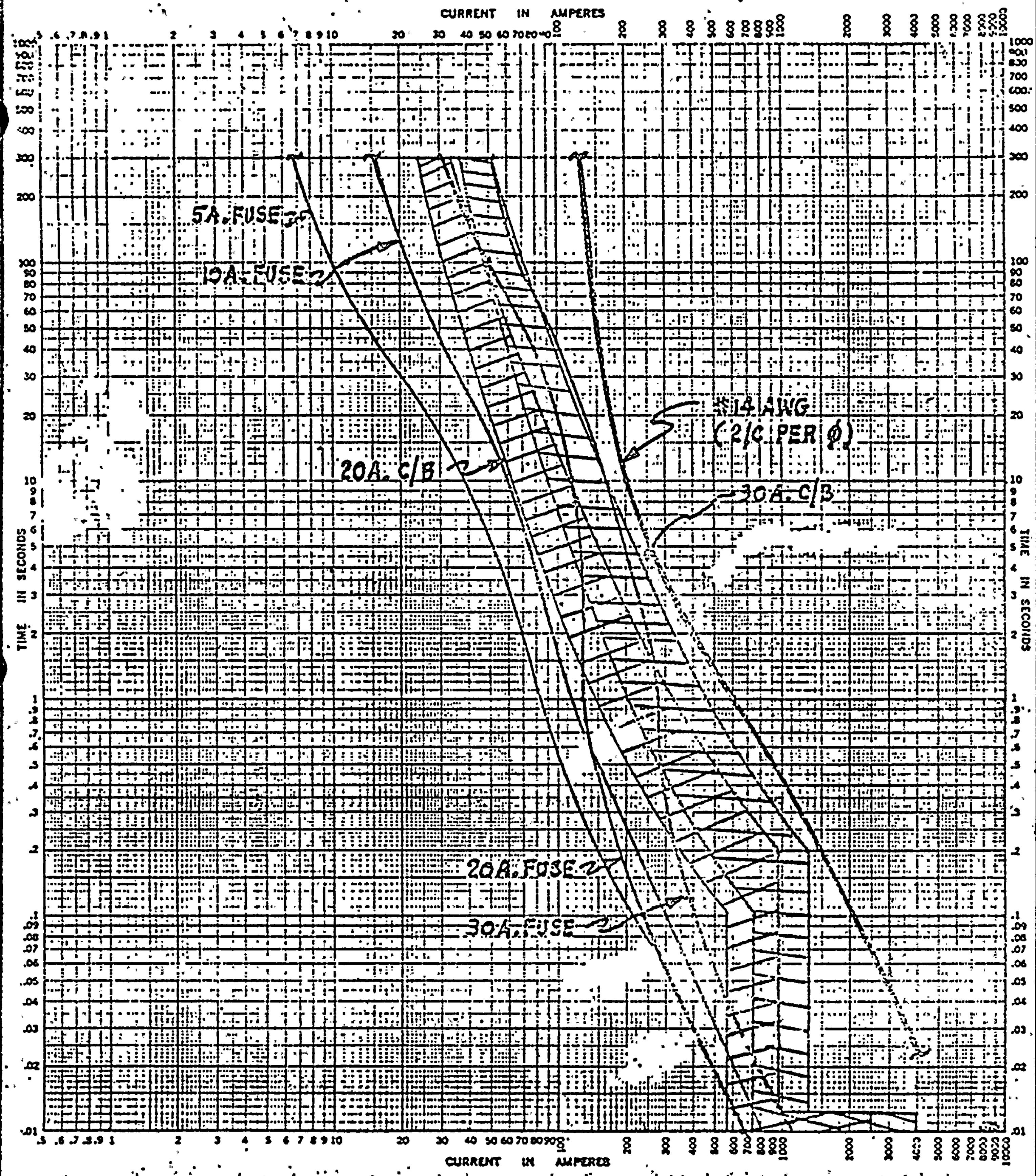
BASIS: B&R CALC. 2.03.12

WASHINGTON PUBLIC POWER SUPPLY SYSTEM NUCLEAR PROJECT NO. 2	CONTAINMENT ELEC. PENETRATIONS - I^2T COMPARISON (2 #10 AWG CONDUCTORS)	FIGURE 040. 034-7



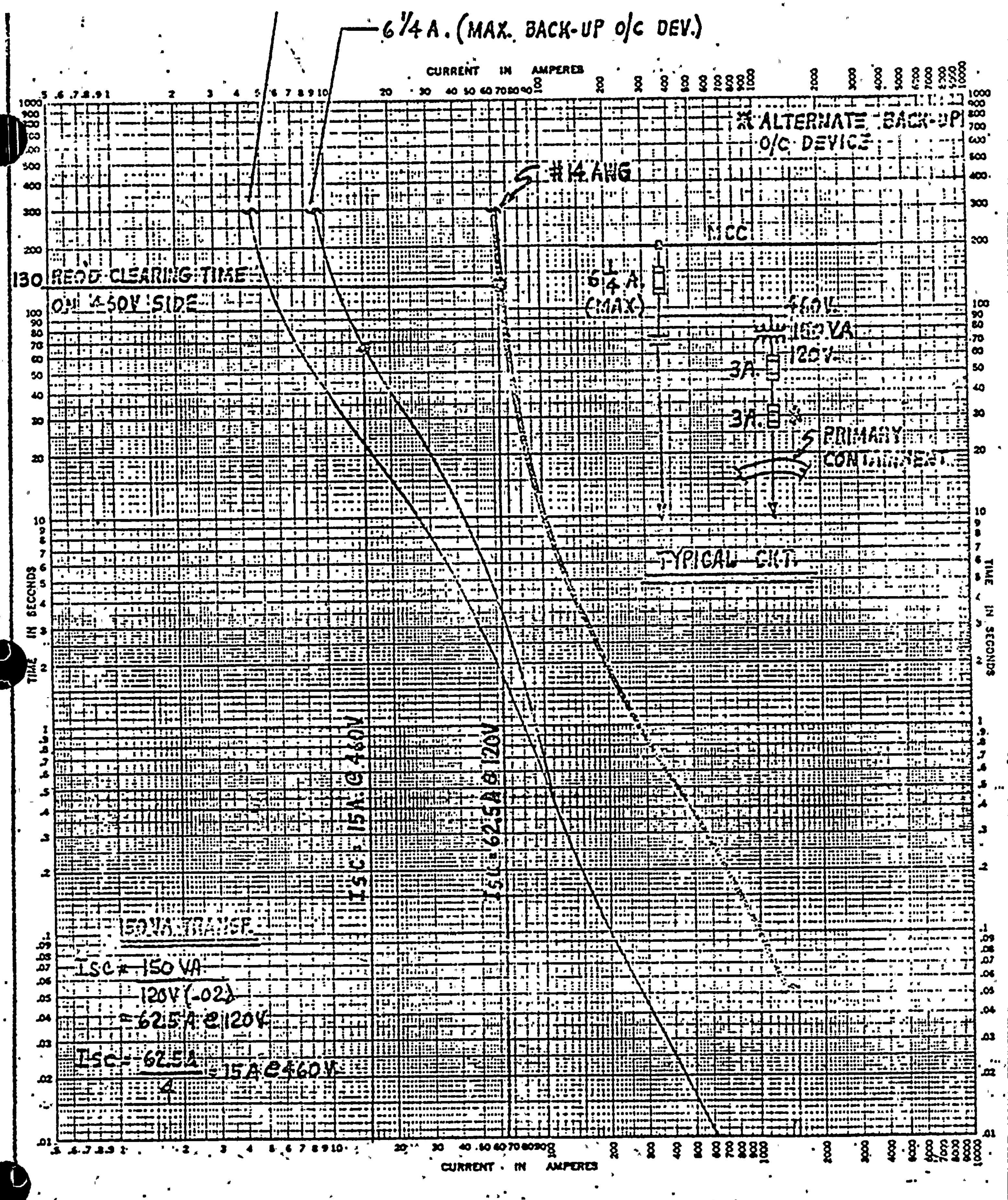
BASIS: B&R CALC. 2.03.12

WASHINGTON PUBLIC POWER SUPPLY SYSTEM NUCLEAR PROJECT NO. 2	CONTAINMENT ELECTRICAL PENETRATIONS I^2T COMPARISON (#14 AWG CONDUCTOR) CONDUCTOR CURVE VS. DEVICE CURVES	FIGURE 040. 034-8



