

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.5.2	Perform a CHANNEL FUNCTIONAL TEST of each ESFAS channel.	30 days on a STAGGERED TEST BASIS
SR 3.3.5.3	Perform a CHANNEL FUNCTIONAL TEST of each ESFAS channel bypass removal function.	120 days
SR 3.3.5.4	Perform a CHANNEL CALIBRATION of Function 5, Recirculation Actuation Signal, including bypass removal functions.	18 months
SR 3.3.5.5	Perform a CHANNEL CALIBRATION of each ESFAS channel, with the exception of Function 5, including bypass removal functions.	24 months
SR 3.3.5.6 @	Verify ESF RESPONSE TIME is within limits.	24 months on a STAGGERED TEST BASIS
SR 3.3.5.7	Perform a CHANNEL FUNCTIONAL TEST on each automatic bypass removal channel.	Once within 120 days prior to each reactor startup

@ Verification of the RESPONSE TIME of 30 subgroup relays is not applicable until return to Mode 4 from the Unit 3 Cycle 9 refueling outage with the additional commitments made in Edison letter dated February 18, 1997. The safety justification for not performing this testing is included in the February 18, 1997 letter.

UNIT 2 ESF TRAIN A  
RESPONSE TIMES (SEC)

TRAIN A ESFAS ACTUATION RELAY AND COMPONENTS										SEQUENCE		TOTAL		TS MAX		ALLOWABLE	
RELAY	ACTUATION	Equip. ID	Test Typ	DESCRIPTION		Act_Type	DIESEL	LOGIC	K-RELAY	DELAY	DEVICE						
K306	CCAS	2HV6366	OPEN	CCW TO EMERGENCY COOLING UNIT 2E401 CONTAINMENT ISOLATION VALVE		MO	7.980	0.398	0.000		10.700	19.078	23.200	4.122			
		2HV6367	OPEN	CCW FROM EMERGENCY COOLING UNIT 2E401 CONTAINMENT ISOLATION VALVE		MO	7.980	0.398	0.000		10.600	18.978	23.000	4.022			
		2HV6370	OPEN	CCW TO EMERGENCY COOLING UNIT 2E399 CONTAINMENT ISOLATION VALVE		MO	7.980	0.398	0.000		10.800	19.178	23.000	3.822			
		2HV6371	OPEN	CCW FROM EMERGENCY COOLING UNIT 2E399 CONTAINMENT ISOLATION VALVE		MO	7.980	0.398	0.000		10.900	19.278	23.000	3.722			
K202	CIAS	2HV6218	CLOSE	RC PUMP BLEED OFF TO VCT		AO	N/A	0.400	0.000		3.800	4.200	40.000	35.800			
		2HV6205	CLOSE	REGEN HT EXCH TO LETDOWN HT EXCH		AO	N/A	0.400	0.000		3.000	3.400	40.000	36.600			
		2HV6920	CLOSE	CONTAINMENT NORM COOL SUP ISO VV		AO	N/A	0.400	0.000		9.400	9.800	40.000	30.200			
		2HV6921	CLOSE	CONTAINMENT NORM COOL RET ISO VV		AO	N/A	0.400	0.000		6.500	6.900	40.000	33.100			
K204	CIAS	2HV7801	CLOSE	CNITMT AIRBORNE RAD MONITOR TR A ISOL		SO	N/A	0.400	0.000		0.100	0.500	1.900	1.400			
		2HV7802	CLOSE	CNITMT AIRBORNE RAD MONITOR TR A ISOL		SO	N/A	0.400	0.000		0.100	0.500	1.900	1.400			
		2HV7816	CLOSE	CNITMT AIRBORNE RAD MONITOR TR A ISOL		SO	N/A	0.400	0.000		0.300	0.700	1.900	1.200			
		2HV5388	CLOSE	INSTRUMENT AIR ISOLATION		AO	N/A	0.400	0.000		10.900	11.300	40.000	28.700			
K205	CIAS	2HV7810	CLOSE	CNITMT AIRBORNE RAD MONITOR TR A ISOL		SO	N/A	0.400	0.000		0.100	0.500	1.900	1.400			
		2HV7811	CLOSE	CNITMT AIRBORNE RAD MONITOR TR A ISOL		SO	N/A	0.400	0.000		0.100	0.500	1.900	1.400			
		2HV7259	CLOSE	CONTAINMENT ISOL SI TANK VENT HDR		AO	N/A	0.400	0.000		3.800	4.200	40.000	35.800			
		2HV9823	CLOSE	CNITMT MINI PURGE SUP A374 ISO		AO	N/A	0.400	0.000		2.330	2.730	5.900	3.170			
K208	CIAS	2HV9825	CLOSE	CNITMT MINI PURGE EXH A060 ISO		AO	N/A	0.400	0.000		3.350	3.750	5.900	2.150			
		2HV8205	CLOSE	E088 GEN MAIN STM ISOLATION ON		HY	N/A	0.400	0.000		7.200	7.600	8.900	1.300			
		2HV4048	CLOSE	STEAM GEN E088 FW ISOL VALVE		EH	N/A	0.400	0.000		7.800	8.200	10.900	2.700			
		2HV4052	CLOSE	STEAM GEN E089 FW ISOL VALVE		EH	N/A	0.400	0.000		7.600	8.000	10.900	2.900			
K209	CIAS	2HV8204	CLOSE	E089 GEN MAIN STM ISOLATION OR		HY	N/A	0.400	0.000		6.500	6.900	8.900	2.000			
		2HV0511	CLOSE	PRESSURIZER VAPOR SAMPLE CNITMT ISOL		AO	N/A	0.400	0.000		6.500	6.900	40.000	33.100			
		2HV0513	CLOSE	PRZP SURGE LN LK SAMPLE CNITMT ISOL		AO	N/A	0.400	0.000		2.640	3.040	40.000	36.960			
		2HV0514	CLOSE	QUENCH TANK VAPOR SAMPLE CONTAINMENT ISOLATION VALVE		MO	7.980	0.400	0.000		22.200	30.580	50.900	20.320			
K210	CIAS	2HV0516	CLOSE	REACTOR COOLANT DRAIN TANK SAMPLE CONTAINMENT ISOLATION VALVE		MO	7.980	0.400	0.000		8.200	16.580	50.900	34.320			
		2HV5803	CLOSE	CONTAINMENT SUMP TO RADWASTE SUMP VALVE		MO	7.980	0.400	0.000		34.600	42.980	50.900	7.920			
		2HV0509	CLOSE	REAC CLNT HOT LEG SAMPLE CNITMT ISOL		AO	N/A	0.400	0.000		3.400	3.800	40.000	36.200			
		2HV9304	OPEN	CONTAINMENT SUMP SUCTION INSIDE CONTAINMENT ISOLATION VALVE, TRAIN B		MO	7.980	0.400	0.000		29.700	38.080	50.700	12.620			
K212	CIAS	2HV4047	CLOSE	STM GEN E088 FW BLOCK VALVE		EH	N/A	0.400	0.000		9.600	10.000	10.900	0.900			
		2HV1106	CLOSE	STM GEN E088 FW BYPASS VALVE		AO	N/A	0.400	0.000		6.900	7.300	10.900	3.600			
		2HV6223	CLOSE	CCW NON-CRITICAL LOOP CONTAINMENT SUPPLY ISOLATION VALVE		MO	7.980	0.400	0.000		11.100	19.480	40.000	20.520			
		2HV6236	CLOSE	CCW NON-CRITICAL LOOP RETURN FROM CONTAINMENT VALVE		MO	7.980	0.400	0.000		10.200	18.580	40.000	21.420			
K307	CIAS	2HV6212	CLOSE	CCW DISCHARGE TO NON-CRITICAL LOOP		AO	N/A	0.400	0.000		9.500	9.900	20.900	11.000			
		2HV6218	CLOSE	CCW PUMP SUCTION FROM NON-CRITICAL LOOP		AO	N/A	0.400	0.000		10.100	10.500	20.900	10.400			
		2HV4052	CLOSE	STEAM GEN E089 FW ISOL VALVE		EH	N/A	0.400	0.000		7.600	8.000	10.900	2.900			
		2HV8204	CLOSE	E089 GEN MAIN STM ISOLATION OR		HY	N/A	0.400	0.000		6.500	6.900	8.900	2.000			
K314	CIAS	2HV8205	CLOSE	E088 GEN MAIN STM ISOLATION ON		HY	N/A	0.400	0.000		7.200	7.600	8.900	1.300			
		2HV4048	CLOSE	STEAM GEN E088 FW ISOL VALVE		EH	N/A	0.400	0.000		7.800	8.200	10.900	2.700			
		2HV9367	OPEN	CONTAINMENT SPRAY TRAIN A CONTAINMENT ISOLATION VALVE		MO	7.980	0.223	0.000		9.100	17.303	23.000	5.697			
		2HV4763	CLOSE	AFWP 2P141 TO SG 2E009 DISCH VALVE BYPASS		EH	N/A	0.572	0.000		22.500	23.072	40.900	17.828			
K211	EFAS-1	P-141		AUX FEED PUMP			7.980			29.830				2.690			
		2HV4713	CLOSE	AFW P141 DISCHARGE TO STEAM GENERATOR 2E089 VALVE		MO	7.980	0.572	0.000		28.000	36.552	40.900	4.348			
		2HV4731	CLOSE	AFW DISCHARGE TO SG 2E099 ELECTROHYDRAULIC ISOLATION VALVE		EH	N/A	0.572	0.000		3.100	3.672	40.900	37.228			
		2HV4731	OPEN	AFW DISCHARGE TO SG 2E089 ELECTROHYDRAULIC ISOLATION VALVE		EH	N/A	0.572	0.000		3.100	3.672	40.900	37.228			
K624	EFAS-1	2HV4713	OPEN	AFW P141 DISCHARGE TO STEAM GENERATOR 2E089 VALVE		MO	7.980	0.572	0.000		28.300	36.852	40.900	4.048			
		2HV4731	OPEN	AFW DISCHARGE TO SG 2E089 ELECTROHYDRAULIC ISOLATION VALVE		EH	N/A	0.572	0.000		3.100	3.672	40.900	37.228			
		2HV4730	CLOSE	STEAM GENERATOR 2E088 AFW ISOLATION VALVE		MO	7.980	0.505	0.000		3.100	3.672	40.900	37.228			
														24.065			

UNIT 2 ESF TRAIN A  
RESPONSE TIMES (SEC)

TRAIN A ESFAS ACTUATION RELAY AND COMPONENTS													
RELAY	ACTUATION	Equip_ID	Test_Type	DESCRIPTION	Act_Type	DIESEL	LOGIC	K-RELAY	SEQUENCE DELAY	DEVICE	TOTAL	TS_MAX	ALLOWABLE
K303	EFAS-2	2HV4054	CLOSE	SG 2E088 BLOWDOWN ISOLATION VALVE	AO	N/A	0.505	0.000		3.740	4.245	20.000	16.655
K625	EFAS-2	2HV4730	OPEN	STEAM GENERATOR 2E088 APW ISOLATION VALVE	MO	7.980	0.505	0.000		9.090	17.575	40.000	23.325
K725	EFAS-2	2HV4705	OPEN	AUX FEEDWATER P140 OUTLET TO STEAM GENERATOR 2E088 CONTROL VALVE	MO	7.980	0.505	0.000		29.630	38.115	40.000	2.785
K105	MSIS	2HV8419	CLOSE	MAIN STEAM DUMP TO ATMOSPHERE	AO	N/A	0.159	0.000		2.200	2.359	20.000	18.541
		2HV8205	CLOSE	E088 GEN MAIN STM ISOLATION ON	HY	N/A	0.159	0.000		7.200	7.359	8.900	1.541
K106	MSIS	2HV4048	CLOSE	STEAM GEN E088 FW ISOL VALVE	EH	N/A	0.159	0.000		7.600	7.759	10.000	2.941
		2HV4052	CLOSE	STEAM GEN E089 FW ISOL VALVE	EH	N/A	0.159	0.000		7.600	7.759	10.000	3.141
K305	MSIS	2HV8204	CLOSE	E089 GEN MAIN STM ISOLATION OR	HY	N/A	0.159	0.000		6.500	6.659	8.900	2.241
K313	MSIS	2HV8205	CLOSE	E088 GEN MAIN STM ISOLATION ON	HY	N/A	0.159	0.000		7.200	7.359	8.900	1.541
K406	MSIS	2HV4048	CLOSE	STEAM GEN E088 FW ISOL VALVE	EH	N/A	0.159	0.000		7.800	7.959	10.000	2.941
		2HV4052	CLOSE	STEAM GEN E089 FW ISOL VALVE	EH	N/A	0.159	0.000		7.600	7.759	10.000	3.141
K411	MSIS	2HV8204	CLOSE	E089 GEN MAIN STM ISOLATION OR	HY	N/A	0.159	0.000		6.500	6.659	8.900	2.241
		2HV4054	CLOSE	SG 2E088 CLOWDOWN ISOLATION VALVE	AO	N/A	0.159	0.000		7.600	7.759	20.000	13.141
K623	MSIS	2HV4731	CLOSE	AFW DISCHARGE TO SG 2E089 ELECTROHYDRAULIC ISOLATION VALVE	EH	N/A	0.159	0.000		3.110	3.269	20.000	17.631
		2HV4730	CLOSE	STEAM GENERATOR 2E088 APW ISOLATION VALVE	MO	N/A	0.159	0.000		3.100	3.259	40.000	37.641
K723	MSIS	2HV4713	CLOSE	AFWP P141 DISCHARGE TO STEAM GENERATOR 2E089 VALVE	MO	7.980	0.159	0.000		8.350	16.489	40.000	24.411
		2HV4763	CLOSE	AFWP 2P141 TO SG 2E009 DISCH VALVE BYPASS	MO	7.980	0.159	0.000		28.000	36.139	40.000	4.761
K104	RAS	P-015	CLOSE	LPSI PUMP	EH	N/A	0.159	0.000	5.070	22.500	22.659	40.000	18.241
		2HV9303	CLOSE	CONTAINMENT SUMP SUCTION OUTSIDE CONTAINMENT ISOLATION VALVE, TRAIN A	MO	7.980	0.429	0.000		31.000	39.409	50.700	11.291
K309	RAS	2HV9306	CLOSE	ECCS PUMPS COMBINED MINIFLOW TO RWST, TRAIN A VALVE	MO	7.980	0.429	0.000		37.500	45.909	50.700	4.791
K312	RAS	2HV9305	OPEN	CONTAINMENT SUMP SUCTION INSIDE CONTAINMENT ISOLATION VALVE, TRAIN A	MO	7.980	0.429	0.000		30.300	38.709	50.700	11.991
		2HV9307	CLOSE	ECCS PUMPS COMBINED MINIFLOW TO RWST, TRAIN A VALVE	MO	7.980	0.429	0.000		37.000	45.409	50.700	5.291
K101	SIAS	2HV7801	CLOSE	CN1MT AIRBORNE RAD MONITOR TR A ISOL	SO	N/A	0.398	0.000		0.100	0.498	1.900	1.402
		2HV7802	CLOSE	CN1MT AIRBORNE RAD MONITOR TR A ISOL	SO	N/A	0.398	0.000		0.100	0.498	1.900	1.402
		P-141		AUX FEED PUMP		7.980			29.830	37.810		40.500	2.690
K102	SIAS	P-024		CCW PUMP		7.980			14.780	22.760		25.500	2.740
		P-025		CCW PUMP		7.980			15.500	23.460		25.500	2.020
K108	SIAS	2HV5388	CLOSE	INSTRUMENT AIR ISOLATION	AO	N/A	0.398	0.000		2.450	2.848	40.000	37.152
		2HV7816	CLOSE	CN1M AIRBORNE RAD MONITOR EMER SAMPLE TR A ISOL	SO	N/A	0.398	0.000		0.300	0.698	1.900	1.202
		P-190		CHARGING PUMP		7.980			0.000	7.980		10.000	2.020
		P-191		CHARGING PUMP		7.980			0.000	7.980		10.000	2.020
K109	SIAS	P-012		CN1MT SPRAY PUMP		7.980			9.890	17.870		20.500	2.630
K110	SIAS	P-015		LPSI PUMP		7.980			5.070	13.050		15.500	2.450
		P-017		HPSI PUMP		7.980			0.000	7.980		10.000	2.020
		P-018		HPSI PUMP		7.980			0.000	7.980		10.000	2.020
K301	SIAS	2HV9218	CLOSE	RC PUMP BLEED OFF TO VCT	AO	N/A	0.398	0.000		2.100	2.498	40.000	37.502
		2HV9205	CLOSE	REGEN HT EXCH TO LETDOWN HT EXCH	AO	N/A	0.398	0.000		3.000	3.398	40.000	36.602
K311	SIAS	2HV77810	CLOSE	CN1MT AIRBORNE RAD MONITOR TR A ISOL	SO	N/A	0.398	0.000		0.100	0.498	1.900	1.402
		2HV7811	CLOSE	CN1MT AIRBORNE RAD MONITOR TR A ISOL	SO	N/A	0.398	0.000		0.100	0.498	1.900	1.402
		2HV7259	CLOSE	CONTAINMENT ISOL SI TANK VENT HDR	AO	N/A	0.398	0.000		3.800	4.198	40.000	35.802
		2HV9823	CLOSE	CN1MT MINI PURGE SUP A374 ISO	AO	N/A	0.398	0.000		2.330	2.728	5.900	3.172
K408	SIAS	2HV9825	CLOSE	CN1MT MINI PURGE EXH A060 ISO	AO	N/A	0.398	0.000		2.350	2.748	5.900	3.152
		2HV9825	CLOSE	CN1MT MINI PURGE EXH A060 ISO	AO	N/A	0.398	0.000		3.350	3.748	5.900	2.152
K409	SIAS	2HV0511	CLOSE	PRESSURIZER VAPOR SAMPLE CN1MT ISOL	AO	N/A	0.398	0.000		6.500	6.898	40.000	33.102
		2HV0513	CLOSE	PRZR SURGE LN LIQ SAMPLE CN1MT ISOL	AO	N/A	0.398	0.000		2.640	3.038	40.000	36.962
		2HV0509	CLOSE	REAC CLNT HOT LEG SAMPLE CN1MT ISOL	AO	N/A	0.398	0.000		3.400	3.798	40.000	36.202