Basis: B&R Calc. 2.03.12

WASHINGTON PUBLIC POWER SUPPLY SYSTEM NUCLEAR PROJECT NO. 2	CONTAINMENT ELECTRICAL PENETRATIONS I^2T COMPARISON (2 #14 AWG CONDUCTORS) CONDUCTOR ~~CURVE VS.~~ DEVICE CURVES	FIGUR 040. 034-



Basis: B&R Calc. 2.03.12

WASHINGTON PUBLIC POWER SUPPLY SYSTEM NUCLEAR PROJECT NO. 2	CONTAINMENT ELECTRICAL PENETRATIONS MCC CTRL CKT TRANSF —— PRIMARY & BACKUP SHORT CIRCUIT PROTECTION	FIGURE 040. 034-1

Q. 040.035

~~Q. 40.35~~

Your description in Appendix C of the FSAR regarding the conformance of the electrical penetrations in the containment of the WNP-2 facility with the staff's positions in Regulatory Guide 1.63, Revision 2, "Electrical Penetration Assemblies in Containment Structures for Light-Water-Cooled Nuclear Power Plants," July 1978, does not provide sufficient information to allow an independent evaluation of your design. Demonstrate in detail how your design of these electrical penetrations is in compliance with the requirements of IEEE Standard 279-71.

Response:

~~WNP-2 design is in compliance with Regulatory Guide 1.63,~~ Revision 0, Position 1. Protective devices for all cables entering penetrations are backed up by similar devices which would clear cable faults in the event a short circuit fault develops and the primary protective device fails to open.

To illustrate this point, assume a feeder failure in the Reactor Recirculation Pump RRC-P-1A feeder where the feeder breaker (RRA) failed to open. In this case, the switchgear bus protective devices will sense the fault and will trip the main bus breaker (N2-5 or S-5). Cable faults inside the ~~penetration would not remain uncleared.~~

replace with attached

INSERT TO PAGE 040.035-1:

WNP-2 design is in compliance with Regulatory Guide 1.63, Revision 0. All circuits which enter penetrations and are subject to I^2T heating due to fault currents are provided with two overcurrent protective devices (primary and backup). In the event the primary overcurrent protective devices fail to clear faults, the backup overcurrent protective devices are designed to limit the I^2T levels experienced by the penetration conductors to values below the conductor I^2T ratings.

The response to Question 040.034 contains specific circuit data for each penetration conductor. Analysis is provided which compares the penetration conductor size and thermal capability to the primary and backup overcurrent protective device fault clearing capabilities, and verifies that penetration conductor I^2T ratings are never exceeded.

6.2.5 COMBUSTIBLE GAS CONTROL IN CONTAINMENT

A containment atmosphere control system is provided to assure containment integrity when hydrogen and oxygen gases are generated following a postulated loss-of-coolant accident (LOCA). The system mixes, monitors and controls both the oxygen and hydrogen concentrations in the containment atmosphere.

6.2.5.1 Design Bases

The design bases for the containment atmosphere control system are as follows:

a. The system is designed in accordance with Regulatory Guide 1.7 (Revision 1 dated September 1976) and General Design Criterion 41 of 10CFR50 Appendix A.

b. In postulating the occurrence of a significant metal-water reaction, as required by Regulatory Guide 1.7 (Revision 1 dated September 1976) it is conservatively assumed that:

1. The peak cladding temperature is no greater than 2200°F as required by 10CFR50.46, (as stated in 6.3, the peak cladding temperature calculated using the NRC approved analytical models would not exceed 2000°F).

2. The cladding temperature distribution is as calculated in Reference 6.2-6.

3. The cladding is at the above peak temperature and distribution from the time of the LOCA until the metal-water reaction has occurred, and although the reaction rate is believed to proceed as predicted by the Baker-Just rate equation, it was conservatively assumed that the hydrogen from the metal-water reaction was generated during a 220 second evolution time at a constant reaction rate, with the resulting hydrogen uniformly distributed within the drywell.

c. As per NRC Question 022.078, the generation of hydrogen from zinc-rich paints and organic materials was considered, using the equation provided (in the text of the referenced question):

$$H_2 \ \frac{SCF}{ft^2 hr} = 4.6 \times 10^5 \ EXP\ (-14{,}500/RT)$$

where: $R = \frac{Cal}{g\ {}^{\circ}K} = 1.986$

T = absolute temperature (degrees kelvin)

d. The hydrogen generated post-LOCA exceeds its control limits of 4% by volume and it is necessary therefore, to inert the primary containment with nitrogen and thus, control oxygen. Primary containment will be inerted to an oxygen concentration of less than or equal to 3.5% by volume during normal plant operation. Furthermore, a recombiner system is provided (as discussed in 6.2.5.7).

e. The recombiner system is remote-manually activated from the main control room at 4.4% oxygen concentration. This occurs at approximately six (6) hours after the LOCA. The pre-LOCA oxygen concentration in containment is limited to 3.5%. This limitation is necessary to ensure an adequate margin is maintained to avoid exceeding the recombiner catalytic bed exist temperature limit of 1150°F. With a 55% recycle rate and a limit of 2.1% oxygen entering the calalytic bed, the maximum allowable oxygen limit in the containment is 4.8% by volume. Initiating recombiner operation at 4.4%, thus, provides adequate margin to meet this recombiner operation limit and the oxygen flamability limit of 5% by volume.

f. Containment sprays, natural turbulence resulting from diffusion and convection caused by the elevated temperatures, and operation of the containment recirculation and head area return fans, if necessary, ensure that no local pocket with greater than 4% hydrogen and 5% oxygen can occur within containment.

g. The recombiner system is composed of two full capacity hydrogen-oxygen recombiners manufactured by Air Products and Chemicals Inc., with associated piping, valves and components. The system is capable of performing its intended function following any single component failure.

h. The recombiner is capable of performing its intended safety function, when necessary, considering the design basis LOCA effects including: (1) internally generated missiles; (2) dynamic effects associated with pipe whip and jet forces from the event; and (3) normal operating and accident caused local enivornmental conditions consistent with the event.

i. The recombiner system is designed in accordance with Seismic Category I requirements.

j. The recombiner system is designed to permit periodic testing and inspection during normal reactor plant operation.

k. The recombiner system is designed to operate remotely from the main control room which includes monitoring of hydrogen and oxygen concentration. The presence of personnel in the vicinity of the operating hydrogen recombiner units is not required.

l. The recombiner system is designed to meet quality assurance, redundancy, power supply and instrumentation requirements for an engineered safety feature system.

m. Since the recombiner system is redundant and is not shared with other nuclear units, transportation of the recombiners is not required.

n. Since all components of the recombiner system are redundant, a containment purge system as a backup is not required. A containment purge system used for other environmental controls is discussed in 6.2.1.1.8.

6.2.5.2 System Design

The containment atmosphere control system provides effective control of the hydrogen and oxygen generated following a postulated LOCA. Piping and instrumentation for the system is shown in Figures 3.2-17, 3.2-15 and 3.2-6. Equipment details are given in Table 6.2-17.