UNIT 2 ESF TRAIN A  
RESPONSE TIMES (SEC)

TRAIN A ESFAS ACTUATION RELAY AND COMPONENTS														
RELAY	ACTUATION	Equip_ID	Test_Type	DESCRIPTION	Act_Type	DIESEL	LOGIC	K-RELAY	SEQUENCE	DELTA	DEVICE	TOTAL	TS_MAX	ALLOWABLE
		2HV0516	CLOSE	REACTOR COOLANT DRAIN TANK SAMPLE CONTAINMENT ISOLATION VALVE	MO	7.980	0.398	0.000			8.200	16.578	50.900	34.322
		2HV5803	CLOSE	CONTAINMENT SUMP TO RADWASTE SUMP VALVE	MO	7.980	0.398	0.000			34.600	42.978	50.900	7.922
		2HV0514	CLOSE	QUENCH TANK VAPOR SAMPLE CONTAINMENT ISOLATION VALVE	MO	7.980	0.398	0.000			22.200	30.578	50.900	20.322
		2HV0334	CLOSE	SIT DRAIN TO RWT ISOLATION VALVE	MO	7.980	0.398	0.000			10.200	18.578	50.900	32.322
K410	SIAS	2HV0920	CLOSE	CONTAINMENT NORM COOL SUP ISO VV	AO	N/A	0.398	0.000			9.400	9.798	40.000	30.202
		2HV0921	CLOSE	CONTAINMENT NORM COOL RET ISO VV	AO	N/A	0.398	0.000			6.898	6.898	40.000	33.102

UNIT 2 ESF TRAIN B  
RESPONSE TIMES (SEC)

TRAIN B ESF AS ACTUATION RELAY AND COMPONENTS			RESPONSE TIMES IN SECONDS		SEQUENCE DELAY	DEVICE	TOTAL	TS_MAX	ALLOWABLE
RELAY	ACTUATION	Equip_ID	Test_Type	Description					
K306	CCAS	2HV6368	OPEN	CCW TO EMERGENCY COOLING UNIT 2E400 CONTAINMENT ISOLATION VALVE	MO	8.310	0.398	0.000	3.202
		2HV6369	OPEN	CCW FROM EMERGENCY COOLING UNIT 2E400 CONTAINMENT ISOLATION VALVE	MO	8.310	0.398	0.000	3.482
		2HV6372	OPEN	CCW TO EMERGENCY COOLING UNIT 2E402 CONTAINMENT ISOLATION VALVE	MO	8.310	0.398	0.000	3.392
		2HV6373	OPEN	CCW FROM EMERGENCY COOLING UNIT 2E402 CONTAINMENT ISOLATION VALVE	MO	8.310	0.398	0.000	3.512
K201	CIAS	2HV1106	CLOSE	STM GEN E089 FW BYPASS VALVE	AO	N/A	0.400	0.000	2.800
		2HV4061	CLOSE	STM GEN E089 FW BLOCK VALVE	EH	N/A	0.400	0.000	3.100
K202	CIAS	2TV9267	CLOSE	REGEN HEAT EXCHANGER E083 OUTLET VALVE	MO	8.310	0.400	0.000	28.890
K203	CIAS	2HV9217	CLOSE	RCP CBO TO VCT INSIDE CONTAINMENT ISOLATION VALVE	MO	8.310	0.400	0.000	33.490
		2HV9900	CLOSE	CONTAINMENT NORMAL CHILLED WATER DRAIN VALVE	MO	8.310	0.400	0.000	33.160
K204	CIAS	2HV9971	CLOSE	CONTAINMENT NORMAL CHILLED WATER DRAIN VALVE	MO	8.310	0.400	0.000	33.190
		2HV7800	CLOSE	CNTMT AIRBORNE RAD MONITOR TR B ISOL	SO	N/A	0.400	0.000	1.400
K205	CIAS	2HV7803	CLOSE	CNTMT AIRBORNE RAD MONITOR TR B ISOL	SO	N/A	0.400	0.000	1.400
		2HV5437	CLOSE	NITROGEN SUPPLY TO REACTOR COMP	AO	N/A	0.400	0.000	1.400
K206	CIAS	2HV5434	CLOSE	NITROGEN TO SAFETY INJ TANKS	AO	N/A	0.400	0.000	1.400
		2HV7911	CLOSE	NUCL SERV WATER CONTAINMENT ISOL	AO	N/A	0.400	0.000	1.400
K207	CIAS	2HV7805	CLOSE	CNTMT AIRBORNE RAD MONITOR TR B ISOL	SO	N/A	0.400	0.000	1.400
		2HV9824	CLOSE	CNTMT MINI PURGE EXH A060 ISO	AO	N/A	0.400	0.000	1.400
K208	CIAS	2HV7806	CLOSE	CNTMT AIRBORNE RAD MONITOR TR B ISOL	SO	N/A	0.400	0.000	1.400
		2HV7513	CLOSE	CONTAINMENT ISOL RC DRN TO ROW SYS	AO	N/A	0.400	0.000	1.400
K209	CIAS	2HV7258	CLOSE	RC DT TO WASTE GAS SYSTEM CONTAINMENT ISOLATION VALVE	MO	8.310	0.400	0.000	5.890
		2HV9821	CLOSE	CNTMT MINI PURGE SUP A374 ISO	AO	N/A	0.400	0.000	2.620
K210	CIAS	2HV8205	CLOSE	E088 GEN MAIN STM ISOLATION ON	HY	N/A	0.400	0.000	1.300
		2HV4048	CLOSE	STEAM GEN E088 FW ISOL VALVE	EH	N/A	0.400	0.000	2.700
K211	CIAS	2HV4052	CLOSE	STEAM GEN E089 FW ISOL VALVE	EH	N/A	0.400	0.000	2.900
		2HV8204	CLOSE	E089 GEN MAIN STM ISOLATION OR	HY	N/A	0.400	0.000	2.000
K212	CIAS	2HV5804	CLOSE	CONTAINMENT SUMP TO RW ISOL VALVE	AO	N/A	0.400	0.000	34.650
		2HV0515	CLOSE	QUENCH TANK VAPOR SAMPLE CNTMT ISOL	AO	N/A	0.400	0.000	37.600
K213	CIAS	2HV0512	CLOSE	PRESSURIZER SURGE LINE LIQUID SAMPLE CONTAINMENT ISOLATION VALVE	MO	8.310	0.400	0.000	34.090
		2HV0510	CLOSE	PRESSURIZER STEAM SAMPLE ISOLATION VALVE	MO	8.310	0.400	0.000	34.640
K214	CIAS	2HV0508	CLOSE	RC'S HOT LEG SAMPLE CONTAINMENT ISOLATION VALVE	MO	8.310	0.400	0.000	34.290
		2HV0517	CLOSE	REACTOR COOLANT HOT LEG SAMPLE CONTAINMENT ISOLATION VALVE	MO	8.310	0.400	0.000	31.130
K215	CIAS	2HV6216	CLOSE	CCW NCL CONTAINMENT RETURN ISOLATION VALVE	MO	8.310	0.400	0.000	21.660
		2HV6213	CLOSE	CCW DISCHARGE TO NON-CRITICAL LOOP	MO	8.310	0.400	0.000	21.000
K216	CIAS	2HV6219	CLOSE	CCW PUMP SUCTION FROM NON-CRITICAL LOOP	AO	N/A	0.400	0.000	2.000
		2HV6204	CLOSE	E089 GEN MAIN STM ISOLATION OR	HY	N/A	0.400	0.000	2.900
K217	CIAS	2HV4052	CLOSE	STEAM GEN E089 FW ISOL VALVE	EH	N/A	0.400	0.000	2.700
		2HV8205	CLOSE	E088 GEN MAIN STM ISOLATION ON	HY	N/A	0.400	0.000	3.100
K218	CIAS	2HV4048	CLOSE	STEAM GEN E088 FW ISOL VALVE	EH	N/A	0.400	0.000	2.700
		2HV4061	CLOSE	STM GEN E089 FW BLOCK VALVE	EH	N/A	0.400	0.000	3.100
K219	CIAS	2HV6500	OPEN	CCW TO SHUTDOWN HEAT EXCH	EH	N/A	0.223	0.000	17.837
		2HV9368	OPEN	CONTAINMENT SPRAY TRAIN B ISOLATION VALVE	MO	8.310	0.223	0.000	5.567
K220	EFAS-1	2HV8200	OPEN	MAIN STEAM FROM STEAM GEN TO AF PUMP	AO	N/A	0.572	0.000	40.888
		2HV4053	CLOSE	SG 2E089 BLOWDOWN ISOLATION VALVE	AO	N/A	0.572	0.000	16.218
K221	EFAS-1	2HV4715	OPEN	STEAM GENERATOR 2E089 AFW ISOLATION VALVE	MO	8.310	0.572	0.000	32.248
		2HV4706	OPEN	AUX FEEDWATER P140 OUTLET TO STEAM GENERATOR 2E089 CONTROL VALVE	MO	8.310	0.572	0.000	15.018
K222	EFAS-1	2HV4706	OPEN	AUX FEEDWATER P140 OUTLET TO STEAM GENERATOR 2E089 CONTROL VALVE	MO	8.310	0.572	0.000	15.018