The system consists of the following:

a. An atmosphere mixing system which operates to assure a well mixed atmosphere in both the drywell and suppression chamber. This system consists of: a) the containment spray system which can be actuated approximately 10 minutes after the postulated LOCA, and b) the containment recirculation and head area return fans (see 9.4.11) which start upon receipt of a reactor scram signal.

b. A monitoring system measures the concentration of hydrogen and oxygen in the drywell and suppression chamber atmosphere.

c. Two 100 percent capacity hydrogen-oxygen recombiners; one of which is manually initiated approximately 6 hours after the accident (when oxygen concentration reaches approximately 4.4% by volume) preclude the oxygen concentration from exceeding either recombiner operating limits or containment flamability limits. The recombiners are catalytic type hydrogen-oxygen recombiners.

6.2.5.2.1 Atmosphere Mixing System

The function of the atmosphere mixing system is to provide a well mixed atmosphere in the drywell and suppression chamber.

Utilizing Battelle Northwest experimental results, (see Reference 6.2-7) as a basis for hydrogen and oxygen mixing within the containment, it was concluded that hydrogen or oxygen distribution in the steam nitrogen-oxygen atmosphere would simulate that the iodine fission products (see References 6.2-8 and 6.2-9) and it would be uniform throughout the containment. Accordingly, it is extremely unlikely that an atmosphere mixing system would be required. However, the atmosphere mixing system will be actuated upon receipt of a reactor scram signal to ensure a well mixed environment. In the short-term, the containment spray may be used (see 6.5.2). Periodic operation of this redundant system provides a well mixed atmosphere. In addition to the spray system, the natural convection currents arising from temperature differences between the atmosphere and containment walls and diffusion enhance the atmosphere mixing.

In the long term atmosphere mixing may be provided by the containment recirculation and head area return fans (see 9.4.11). The redundant head area return fans will exhaust any potential hydrogen or oxygen concentration from the head area to the upper drywell area. Redundant recirculation fans in the drywell area will provide proper mixing. Hydrogen and oxygen generated within the wetwell are diluted by essentially hydrogen-oxygen free effluent gas from the containment atmosphere control system recombiners. The mixture is automatically directed back to the drywell through vacuum breaker valves located high in the drywell through vacuum breaker valves located high in the wetwell when wetwell pressure exceeds drywell pressure by 0.15 to 0.35 psi. The drywell suctions for the containment atmosphere control system are located in the upper drywell area as shown in Figures 6.2-32 and 6.2-33.

6.2.5.2.2 Hydrogen and Oxygen Concentration Monitoring System

Both the oxygen and the hydrogen concentrations are continuously monitored during normal operation and following the postulated LOCA, and displayed in the control room. When the oxygen concentration approaches 4.4% by volume (i.e., approximately 6 hours after LOCA), a visual and audible alarm initiates in the control room. The hydrogen-oxygen recombiner is then started manually from the main control room to limit the oxygen concentration in containment to less than 4.8% recombiner operational limit and the 5% flamability limit by volume. (It actually limits it to 4.4%. Note, the recombiner requires a 30-minute warm-up period before containment atmosphere flows through it. See page 6.2-75.) The operation of the hydrogen-oxygen recombiners is independent of the operation of the hydrogen or oxygen concentration monitoring systems.

The accuracy of the hydrogen and oxygen gas analyzers, number and location of sampling points, and instrumentation are discussed in 7.5.1.5.

Shop tests are performed to calibrate and verify instrument accuracy against known gas composition.

Two redundant hydrogen and oxygen concentration monitoring systems are provided. A single failure does not interrupt the gas analysis or alarm annunciation. Provisions are made for electrical and physical divisional separation.

6.2.5.2.3 Hydrogen-Oxygen Recombiner System

The concentration of oxygen in the primary containment (drywell and suppression chamber), following a postulated loss-of-coolant accident, is controlled by the hydrogen-oxygen recombiner system. Each of the two redundant recombiners has a hydrogen-oxygen recombining capability that meets the criteria of Regulatory Guide 1.7 (Revision 1 dated September 1976). The recombination efficiency is essentially 100%. The recombiner system is located outside the primary containment.

The system processes the primary containment atmosphere using a blower. The constant speed blower draws 65.7 scfm from the containment. The gas first enters the water scrubber, where particulate matter, droplets and soluble trace impurities are removed from the gas by direct continuous contact with water in a packed bed column. The gas passes upward through the column and leaves the scrubber at the column top through a demister pad, which prevents entrained water from leaving with the gas. The water, with particulates and dissolved solids, leaves the bottom of the scrubber, and is directed to the suppression pool.

The gas then enters the blower and is compressed to a maximum of 13 psi to provide flow through the system and connecting piping. The gas then enters the preheater, where it is heated to maintain a thermostatically controlled recombiner inlet temperature in the range of 500^{o}F and 550^{o}F.

The heated and diluted gas enters the catalytic recombiner where the hydrogen and a stoichiometric amount of oxygen react on the catalyst bed to form water vapor. The catalyst bed operates between 550^{o}F and 1130^{o}F and provides essentially 100% conversion efficiency. Inlet temperature greater than approximately 500^{o}F prevents degradation of the catalyst bed from halogens that are present in the feed gas.

The hot recombiner effluent gas is then cooled below 150^{o}F in the aftercooler. The condensate is separated in the moisture separator and is routed to the suppression pool. Fifty-five percent of the recombiner discharge is recycled to the blower suction.

During system operation, the containment atmosphere is drawn from the drywell and the recombiner effluent gas is discharged to the suppression chamber. Vacuum breakers in the wetwell have been designed to open when wetwell pressure exceeds drywell pressure by 0.15 to 0.35 psi after which the wetwell atmosphere will begin to be transferred to the drywell. Existing discharge line valves to the drywell and suction line valves from the suppression chamber are key locked closed and their electrical interlocks with the recombiner are disconnected. The key locks are located on a control room panel for remote operation, when and if another mode of operation (based on hydrogen or oxygen concentration) is required.

Physical locations of active containment atmosphere control (CAC) system penetrations into the primary containment are shown on Figures 6.2-32, 33, 34 and 35.

Each hydrogen-oxygen recombiner is skid mounted into an integral package having maximum dimensions of 11 feet long by 9 feet wide and 9 feet high. All pressure containing equipment including piping between components is considered an extension of the containment and is classified Quality Group B (see Table 3.2-1). The skid and the equipment mounted on it meet Seismic Category I requirements. The system is designed to be in accordance with IEEE Std. 279-1971, (Criteria for Protection Systems for Nuclear Power Generating Stations), and IEEE 344-1971 (Guide for Seismic Qualification of Class I Electric Equipment for Nuclear Power Generation Stations). The system is designed to withstand dynamic effects present in the containment (temperature and pressure) following the occurrence of a loss-of-coolant accident. All skid mounted components subjected to the containment gas stream are capable of withstanding the total post LOCA integrated radiation dose of 3.1×10^7 rads. The hydrogen-oxygen recombiner system is used in conjunction with monitoring the atmosphere of the containment for hydrogen and oxygen concentrations. The monitoring system is operated continuously. Readout is provided in the main control room.

Following the postulated LOCA, warmup of the hydrogen-oxygen recombiner system is initiated from remote-manual controls. The system requires a 30 minute warmup period. The system is then placed into operation manually from the main control room. Once placed into operation, the system continues to operate until manually shut down after an adequate safety margin in hydrogen-oxygen concentration is reached. The operation of the system is monitored from the main control room.

The containment atmospheric control system is supplied by redundant Class IE power supplies. Cooling water systems are placed into operation by the same signals which start up the ECCS.

Cooling water for operation of the system (at 88.6^{O}F maximum) is taken from the standby service water system. This cooling water is used for the following purposes:

a. Scrubber (water consumption 1-10 gpm, average 4 gpm): removing particulate matter and condensing steam in the gases from the primary containment and reducing the temperature of these gases, and

b. Aftercooler (water consumption 20-50 gpm); cooling the gases leaving the recombiner prior to returning this mixture of gases and water vapor to the primary containment.

The cooling water supplied to the aftercooler is returned to the standby service water system. The cooling water supplied to the scrubber is discharged to the suppression pool.

All components of the containment atmosphere control system are redundant. Controls include the control panel located in the main control room and the local control panel for each recombiner located in environmentally suitable rooms in the reactor building. All of the functions necessary to control the system are located in the main control room.

6.2.5.2.4 Containment Purge

Containment purge, discussed in 6.2.1.1.8, has the capability for a controlled purge of the containment atmosphere to aid in cleanup, if necessary, per the guidance provided in Section C.4 of Regulatory Guide 1.7.

6.2.5.3 Design Evaluation

Based on the assumptions of the model described below, it is calculated that the oxygen concentration in the drywell eventually reaches approximately 4.8% by volume approximately 44.4 hours after the postulated LOCA if the hydrogen-oxygen recombiner is not in operation. In the wetwell, oxygen reaches approximately 4.8% by volume within about 12.5 hours after the postulated LOCA if the recombiner is not turned on. The recombiner is started; however, when the oxygen concentration approaches approximately 4.4% by volume in the suppression pool (6 hours after the postulated LOCA) to limit the oxygen concentration below 4.4% by volume in both the drywell and suppression pool. Figures 6.2-26 and 6.2-45 show the drywell and suppression chamber oxygen and hydrogen concentration, respectively, as a function of time, with and without operation of the hydrogen-oxygen recombiner system. The input flow to the recombiner is 65.7 SCFM with 55% recycle.

The determination of the time dependent oxygen and hydrogen concentrations in the drywell and suppression chamber atmospheres is based on a two-region model of the primary containment, a drywell and a suppression chamber atmosphere.

The drywell and suppression chamber free volumes contain nitrogen, water vapor and 3.5% oxygen by volume at atmospheric pressure just prior to the postulated LOCA. Gases considered available for oxygen and hydrogen dilution are the non-condensibles and water vapor present during normal operation conditions. Water vapor generated from blowdown is not considered. The radiolytic generation of free oxygen and hydrogen as well as the hydrogen produced from the initial metal-water reaction and from the water reaction with zinc paints and organic materials (as specified in NRC Question 022.078) is added to the total inventory of gases. The pressure in containment is assumed to remain at atmospheric pressure and the temperature history of curve DW of Figures 6.2-3 and 6.2-7, and curve b,c of Figure 6.2-8 were used.

The released fission products, excluding noble gases, that are intimately mixed with the coolant are assumed to be swept out of core as the core cooling waters exit the break and flow by gravity via the downcomers to the suppression chamber.

Hydrogen generated from the metal-water reactor and from water reacting with zinc paints and organic material, and both hydrogen and oxygen generated from core radiolysis are assumed released to the drywell atmosphere and mix homogenously. Hydrogen generated from water reacting with zinc rich paints and organic material, and hydrogen as well as oxygen generated from suppression pool radiolysis are assumed released to the suppression chamber atmosphere and mix homogenously.

After initiating recombiner operation, the suppression chamber atmosphere pressure increases relative to the drywell and pressures are equalized via the vacuum breakers. During the equalization process, some of the hydrogen and oxygen generated in the suppression chamber is transferred to the drywell.

A containment atmosphere control system failure analysis is presented in Table 6.2-18.

6.2.5.3.1 Sources of Hydrogen and Oxygen

6.2.5.3.1.1 Short-Term Hydrogen and Oxygen Generation

In the period immediately after the postulated LOCA, hydrogen is generated by radiolysis, metal-water and metallic paint-water reactions. However, in evaluating short-term hydrogen generation, the contribution from radiolysis is insignificant in comparison with the hydrogen generated by the other two processes.

Similarly, during the same time period, oxygen is generated by radiolysis only. However, the contribution from radiolysis is small compared with the initial 3.5% oxygen concentration within containment prior to the postulated LOCA.

The generation of hydrogen by metal-water reaction is dependent upon the temperature of the cladding at the time the postulated LOCA occurs. Based on LOCA calculations and ECCS performance in concurrence with 10CFR50.46, the extent of metal-water reaction in the BWR/5 core is negligible. The design of the BWR/5 ECCS is such that the peak zircalogy clad temperature is 2000°F; at this temperature, virtually no metal-water reaction occurs, and therefore hydrogen production by this means is insignificant.

However, Regulatory Guide 1.7 (Revision 1 dated September 1976) requires the assumption that the cladding reacts with steam and generates hydrogen. In order to evaluate the consequences of a significant metal-water reaction, it is necessary to make some assumptions regarding the conditions necessary for such an extensive reaction to occur. Regulatory Guide 1.7 (Revision 1 dated September 1976) assumptions cannot be related to credible degraded conditions of the ECCS.

Therefore, in order to present a consistent, even though not probable, set of conditions by which the metal-water reaction could occur, the following assumptions were made:

a. Conservative core temperature distribution.

b. The peak cladding temperature is no greater than 2200°F as required by 10CFR50.46. (As stated in 6.3, the peak cladding temperature calculated using the NRC approved analytical models would never exceed 2000°F.)

c. The fuel cladding achieves peak cladding temperature and distribution discussed above immediately after the postulated LOCA and remains there until a metal-water reaction equivalent to 0.23 mil cladding penetration depth has occurred. The mass of Zircalogy fuel cladding assumed to react is 587 pounds.

d. A 220-second evolution time at a constant reaction rate is assumed, with the resulting hydrogen uniformly distributed within the drywell.

Approximately 5000 scf of hydrogen is generated. This is shown as a straight line in Figure 6.2-30. The amount of hydrogen in the reactor coolant system is 0.08 lbs.

6.2.5.3.1.2 Long-Term Hydrogen and Oxygen Generation

The generation of hydrogen and oxygen due to radiolysis begins immediately after the postulated LOCA.

The total fission product decay power as a fraction of operating power used to determine the radiolysis source terms (titled "B&R Total") appears in Figure 6.2-27. The "B&R Total" curve is equal to or more conservative than the corresponding ANS 5.1 curve (including uncertainties) for times greater than 500 seconds. Hydrogen generation by radiolysis due to fission product decay energy is not significant in comparison with other sources of hydrogen prior to this time as shown in Figure 6.2-30. This becomes clear upon comparison of these two curves. The curve is based on three years continuous operation at core rated power. The beta, gamma ray, and beta plus gamma ray energy release rates used to establish Figure 6.2-27 appear in Figure 6.2-28. The integrated energy releases as a function of time appear in Figure 6.2-29.

The generation of hydrogen and oxygen due to radiolysis is calculated in conformance to the model presented in Table 1 of Regulatory Guide 1.7 (Revision 1 dated September 1976). The integrated production of hydrogen and oxygen gas within the drywell and suppression chamber appears in Figure 6.2-30 and 6.2-44, respectively.

6.2.5.3.1.3 Corrosion and Decomposition of Containment Materials

The corrosion and decomposition of containment materials was considered as a potential source of hydrogen. The corrosion of aluminum, zinc base paints, and the radiolytic and chemical decomposition of organic materials located either in the drywell or suppression chamber was evaluated as a potential source of hydrogen.

The evaluation is included in the response to NRC Question 022.048. The results are taken into account in Figures 6.2-26 and 6.2-30.

6.2.5.4 Testing and Inspections

The hydrogen-oxygen recombiners and the associated instrumentation are periodically inspected and tested to ensure reliable operation.