UNIT 2 ESF TRAIN B  
RESPONSE TIMES (SEC)

TRAIN B ESFAS ACTUATION RELAY AND COMPONENTS													
RELAY	ACTUATION	Equip_ID	Test_Type	DESCRIPTION	Act_Type	RESPONSE TIMES IN SECONDS			SEQUENCE	DEVICE	TOTAL	TS_MAX	ALLOWABLE
						DIESEL	LOGIC	K-RELAY	DELAY				
K724	EFAS-1	2HV4715	OPEN	STEAM GENERATOR 2E089 AFW ISOLATION VALVE	MO	8.310	0.572	0.000		11.570	20.452	52.700	32.248
K112	EFAS-2	P-504		AUX FEED PUMP		8.310			29.000		37.310	40.500	3.190
		2HV4712	OPEN	APW P504 DISCHARGE TO STEAM GENERATOR 2E088 CONTROL VALVE	MO	8.310	0.505	0.000		28.500	37.315	40.900	3.585
		2HV4714	OPEN	APW DISCHARGE TO SG 2E088 ISOLATION VALVE	EH	N/A	0.505	0.000		3.400	3.905	40.900	36.995
K116	EFAS-2	2HV4762	CLOSE	AFWP 2P604 TO SG 2E088 DSCH VALVE BYPASS	EH	N/A	0.505	0.000		18.800	19.305	40.900	21.595
K625	EFAS-2	2HV4712	OPEN	APW P504 DISCHARGE TO STEAM GENERATOR 2E088 CONTROL VALVE	MO	8.310	0.505	0.000		18.800	27.615	40.900	13.285
K725	EFAS-2	2HV4714	OPEN	APW DISCHARGE TO SG 2E088 ISOLATION VALVE	EH	N/A	0.505	0.000		3.400	3.905	40.900	36.995
K106	MSIS	2HV8421	CLOSE	MAIN STEAM DUMP TO ATMOSPHERE	AO	N/A	0.159	0.000		1.630	1.789	20.900	19.111
		2HV4052	CLOSE	STEAM GEN E089 FW ISOL VALVE	EH	N/A	0.159	0.000		7.600	7.759	10.900	3.141
		2HV8204	CLOSE	E089 GEN MAIN STM ISOLATION OR	HY	N/A	0.159	0.000		6.500	6.659	8.900	2.241
K106	MSIS	2HV8205	CLOSE	E088 GEN MAIN STM ISOLATION ON	HY	N/A	0.159	0.000		7.200	7.359	8.900	1.541
		2HV4048	CLOSE	STEAM GEN E088 FW ISOL VALVE	EH	N/A	0.159	0.000		7.800	7.959	10.900	2.941
K306	MSIS	2HV8204	CLOSE	E089 GEN MAIN STM ISOLATION OR	HY	N/A	0.159	0.000		6.500	6.659	8.900	2.241
K313	MSIS	2HV8205	CLOSE	E088 GEN MAIN STM ISOLATION ON	HY	N/A	0.159	0.000		7.200	7.359	8.900	1.541
		2HV4048	CLOSE	STEAM GEN E088 FW ISOL VALVE	EH	N/A	0.159	0.000		7.800	7.959	10.900	2.941
K406	MSIS	2HV4052	CLOSE	STEAM GEN E089 FW ISOL VALVE	EH	N/A	0.159	0.000		7.600	7.759	10.900	3.141
		2HV4053	CLOSE	SG 2E089 BLOWDOWN ISOLATION VALVE	AO	N/A	0.159	0.000		4.110	4.269	20.900	16.631
		2HV4057	CLOSE	STM GEN E089 WTR SAMPLE ISOL	AO	N/A	0.159	0.000		2.540	2.699	20.900	18.201
K623	MSIS	2HV4706	CLOSE	AUX FEEDWATER P140 OUTLET TO STEAM GENERATOR 2E089 CONTROL VALVE	MO	8.310	0.159	0.000		29.020	37.489	40.900	3.411
		2HV4712	CLOSE	APW P504 DISCHARGE TO STEAM GENERATOR 2E088 CONTROL VALVE	MO	8.310	0.159	0.000		28.000	36.469	40.900	4.431
K723	MSIS	2HV4715	CLOSE	STEAM GENERATOR 2E089 AFW ISOLATION VALVE	MO	8.310	0.159	0.000		10.880	19.349	40.900	21.551
		2HV4762	CLOSE	AFWP 2P604 TO SG 2E088 DSCH VALVE BYPASS	EH	N/A	0.159	0.000	4.780	18.800	18.959	40.900	21.941
K104	RAS	P-016		LPSI PUMP		8.310					13.090	15.500	2.410
		2HV9302	OPEN	CONTAINMENT SUMP SUCTION OUTSIDE CONTAINMENT ISOLATION VALVE, TRAIN B	MO	8.310	0.429	0.000		31.000	39.739	50.700	10.961
K309	RAS	2HV9347	CLOSE	ECSS PUMPS COMBINED MINIFLOW TO RWST, TRAIN B VALVE	MO	8.310	0.429	0.000		37.300	46.039	50.700	4.661
K312	RAS	2HV9304	OPEN	CONTAINMENT SUMP SUCTION INSIDE CONTAINMENT ISOLATION VALVE, TRAIN B	MO	8.310	0.429	0.000		29.700	38.439	50.700	12.261
		2HV9348	CLOSE	ECSS PUMPS COMBINED MINIFLOW TO RWST, TRAIN B VALVE	MO	8.310	0.429	0.000		35.500	44.239	50.700	6.461
K101	SIAS	2HV7800	CLOSE	CNTMT AIRBORNE RAD MONITOR TR B ISOL	SO	N/A	0.398	0.000		0.100	0.498	1.900	1.402
		2HV7803	CLOSE	CNTMT AIRBORNE RAD MONITOR TR B ISOL	SO	N/A	0.398	0.000		0.100	0.498	1.900	1.402
		P-504	STOP	AUX FEED PUMP		8.310			29.000		37.310	43.500	3.190
K102	SIAS	P-026		CCW PUMP		8.310			14.520		22.830	25.500	2.670
		P-025		CCW PUMP (KIRK KEY)		8.310			15.200		23.510	25.500	1.990
		2HV5437	CLOSE	NITROGEN SUPPLY TO REACTOR COMP	AO	N/A	0.398	0.000		1.700	2.098	40.000	37.902
		2HV5434	CLOSE	NITROGEN TO SAFETY INJ TANKS	AO	N/A	0.398	0.000		3.800	4.198	40.000	35.802
		2HV5686	CLOSE	FIRE WATER TO CONTAINMENT ISOLATION VALVE	MO	8.310	0.398	0.000		25.500	34.208	50.900	16.692
K108	SIAS	P-192		CHARGING PUMP		8.310			0.000		8.310	10.000	1.690
		P-191		CHARGING PUMP		8.310			0.000		8.310	10.000	1.690
		P-013		CONTAINMENT SPRAY PUMP		8.310			9.920		18.230	20.500	2.270
K109	SIAS	P-016		LPSI PUMP		8.310			4.780		13.090	15.500	2.410
K110	SIAS	P-019		HPSI PUMP		8.310			0.000		8.310	10.000	1.690
		P-018		HPSI PUMP		8.310			0.000		8.310	10.000	1.690
K301	SIAS	2TV9267	CLOSE	REGEN HEAT EXCHANGER E063 OUTLET VALVE	MO	8.310	0.398	0.000		13.300	22.008	50.900	26.892
		2HV9217	CLOSE	RCP CBO TO VCT INSIDE CONTAINMENT ISOLATION VALVE	MO	8.310	0.398	0.000		8.700	17.408	50.900	33.492
K311	SIAS	2HV9821	CLOSE	CNTMT MINI PURGE SUP A374 ISO	AO	N/A	0.398	0.000		2.880	3.278	5.900	2.622
		2HV9824	CLOSE	CNTMT MINI PURGE EXH A060 ISO	AO	N/A	0.398	0.000		2.940	3.338	5.900	2.562
		2HV7806	CLOSE	CNTMT AIRBORNE RAD MONITOR TR B ISOL	SO	N/A	0.398	0.000		0.100	0.498	1.900	1.402
		2HV7513	CLOSE	CONTAINMENT ISOL RC DRN TO RDW SYS	AO	N/A	0.398	0.000		5.800	6.198	40.000	33.802

UNIT 2 ESF TRAIN B  
RESPONSE TIMES (SEC)

TRAIN B ESF AS ACTUATION RELAY AND COMPONENTS														
RELAY	ACTUATION	Equip_ID	Test_Typ	DESCRIPTION	Act_Type	RESPONSE TIMES IN SECONDS				SEQUENCE	DEVICE	TOTAL	TS_MAX	ALLOWABLE
						DIESEL	LOGIC	K-RELAY	DELAY					
		2HV7805	CLOSE	CNTMT AIRBORNE RAD MONITOR TR B ISOL	SO	N/A	0.398	0.000			0.100	0.498	1.900	1.402
		2HV7258	CLOSE	PCDIT TO WASTE GAS SYSTEM CONTAINMENT ISOLATION VALVE	MO	8.310	0.398	0.000			36.300	45.008	50.900	5.892
K408	SIAS	2HV7824	CLOSE	CNTMT MINI PURGE EXH A060 ISO	AO	N/A	0.398	0.000			2.940	3.338	5.900	2.562
K409	SIAS	2HV5804	CLOSE	CONTAINMENT SUMP TO RW ISOL VALVE	AO	N/A	0.398	0.000			4.950	5.348	40.000	34.652
		2HV0515	CLOSE	QUENCH TANK VAPOR SAMPLE CNTMT ISOL	AO	N/A	0.398	0.000			2.000	2.398	40.000	37.602
		2HV0512	CLOSE	PRESSURIZER SURGE LINE LIQUID SAMPLE CONTAINMENT ISOLATION VALVE	MO	8.310	0.398	0.000			8.200	16.908	50.900	33.992
		2HV0510	CLOSE	PRESSURIZER STEAM SAMPLE ISOLATION VALVE	MO	8.310	0.398	0.000			7.550	16.258	50.900	34.642
		2HV0508	CLOSE	RCS HOT LEG SAMPLE CONTAINMENT ISOLATION VALVE	MO	8.310	0.398	0.000			8.100	16.808	50.900	34.092
		2HV0517	CLOSE	REACTOR COOLANT HOT LEG SAMPLE CONTAINMENT ISOLATION VALVE	MO	8.310	0.398	0.000			7.900	16.608	50.900	34.292
K410	SIAS	2HV9900	CLOSE	CONTAINMENT NORMAL CHILLED WATER DRAIN VALVE	MO	8.310	0.398	0.000			9.030	17.738	50.900	33.162
		2HV9971	CLOSE	CONTAINMENT NORMAL CHILLED WATER DRAIN VALVE	MO	8.310	0.398	0.000			9.000	17.708	50.900	33.192

UNIT 3 ESF TRAIN A  
RESPONSE TIMES (SEC)