Each hydrogen-oxygen recombiner system has been shop tested. Written test procedures and acceptance criteria were established for all tests. Test results were recorded in performance records. The full scale performance tests were accomplished by placing each unit in operation, starting the hydrogen recombiner and allowing atmospheric air, hydrogen and steam to flow through the unit. A flow of a least 155 SCFM was maintained throughout all tests. At the simulated environmental conditions (temperature, pressure and hydrogen at 0.5 to 4% by volume) following a postulated LOCA (Figures 6.2-6 and 6.2-7, curve c).

no change

(through the recombiner)

A satisfactory temperature rise of approximately 140°F for each 1% of hydrogen reaction, ~~through the recombiner~~ indicates proper operation. A flowmeter and pressure indicators at the blower suction and discharge were used to determine blower performance. The sampling facilities upstream and downstream of the hydrogen recombiner were used to determine the reaction efficiency of the recombiner by routing both gas streams through a chromatograph. A full set of measurements were taken at a minimum of every 2 hours for each test run. At no time was the efficiency of recombination less than 99%. The reaction temperature and the recombiner inlet and outlet temperature were recorded.

Detailed information relating to these tests has been submitted to the NRC by separate transmittal.

Each active component of the containment atmosphere control system is testable during normal reactor operation.

The containment atmosphere control system is tested periodically as described in Chapter 16 to assure that it operates correctly. Preoperational tests of the containment atmosphere control system are conducted during the final stages of plant construction prior to initial startup (see Chapter 14). These tests assure correct functioning of all controls, instrumentation, recombiners, piping and valves. System reference characteristics, such as pressure differentials and flow rates, are documented during the preoperational tests and are used as base points for measurements in subsequent operational tests. Inservice inspection is performed as described in 6.6.

6.2.5.5 Instrumentation Requirements

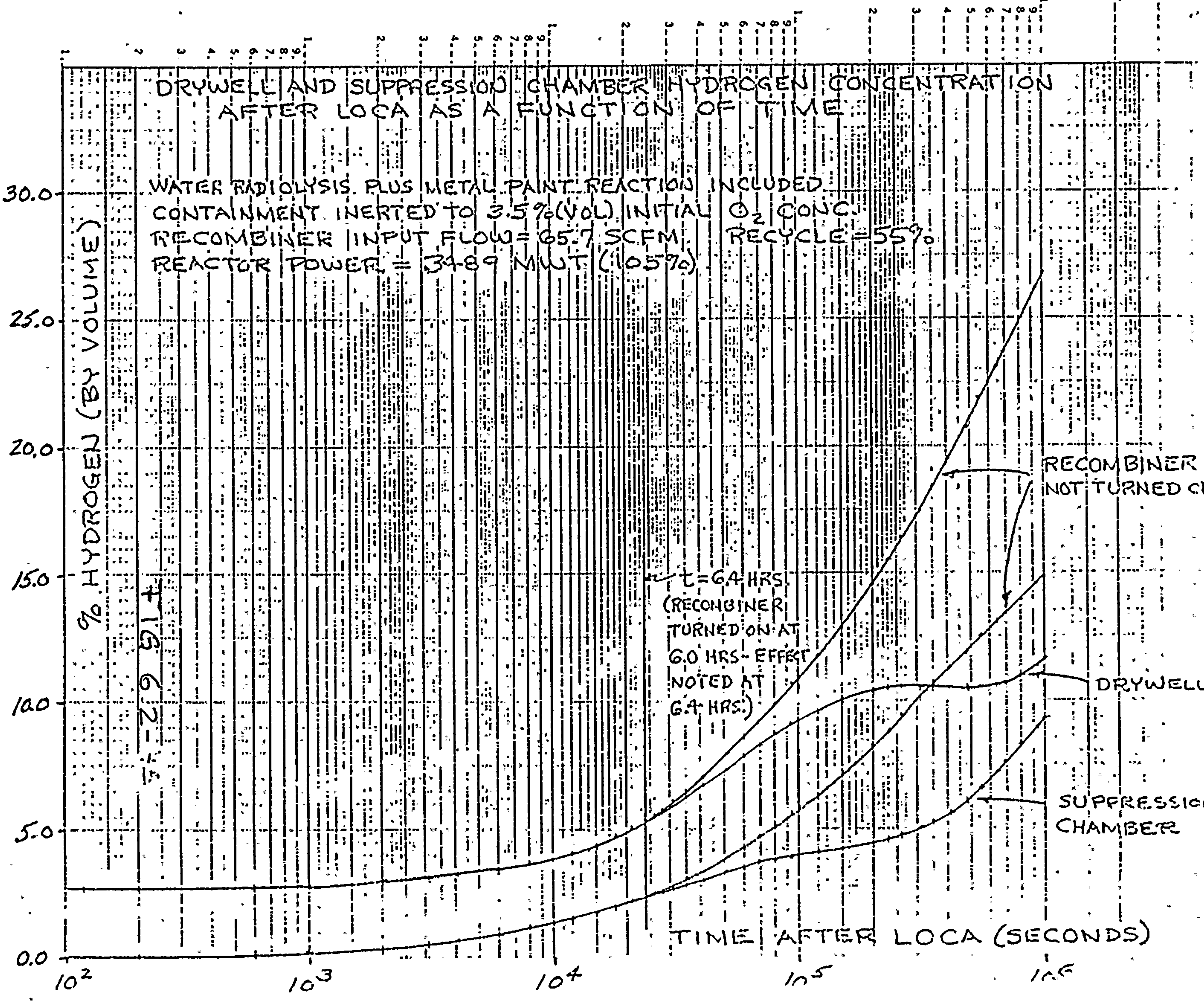
Refer to 7.3.1.1.8 and 7.5.1.

6.2.5.6 Materials

The pressure retaining piping, process components and valve bodies between the primary containment and the hydrogen recombiner skids are built of carbon steel. The valve plugs are built of stainless steel. The pressure retaining piping, process components and valves in the hydrogen recombiner skids are built of 300 series stainless steel. Carbon steel is used for the blower container. There are no materials in contact with the process gas other than the noble metal catalyst on its ceramic base, carbon steel blower and enclosure and the steel piping, valves and vessels. These materials do not offer any radiolytic or pyrolytic decomposition products to interfere with the containment atmosphere control system's performance or that of any other engineered safety system.

K•E SEMI-LOGARITHMIC 3 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO. MADE IN USA

46 6212



BURNS AND ROE, INC.

W.O. No. ______ Date 1/28/82 Page No. ______
Drawing No. N/A Calc. No. ______ Book No. 5-34-10 Sheet ______ of ______
By ______ Checked ______ Approved ______
Title OXYGEN CONCENTRATION - INERTED CONTAINMENT

K-E SEMI-LOGARITHMIC 5 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO. MADE IN U.S.A.

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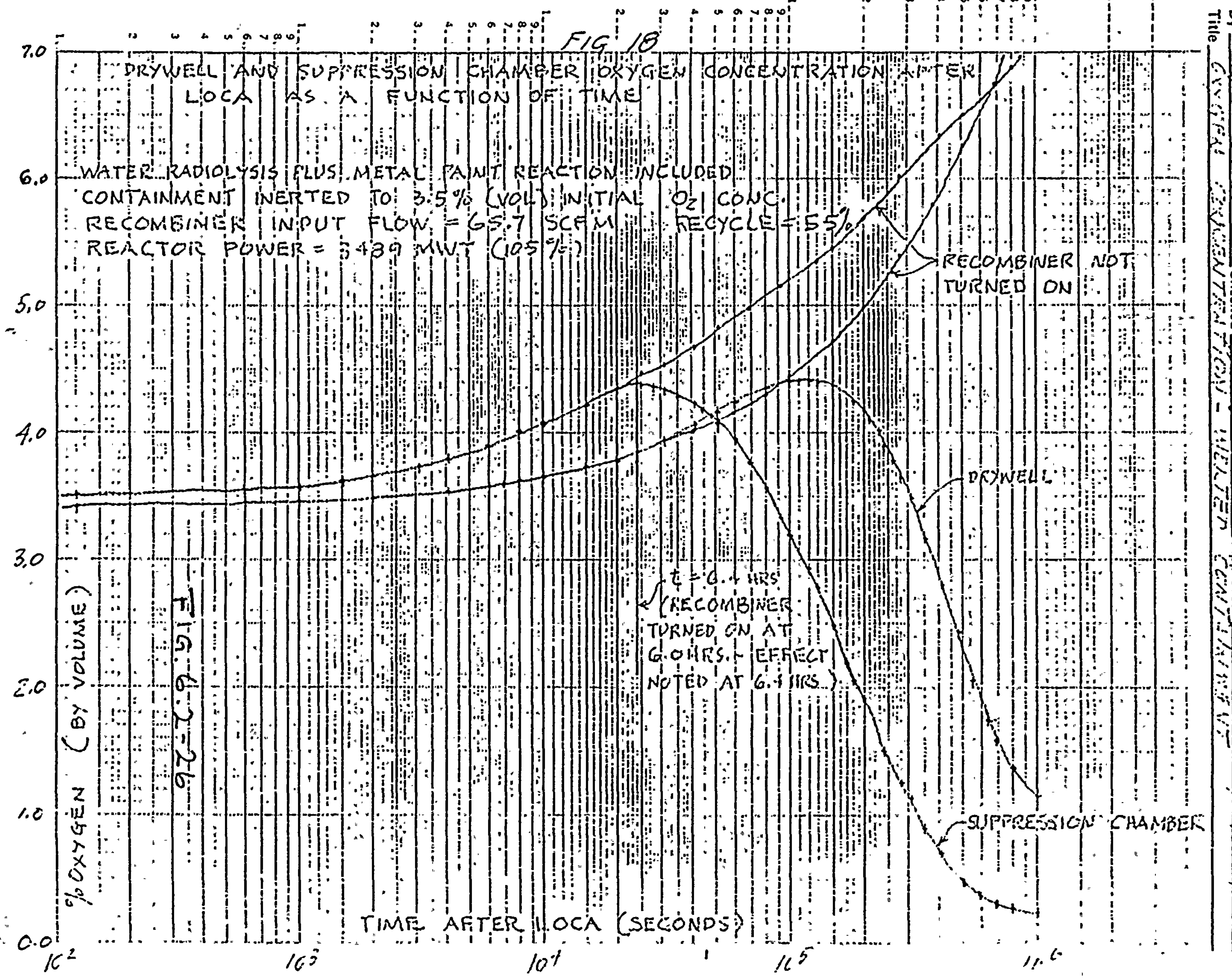

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Title ______ Approved ______ Page No. 41
Sheet ______ of ______

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Drawing No. ___ Calc. No. 5.34.12 Sheet 7A Calc. No. ___ Sheet ___ of ___
By ___ Checked ___ Approved ___ Checked ___ Approved ___
Title O_2 Concentration - Inerted Containment

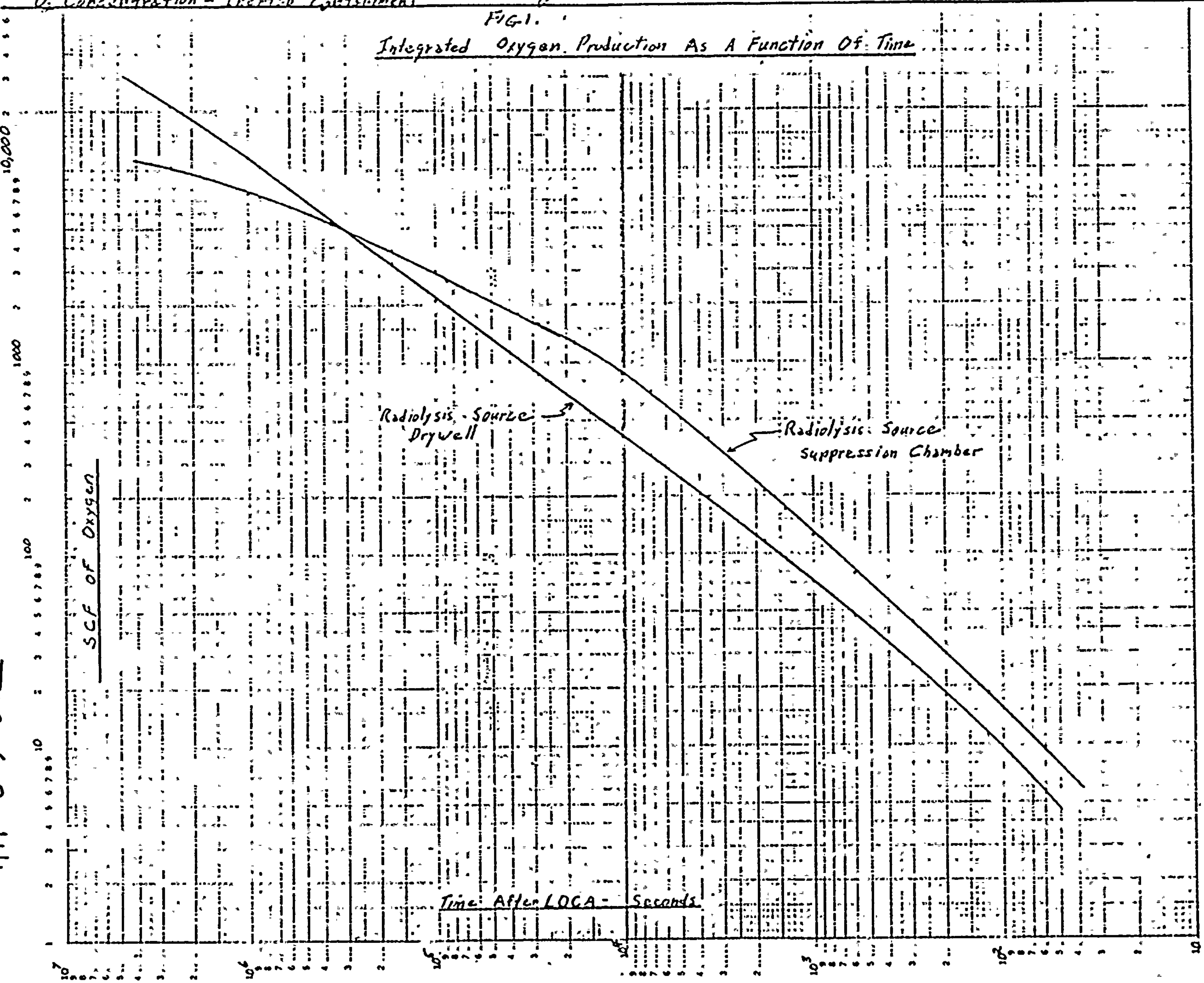


Fig. 6.2-44

46 7522

K+E LOGARITHMIC 3 x 5 CYCLES KEUFFEL & ESSER CO.