TRAIN A ESF AS ACTUATION RELAY AND COMPONENTS													
RELAY	ACTUATION	Equip. ID	Test Typ	DESCRIPTION	Act_Type	DIESEL	LOGIC	K-RELAY	SEQUENCE DELAY	DEVICE	TOTAL	TS MAX	ALLOWABLE
K206	CCAS	3HV6366	OPEN	CCW TO EMERGENCY COOLING UNIT 2E401 CONTAINMENT ISOLATION VALVE	MO	8.400	0.351	0.000		10.500	19.251	23.200	3.949
		3HV6367	OPEN	CCW FROM EMERGENCY COOLING UNIT 2E401 CONTAINMENT ISOLATION VALVE	MO	8.400	0.351	0.000		11.900	19.651	23.000	3.349
		3HV6370	OPEN	CCW TO EMERGENCY COOLING UNIT 2E399 CONTAINMENT ISOLATION VALVE	MO	8.400	0.351	0.000		11.100	19.851	23.000	3.149
		3HV6371	OPEN	CCW FROM EMERGENCY COOLING UNIT 2E399 CONTAINMENT ISOLATION VALVE	MO	8.400	0.351	0.000		11.200	19.951	23.000	3.049
K202	CIAS	3HV9218	CLOSE	RC PUMP BLEED OFF TO 'CT	AO	N/A	0.348	0.000		2.100	2.448	40.000	37.552
		3HV9205	CLOSE	REGEN HT EXCH TO LETDOWN, HT EXCH	AO	N/A	0.348	0.000		1.400	1.748	40.000	38.252
K203	CIAS	3HV9920	CLOSE	CONTAINMENT NORM COOL SUP ISO VV	AO	N/A	0.348	0.000		5.300	5.648	40.000	34.352
		3HV9921	CLOSE	CONTAINMENT NORM COOL RET ISO VV	AO	N/A	0.348	0.000		10.500	10.848	40.000	29.152
K204	CIAS	3HV7801	CLOSE	CNTMT AIRBORNE RAD MONITOR TR A SOL	SO	N/A	0.348	0.000		0.500	0.848	1.900	1.052
		3HV7802	CLOSE	CNTMT AIRBORNE RAD MONITOR TR A ISC	SO	N/A	0.348	0.000		0.500	0.848	1.900	1.052
		3HV7816	CLOSE	CNTMT AIRBORNE RAD MONITOR EMER SAMPLE TR A ISOL	SO	N/A	0.348	0.000		0.500	0.848	1.900	1.051
K205	CIAS	3HV5388	CLOSE	INSTRUMENT AIR ISOLATION	AO	N/A	0.348	0.000		2.300	2.648	40.000	37.352
K206	CIAS	3HV7810	CLOSE	CNTMT AIRBORNE RAD MONITOR TR A ISOL	SO	N/A	0.348	0.000		0.500	0.848	1.900	1.052
		3HV7811	CLOSE	CNTMT AIRBORNE RAD MONITOR TR A ISOL	SO	N/A	0.348	0.000		0.500	0.848	1.900	1.052
		3HV7259	CLOSE	CONTAINMENT ISOL SI TANK VENT HDR	AO	N/A	0.348	0.000		5.100	5.448	40.000	34.552
		3HV9823	CLOSE	CNTMT MINI PURGE SUP A374 ISO	AO	N/A	0.348	0.000		2.400	2.748	5.900	3.152
		3HV9825	CLOSE	CNTMT MINI PURGE EXH A060 ISO	AO	N/A	0.348	0.000		3.300	3.648	5.900	2.252
K208	CIAS	3HV8205	CLOSE	E088 GEN MAIN STM ISOLATION ON	HY	N/A	0.348	0.000		7.500	7.848	8.900	1.052
		3HV4048	CLOSE	STEAM GEN E088 FW ISOL VALVE	EH	N/A	0.348	0.000		8.350	8.698	10.900	2.202
K209	CIAS	3HV4052	CLOSE	STEAM GEN E089 FW ISOL VALVE	EH	N/A	0.348	0.000		7.520	7.868	10.900	3.032
		3HV8204	CLOSE	E089 GEN MAIN STM ISOLATION OR	HY	N/A	0.348	0.000		7.100	7.448	8.900	1.452
K210	CIAS	3HV0511	CLOSE	PRESSURIZER VAPOR SAMPLE CNTMT ISOL	AO	N/A	0.348	0.000		4.100	4.448	40.000	35.552
		3HV0513	CLOSE	PRZR SURGE LN LG SAMPLE CNTMT ISOL	AO	N/A	0.348	0.000		2.940	3.288	40.000	34.712
		3HV0514	CLOSE	QUENCH TANK VAPOR SAMPLE CONTAINMENT ISOLATION VALVE	MO	8.400	0.348	0.000		10.370	19.118	50.900	31.782
		3HV0516	CLOSE	REACTOR COOLANT DRAIN TANK SAMPLE CONTAINMENT ISOLATION VALVE	MO	8.400	0.348	0.000		7.300	16.048	50.900	34.852
		3HV5803	CLOSE	CONTAINMENT SUMP TO RADWASTE SUMP VALVE	MO	8.400	0.348	0.000		12.600	21.348	50.900	29.552
		3HV0509	CLOSE	REAC CLNT HOT LEG SAMPLE CNTMT ISOL	AO	N/A	0.348	0.000		3.030	3.378	40.000	34.622
		3HV9304	OPEN	CONTAINMENT SUMP SUCTION INSIDE CONTAINMENT ISOLATION VALVE, TRAIN B	MO	8.400	0.348	0.000		31.700	40.448	50.700	10.252
K212	CIAS	3HV4047	CLOSE	STM GEN E088 FW BLOCK VALVE	EH	N/A	0.348	0.000		7.100	7.448	10.900	3.452
		3HV1106	CLOSE	STM GEN E088 FW BYPASS VALVE	AO	N/A	0.348	0.000		7.660	8.008	10.900	2.892
K213	CIAS	3HV6223	CLOSE	CCW NON-CRITICAL LOOP CONTAINMENT SUPPLY ISOLATION VALVE	MO	8.400	0.348	0.000		10.650	19.398	50.900	31.502
		3HV6236	CLOSE	CCW NON-CRITICAL LOOP RETURN FROM CONTAINMENT VALVE	MO	8.400	0.348	0.000		10.450	19.198	50.900	31.702
		3HV6212	CLOSE	CCW DISCHARGE TO NON-CRITICAL LOOP	AO	N/A	0.348	0.000		10.200	10.548	20.900	10.352
		3HV6218	CLOSE	CCW PUMP SUCTION FROM NON-CRITICAL LOOP	AO	N/A	0.348	0.000		4.600	4.948	20.900	15.952
K207	CIAS	3HV4052	CLOSE	STEAM GEN E089 FW ISOL VALVE	EH	N/A	0.348	0.000		7.520	7.868	10.900	3.032
		3HV8204	CLOSE	E089 GEN MAIN STM ISOLATION OR	HY	N/A	0.348	0.000		7.100	7.448	8.900	1.452
K314	CIAS	3HV8205	CLOSE	E088 GEN MAIN STM ISOLATION ON	HY	N/A	0.348	0.000		7.500	7.848	8.900	1.052
		3HV4048	CLOSE	STEAM GEN E088 FW ISOL VALVE	EH	N/A	0.348	0.000		8.350	8.698	10.900	2.202
K304	CSAS	3HV9367	OPEN	CONTAINMENT SPRAY TRAIN A CONTAINMENT ISOLATION VALVE	MO	8.400	0.398	0.000		9.400	18.198	23.000	4.802
K1A	EFAS-1	3HV4763	CLOSE	AFWP 2P141 TO SG 2E009 DISCH VALVE BYPASS	EH	N/A	0.629	0.000		24.100	24.729	40.900	16.171
K211	EFAS-1	P.141		AUX FEED PUMP		8.400			29.200		37.690	40.500	2.810
		3HV4713	CLOSE	AFW P141 DISCHARGE TO STEAM GENERATOR 2E089 VALVE	MO	8.400	0.629	0.000		27.000	36.029	40.900	4.871
		3HV4731	CLOSE	AFW DISCHARGE TO SG 2E089 ELECTROHYDRAULIC ISOLATION VALVE	EH	N/A	0.629	0.000		2.600	3.229	40.900	37.671
		3HV4731	OPEN	AFW DISCHARGE TO SG 2E089 ELECTROHYDRAULIC ISOLATION VALVE	EH	N/A	0.629	0.000		3.000	3.629	40.900	37.271
K624	EFAS-1	3HV4713	OPEN	AFW P141 DISCHARGE TO STEAM GENERATOR 2E089 VALVE	MO	8.400	0.629	0.000		25.000	34.029	40.900	6.871
K724	EFAS-1	3HV4731	OPEN	AFW DISCHARGE TO SG 2E089 ELECTROHYDRAULIC ISOLATION VALVE	EH	N/A	0.629	0.000		3.000	3.629	40.900	37.271
K112	EFAS-2	3HV4730	CLOSE	STEAM GENERATOR 2E088 AFW ISOLATION VALVE	MO	8.400	0.416	0.000			17.916	40.900	22.984

UNIT 3 ESF TRAIN A  
RESPONSE TIMES (SEC)