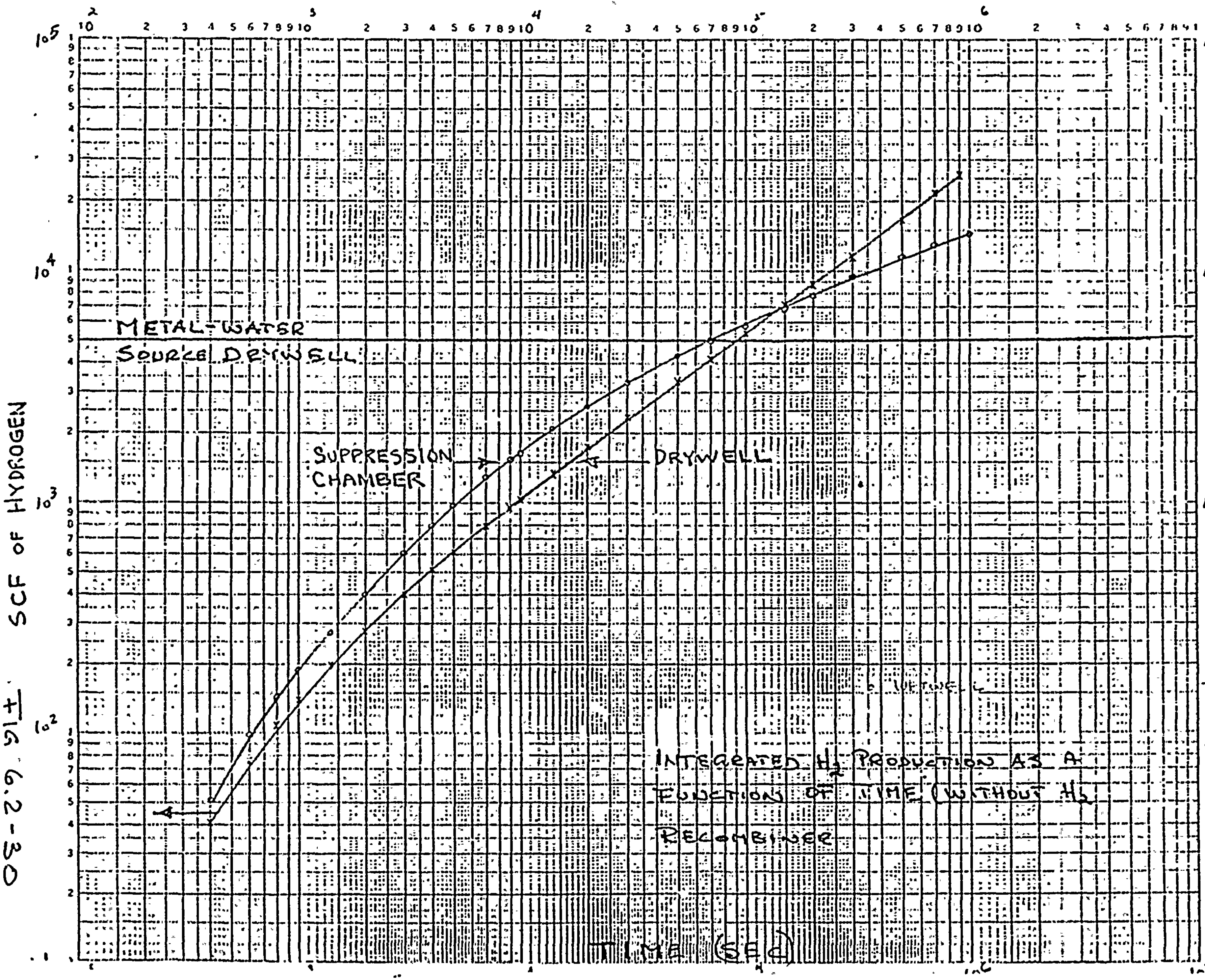


FIG 6.2-30

APPENDIX F

115

Q. 022.048

Response:

The WNP-2 design requirement as described in this response has been replaced by the equation in question 22.078 and described in revised 6.2.5. This letter formulation is more conservative than the one previously used by the WNP-2 project.

A review of tests conducted to date on aluminum, zinc or zinc coatings, indicates that several factors which would tend to mitigate the evolution of hydrogen following a postulated loss-of-coolant accident have not been reported or have not been investigated. A brief explanation, therefore, is required to substantiate the rationale for the conclusions drawn in this response.

Question 022.048 asks a question with respect to the corrosion of aluminum and the subsequent evolution of hydrogen. The water chemistry of WNP-2 is such that the water is free from additives and is neutral, i.e., a pH of 6.5-7.5.

With reference to aluminum, Uhlig[1] states: "Aluminum base alloys are appreciably affected by distilled water even at elevated temperatures (up to 180°C (350°F) at least). Furthermore, distilled water is not contaminated by contact with most aluminum base alloys."

Uhlig[2] states: "Condensate from steam boilers, if free from carry-over of water from the boiler, is similarly inert to aluminum base alloys. Thus, either wrought or cast aluminum alloys are used successfully for steam radiators as unit heaters. Where aluminum alloys are used it is desirable to install suitable traps in the steam lines, since entrapped boiler water, especially if alkaline water treating compounds are employed, may be corrosive."

Uhlig[3] states: "Steam causes a definite protective white film to form on aluminum alloys. This film is highly protective at temperatures up to 180° to 350°C (350° to 500°F). At temperatures above this range, under some conditions at least, the steam reacts with aluminum with the formation of aluminum oxide and hydrogen."

Experimental data from the aforementioned references indicate that aluminum and aluminum alloys are nonreactive with pure water and/or steam at temperatures up to and including 500°F. Aluminum rapidly forms a protective oxide film, in oxygen containing atmospheres, which is insoluble in neutral water or steam. Since the containment is noninerted, there is free access to oxygen during operation and has been throughout construction. The oxygen has reacted with the aluminum to form the protective tight adherent water insoluble and nonreacting film, which eliminates the case of hydrogen evolution at the temperature and/or environment present during or following a postulated loss-of-coolant accident.

On concrete 33,000 sq. ft. - approx. 24,750 lbs.

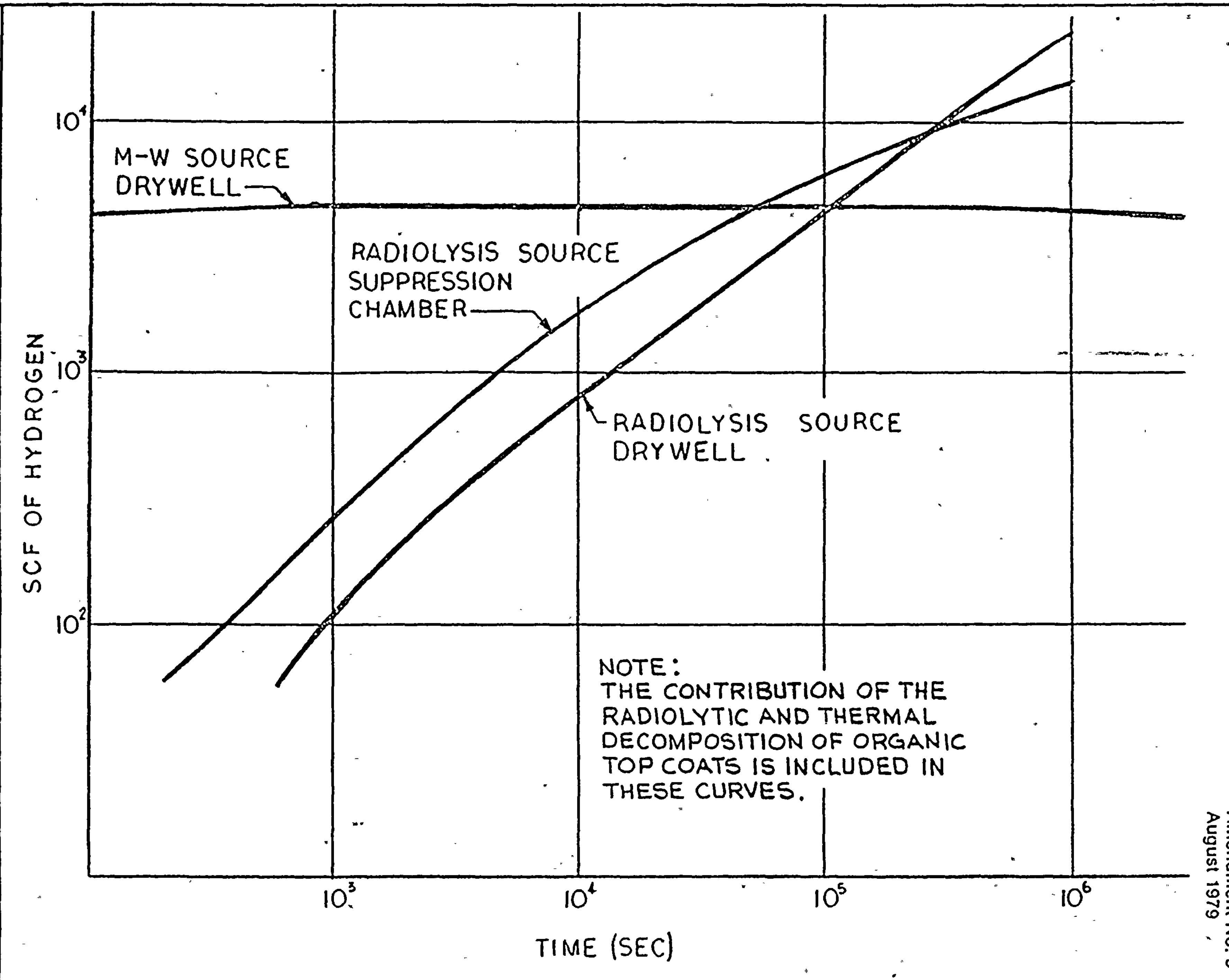
d. The graphic representation of the total hydrogen concentration inside containment as a function of time is shown in Figure ~~6.2-26.~~ 022.048-1