TRAIN A ESFAS ACTUATION RELAY AND COMPONENTS														
RELAY	ACTUATION	Equip ID	Test Typ	DESCRIPTION	Act_Type	DIESEL	LOGIC	K-RELAY	SEQUENCE	DELAY	DEVICE	TOTAL	TS_MAX	ALLOWABLE
K303	EFAS-2	3HV4054	CLOSE	SG 2E088 BLOWDOWN ISOLATION VALVE	AO	N/A	0.416	0.000			4.130	4.546	20.900	16.354
K625	EFAS-2	3HV4730	OPEN	STEAM GENERATOR 2E088 APW ISOLATION VALVE	MO	8.400	0.416	0.000			9.100	17.916	40.900	22.984
K725	EFAS-2	3HV4705	OPEN	AUX FEEDWATER P140 OUTLET TO STEAM GENERATOR 2E088 CONTROL VALVE	MO	8.400	0.416	0.000			30.900	39.716	40.900	1.184
K105	MSIS	3HV8419	CLOSE	MAIN STEAM DUMP TC-ATMOSPHERE	AO	N/A	0.269	0.000			1.300	1.569	20.900	19.331
		3HV8205	CLOSE	E088 GEN MAIN STM ISOLATION ON	HY	N/A	0.269	0.000			7.500	7.769	8.900	1.131
		3HV4048	CLOSE	STEAM GEN E088 FW ISOL VALVE	EH	N/A	0.269	0.000			8.350	8.619	10.900	2.281
K106	MSIS	3HV4052	CLOSE	STEAM GEN E089 FW ISOL VALVE	EH	N/A	0.269	0.000			7.520	7.789	10.900	3.111
		3HV8204	CLOSE	E089 GEN MAIN STM ISOLATION OR	HY	N/A	0.269	0.000			7.100	7.369	8.900	1.531
K305	MSIS	3HV8205	CLOSE	E088 GEN MAIN STM ISOLATION ON	HY	N/A	0.269	0.000			7.500	7.769	8.900	1.131
K313	MSIS	3HV4048	CLOSE	STEAM GEN E088 FW ISOL VALVE	EH	N/A	0.269	0.000			8.350	8.619	10.900	2.281
K406	MSIS	3HV4052	CLOSE	STEAM GEN E089 FW ISOL VALVE	EH	N/A	0.269	0.000			7.520	7.789	10.900	3.111
		3HV8204	CLOSE	E089 GEN MAIN STM ISOLATION OR	HY	N/A	0.269	0.000			7.100	7.369	8.900	1.531
K411	MSIS	3HV4054	CLOSE	SG 2E088 BLOWDOWN ISOLATION VALVE	AO	N/A	0.269	0.000			4.130	4.399	20.900	16.501
		3HV4056	CLOSE	STM GEN E088 WTR SAMPLE ISOL	AO	N/A	0.269	0.000			2.900	3.169	20.900	17.731
K623	MSIS	3HV4731	CLOSE	APW DISCHARGE TO SG 2E089 ELECTROHYDRAULIC ISOLATION VALVE	EH	N/A	0.269	0.000			2.600	2.869	40.900	38.031
		3HV4730	CLOSE	STEAM GENERATOR 2E088 APW ISOLATION VALVE	MO	8.400	0.269	0.000			9.100	17.769	40.900	23.131
K723	MSIS	3HV4713	CLOSE	APW P141 DISCHARGE TO STEAM GENERATOR 2E089 VALVE	MO	8.400	0.269	0.000			27.000	35.669	40.900	5.231
		3HV4763	CLOSE	AFWP 2P141 TO SG 2E009 DISCH VALVE BYPASS	EH	N/A	0.269	0.000			24.100	24.369	40.900	16.5.1
K104	RAS	P-015		LPSI PUMP		8.400			5.490			13.890	15.500	1.610
		3HV9303	CLOSE	CONTAINMENT SUMP SUCTION: OUTSIDE CONTAINMENT ISOLATION VALVE, TRAIN A	MO	8.400	0.369	0.000			29.900	38.669	50.700	12.031
K309	RAS	3HV9306	CLOSE	ECCS PUMPS COMBINED MINIFLOW TO RWST, TRAIN A VALVE	MO	8.400	0.369	0.000			38.300	47.069	50.700	3.631
K312	RAS	3HV9305	OPEN	CONTAINMENT SUMP SUCTION INSIDE CONTAINMENT ISOLATION VALVE, TRAIN A	MO	8.400	0.369	0.000			32.800	41.569	50.700	9.131
		3HV9307	CLOSE	ECCS PUMPS COMBINED MINIFLOW TO RWST, TRAIN A VALVE	MO	8.400	0.369	0.000			38.400	47.169	50.700	3.531
K101	SIAS	3HV7801	CLOSE	CNTMT AIRBORNE RAD MONITOR TR A ISOL	SO	N/A	0.351	0.000			0.500	0.851	1.900	1.049
		3HV7802	CLOSE	CNTMT AIRBORNE RAD MONITOR TR A ISOL	SO	N/A	0.351	0.000			0.500	0.851	1.900	1.049
		P-141		AUX FEED PUMP		8.400			29.900			38.300	40.500	2.200
K102	SIAS	P-024		CCW PUMP		8.400			15.100			23.500	25.500	2.000
		P-025		CCW PUMP		8.400			14.640			23.040	25.500	2.460
		3HV5388	CLOSE	INSTRUMENT AIR ISOLATION	AO	N/A	0.351	0.000			2.300	2.651	40.000	37.349
K108	SIAS	3HV7816	CLOSE	CNTMT AIRBORNE RAD MONITOR EMER SAMPLE TR A ISOL	SO	N/A	0.351	0.000			0.500	0.851	1.900	1.049
		P-190		CHARGING PUMP		8.400			0.000			8.400	10.000	1.600
		P-191		CHARGING PUMP		8.400			0.000			8.400	10.000	1.600
		P-012		CNTMT SPRAY PUMP		8.400			10.560			18.960	20.500	1.540
K109	SIAS	P-015		LPSI PUMP		8.400			5.490			13.890	15.500	1.610
K110	SIAS	P-017		HPSI PUMP		8.400			0.000			8.400	10.000	1.600
		P-018		HPSI PUMP		8.400			0.000			8.400	10.000	1.600
K301	SIAS	3HV9218	CLOSE	RC PUMP BLEED OFF TO VCT	AO	N/A	0.351	0.000			2.800	3.151	40.000	36.849
		3HV9205	CLOSE	REGEN HT EXCH TO LETDOWN HT EXCH	AO	N/A	0.351	0.000			1.400	1.751	40.000	38.249
K311	SIAS	3HV7810	CLOSE	CNTMT AIRBORNE PAD MONITOR TR A ISOL	SO	N/A	0.351	0.000			0.500	0.851	1.900	1.049
		3HV7811	CLOSE	CNTMT AIRBORNE RAD MONITOR TR A ISOL	SO	N/A	0.351	0.000			0.500	0.851	1.900	1.049
		3HV7259	CLOSE	CONTAINMENT ISOL SI TANK VENT HDR	AO	N/A	0.351	0.000			5.100	5.451	40.000	34.549
		3HV9823	CLOSE	CNTMT MINI PURGE SUP A374 ISO	AO	N/A	0.351	0.000			2.400	2.751	5.900	3.149
		3HV9825	CLOSE	CNTMT MINI PURGE EXH A060 ISO	AO	N/A	0.351	0.000			3.300	3.651	5.900	2.249
K408	SIAS	3HV9825	CLOSE	CNTMT MINI PURGE EXH A060 ISO	AO	N/A	0.351	0.000			3.300	3.651	5.900	2.249
		3HV0511	CLOSE	PRESSURIZER VAPOR SAMPLE CNTMT ISOL	AO	N/A	0.351	0.000			4.100	4.451	40.000	35.549
K409	SIAS	3HV0513	CLOSE	PRZR SURGE LN LIQ SAMPLE CNTMT ISOL	AO	N/A	0.351	0.000			2.940	3.291	40.000	36.709
		3HV0509	CLOSE	REAC CLNT HOT LEG SAMPLE CNTMT ISOL	AO	N/A	0.351	0.000			3.030	3.381	40.000	36.610

UNIT 3 ESF TRAIN A  
RESPONSE TIMES (SEC)

TRAIN A ESFAS ACTUATION RELAY AND COMPONENTS													
RELAY	ACTUATION	Equip ID	Test Typ	DESCRIPTION	Act_Type	DIESEL	LOGIC	K-RELAY	SEQUENCE	DEVICE	TOTAL	TS_MAX	ALLOWABLE
		3HV0516	CLOSE	REACTOR COOLANT DRAIN TANK SAMPLE CONTAINMENT ISOLATION VALVE	MO	8.400	0.351	0.000	DELAY	7.300	12.051	50.000	34.849
		3HV5803	CLOSE	CONTAINMENT SUMP TO RADWASTE SUMP VALVE	MO	8.400	0.351	0.000		12.653	21.351	50.000	29.549
		3HV0514	CLOSE	QUENCH TANK VAPOR SAMPLE CONTAINMENT ISOLATION VALVE	MO	8.400	0.351	0.000		10.370	19.121	50.000	31.779
		3HV9334	CLOSE	ST DRAIN TO RWT ISOLATION VALVE	MO	8.400	0.351	0.000		10.300	19.051	50.000	31.849
KA10	SAS	3HV9920	CLOSE	CONTAINMENT NORM COOL SUP ISO VV	AO	N/A	0.351	0.000		5.300	5.351	40.000	34.349
		3HV9921	CLOSE	CONTAINMENT NORM COOL RET ISO VV	AO	N/A	0.351	0.000		10.500	10.851	40.000	29.149

UNIT 3 ESF TRAIN B  
RESPONSE TIMES (SEC)