e. The graphic representation of the contribution of each source of hydrogen as a function of time is shown in Figures ~~6.2-26~~ 022.048-1 and ~~6.2-30.~~ 022.048-2

f. The periodic surveillance that will be done to demonstrate the operability of the hydrogen recombiner and the backup purge system is discussed in 6.2.1.1.8 and 6.2.5.4.

g. The location of the hydrogen sample points in the drywell and the suppression chamber and the suction and discharge points of the combustible gas control system with respect to nearby structures and equipment has been answered in response to Question 022.25.

See, in addition, revised 6.2.5 of the FSAR.

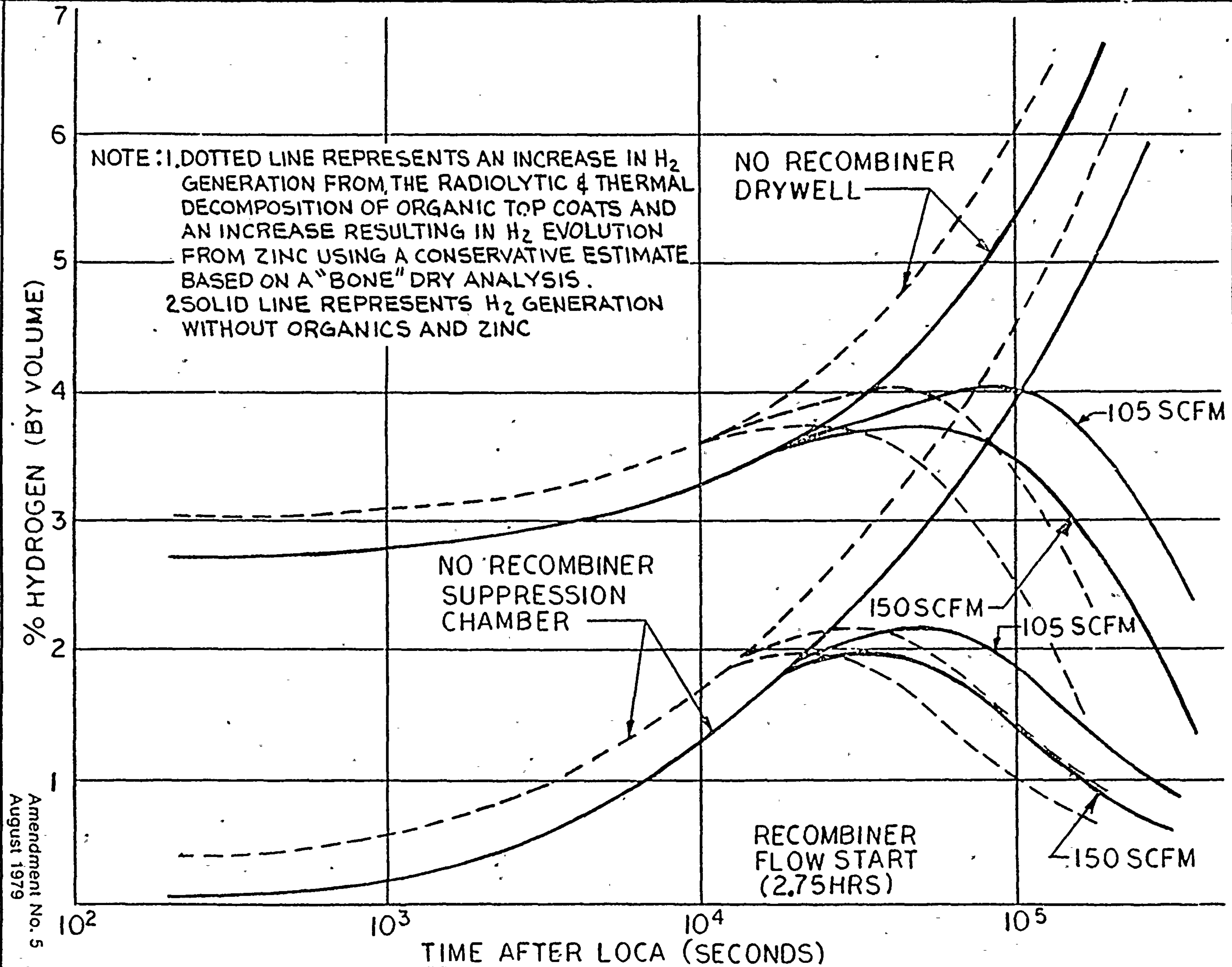


WASHINGTON PUBLIC POWER SUPPLY SYSTEM
NUCLEAR PROJECT NO. 2

INTERGRATED HYDROGEN PRODUCTION AS A FUNCTION OF TIME (WITHOUT HYDROGEN RECOMBINING)

FIGURE 6.2-30
Q22.04-2

Amendment No. 5
August 1979



Amendment No. 5
August 1979

WASHINGTON PUBLIC POWER SUPPLY SYSTEM
NUCLEAR PROJECT NO. 2

DRYWELL & SUPPRESSION CHAMBER HYDROGEN CONCENTRATION AFTER LOCA AS A FUNCTION OF TIME

FIGURE ~~6.2-26~~ 022-0161

Q. 022.078

Your response to item 022.048 cited several references and tests conducted to determine the evolution of hydrogen following a postulated LOCA. We are currently undertaking additional effort to better define the various sources of hydrogen, including zincrich paints and organic materials. The following equation, which describes the hydrogen generation rates as a function of temperature, is currently used by the staff for its confirmatory analysis.

$$H_2 \text{ (SCF/sq. ft. - hr.)} = 4.6 \times 10^5 \exp(-14{,}500/RT)$$

where: R (cal/gm K) = 1.986
T = absolute temperature (degrees Kelvin)

We are currently reviewing the information presented in your response to question 022.048. As an acceptable alternative approach to facilitate the staff review, provide a sensitivity study based on the above equation which shows that hydrogen concentration inside the containment will not exceed our acceptance criterion of 4 volume percent. In responding to this question, indicate the time interval following a postulated LOCA at which the hydrogen recombiner should be turned on and the amount of time needed to heat up the recombiner.

Response:

~~As stated in Washington Public Power Supply System letter number GO2-81-181, G. D. Bouchey to D. G. Eisenhut, "Inerting of the WNP-2 Containment", dated July 16, 1981, the Supply System has committed to inert the WNP-2 containment. Since it is the oxygen concentration rather than the hydrogen concentration that must be controlled in an inerted containment, work is currently in progress to examine post-LOCA oxygen generation and to evaluate the recombiner performance in an inerted atmosphere. A detailed discussion of recombiner performance will be supplied with the January 1983 containment inerting submittal as noted in the referenced letter. For this reason and the fact that the parameters and assumptions concerning hydrogen evolution are the subject of rule-making, sensitivity study does not need to be provided as requested.~~

See revised 6.2.5