TRAIN B ESFAS ACTUATION RELAY AND COMPONENTS									SEQUENCE				
RELAY	ACTUATION	Equip_ID	Test_Type	DESCRIPTION	Act_Type	DIESEL	LOGIC	K-RELAY	DELAY	DEVICE	TOTAL	TS_MAX	ALLOWABLE
K306	CCAS	3HV6368	OPEN	CCW TO EMERGENCY COOLING UNIT 2E400 CONTAINMENT ISOLATION VALVE	MO	8.280	0.351	0.000		10.500	19.131	23.000	3.869
		3HV6369	OPEN	CCW FROM EMERGENCY COOLING UNIT 2E400 CONTAINMENT ISOLATION VALVE	MO	8.280	0.351	0.000		11.000	19.631	23.000	3.369
		3HV6372	OPEN	CCW TO EMERGENCY COOLING UNIT 2E402 CONTAINMENT ISOLATION VALVE	MO	8.280	0.351	0.000		11.000	19.631	23.000	3.369
		3HV6373	OPEN	CCW FROM EMERGENCY COOLING UNIT 2E402 CONTAINMENT ISOLATION VALVE	MO	8.280	0.351	0.000		10.800	19.431	23.000	3.569
K201	CIAS	3HV1105	CLOSE	STM GEN E089 FW BYPASS VALVE	AO	N/A	0.348	0.000		7.500	7.848	10.900	3.052
		3HV4051	CLOSE	STM GEN E089 FW BLOCK VALVE	EH	N/A	0.348	0.000		8.100	8.448	10.900	2.452
K202	CIAS	3TV9267	CLOSE	REGEN HEAT EXCHANGER E063 OUTLET VALVE	MO	8.280	0.348	0.000		16.000	24.628	50.900	26.272
		3HV9217	CLOSE	RCP CBO TO VCT INSIDE CONTAINMENT ISOLATION VALVE	MO	8.280	0.348	0.000		12.090	20.718	50.900	30.182
K203	CIAS	3HV9900	CLOSE	CONTAINMENT NORMAL CHILLED WATER DRAIN VALVE	MO	8.280	0.348	0.000		10.200	18.828	50.900	32.072
		3HV9971	CLOSE	CONTAINMENT NORMAL CHILLED WATER DRAIN VALVE	MO	8.280	0.348	0.000		9.300	17.928	50.900	32.972
K204	CIAS	3HV7800	CLOSE	CNTMT AIRBORNE RAD MONITOR TR B ISOL	SO	N/A	0.348	0.000		0.500	0.848	1.900	1.052
		3HV7803	CLOSE	CNTMT AIRBORNE RAD MONITOR TR B ISOL	SO	N/A	0.348	0.000		0.500	0.848	1.900	1.052
K205	CIAS	3HV5437	CLOSE	NITROGEN SUPPLY TO REACTOR COMP	AO	N/A	0.348	0.000		2.500	2.848	40.000	37.152
		3HV5434	CLOSE	NITROGEN TO SAFETY INJ TANKS	AO	N/A	0.348	0.000		3.600	3.948	40.000	36.052
		3HV7911	CLOSE	NUCL SERV WATER CONTAINMENT ISOL	AO	N/A	0.348	0.000		6.800	7.148	40.000	32.852
K206	CIAS	3HV7805	CLOSE	CNTMT AIRBORNE RAD MONITOR TR B ISOL	SO	N/A	0.348	0.000		0.500	0.848	1.900	1.052
		3HV9824	CLOSE	CNTMT MINI PURGE EXH A060 ISO	AO	N/A	0.348	0.000		3.500	3.848	5.900	2.052
		3HV7806	CLOSE	CNTMT AIRBORNE RAD MONITOR TR B ISOL	SO	N/A	0.348	0.000		0.500	0.848	1.900	1.052
		3HV7513	CLOSE	CONTAINMENT ISOL RC DRN TO RDW SYS	AO	N/A	0.348	0.000		5.400	5.748	40.000	34.252
		3HV7258	CLOSE	RCDT TO WASTE GAS SYSTEM CONTAINMENT ISOLATION VALVE	MO	8.280	0.348	0.000		35.400	44.028	50.900	6.872
K208	CIAS	3HV9821	CLOSE	CNTMT MINI PURGE SUP A374 ISO	AO	N/A	0.348	0.000		2.100	2.448	5.900	3.452
		3HV8205	CLOSE	E088 GEN MAIN STM ISOLATION ON	HY	N/A	0.348	0.000		7.500	7.848	8.900	1.052
		3HV4048	CLOSE	STEAM GEN E088 FW ISOL VALVE	EH	N/A	0.348	0.000		8.350	8.698	10.900	2.202
K209	CIAS	3HV4052	CLOSE	STEAM GEN E089 FW ISOL VALVE	EH	N/A	0.348	0.000		7.520	7.868	10.900	3.032
		3HV8204	CLOSE	E089 GEN MAIN STM ISOLATION OR	HY	N/A	0.348	0.000		7.100	7.448	8.900	1.452
K210	CIAS	3HV5804	CLOSE	CONTAINMENT SUMP TO RW ISOL VALVE	AO	N/A	0.348	0.000		5.000	5.348	40.000	34.652
		3HV0515	CLOSE	QUENCH TANK VAPOR SAMPLE CNTMT ISOL	AO	N/A	0.348	0.000		3.630	3.978	40.000	36.022
		3HV0512	CLOSE	PRESSURIZER SURGE LINE LIQUID SAMPLE CONTAINMENT ISOLATION VALVE	MO	8.280	0.348	0.000		8.210	16.838	50.900	34.062
		3HV0510	CLOSE	PRESSURIZER STEAM SAMPLE ISOLATION VALVE	MO	8.280	0.348	0.000		10.650	19.278	50.900	31.622
		3HV0508	CLOSE	RCS HOT LEG SAMPLE CONTAINMENT ISOLATION VALVE	MO	8.280	0.348	0.000		6.500	15.128	50.900	35.772
K213	CIAS	3HV0517	CLOSE	REACTOR COOLANT HOT LEG SAMPLE CONTAINMENT ISOLATION VALVE	MO	8.280	0.348	0.000		5.900	14.528	50.900	36.372
		3HV6216	CLOSE	CCW NCL CONTAINMENT RETURN ISOLATION VALVE	MO	8.280	0.348	0.000		10.190	18.818	50.900	32.082
		3HV6213	CLOSE	CCW DISCHARGE TO NON-CRITICAL LOOP	AO	N/A	0.348	0.000		9.700	10.048	20.900	10.852
		3HV6211	CLOSE	CCW NON-CRITICAL LOOP CONTAINMENT ISOLATION VALVE	MO	8.280	0.348	0.000		11.300	19.928	40.000	20.072
		3HV6219	CLOSE	CCW PUMP SUCTION FROM NON-CRITICAL LOOP	AO	N/A	0.348	0.000		10.000	10.348	20.900	10.552
K307	CIAS	3HV8204	CLOSE	E089 GEN MAIN STM ISOLATION OR	HY	N/A	0.348	0.000		7.100	7.448	8.900	1.452
		3HV4052	CLOSE	STEAM GEN E089 FW ISOL VALVE	EH	N/A	0.348	0.000		7.520	7.868	10.900	3.032
K314	CIAS	3HV8205	CLOSE	E088 GEN MAIN STM ISOLATION ON	HY	N/A	0.348	0.000		7.500	7.848	8.900	1.052
		3HV4048	CLOSE	STEAM GEN E088 FW ISOL VALVE	EH	N/A	0.348	0.000		8.350	8.698	10.900	2.202
		3HV4051	CLOSE	STM GEN E089 FW BLOCK VALVE	EH	N/A	0.348	0.000		8.100	8.448	10.900	2.452
K304	CSAS	3HV6500	OPEN	CCW TO SHUTDOWN HEAT EXCH	EH	N/A	0.398	0.000		5.900	6.298	23.000	16.702
		3HV9368	OPEN	CONTAINMENT SPRAY TRAIN B ISOLATION VALVE	MO	8.280	0.398	0.000		9.400	18.078	23.000	4.922
K211	EFAS-1	3HV8200	OPEN	MAIN STEAM FROM STEAM GEN TO AF PUMP	AO	N/A	0.629	0.000		2.100	2.729	42.700	39.971
		3HV4053	CLOSE	SG 2E089 BLOWDOWN ISOLATION VALVE	AO	N/A	0.629	0.000		6.540	7.169	20.900	13.731
		3HV4715	OPEN	STEAM GENERATOR 2E089 AFW ISOLATION VALVE	MO	8.280	0.629	0.000		9.800	18.709	52.700	33.991
		3HV4706	OPEN	AUX FEEDWATER P140 OUTLET TO STEAM GENERATOR 2E089 CONTROL VALVE	MO	8.280	0.629	0.000		29.100	38.009	52.700	14.691
K624	EFAS-1	3HV4706	OPEN	AUX FEEDWATER P140 OUTLET TO STEAM GENERATOR 2E089 CONTROL VALVE	MO	8.280	0.629	0.000		29.100	38.009	52.700	14.691

UNIT 3 ESF TRAIN B  
RESPONSE TIMES (SEC)

TRAIN B ESF AS ACTUATION RELAY AND COMPONENTS													
RELAY	ACTUATION	Equip_ID	Test_Type	DESCRIPTION	Act_Type	DIESEL	LOGIC	K-RELAY	SEQUENCE DELAY	DEVICE	TOTAL	TS_MAX	ALLOWABLE
K724	EFAS-1	3HV4715	OPEN	STEAM GENERATOR 2E089 AFW ISOLATION VALVE	MO	8.280	0.629	0.000		9.800	18.709	52.700	33.991
K112	EFAS-2	P-504		AUX FEED PUMP		8.280			30.550		38.830	40.500	1.670
		3HV4712	OPEN	AFW P504 DISCHARGE TO STEAM GENERATOR 2E088 CONTROL VALVE	MO	8.280	0.416	0.000		28.200	36.896	40.900	4.004
K118	EFAS-2	3HV4714	OPEN	AFW DISCHARGE TO SG 2E088 ISOLATION VALVE	EH	N/A	0.416	0.000		4.600	5.016	40.900	35.884
K625	EFAS-2	3HV4762	CLOSE	AFWP 2P604 TO SG 2E088 DSCH VALVE BYPASS	EH	N/A	0.416	0.000		20.300	20.716	40.900	20.184
K725	EFAS-2	3HV4712	OPEN	AFWP P504 DISCHARGE TO STEAM GENERATOR 2E088 CONTROL VALVE	MO	8.280	0.416	0.000		28.200	36.896	40.900	4.004
K105	MSIS	3HV4714	OPEN	AFW DISCHARGE TO SG 2E088 ISOLATION VALVE	EH	N/A	0.416	0.000		4.600	5.016	40.900	35.884
		3HV8421	CLOSE	MAIN STEAM DUMP TO ATMOSPHERE	AO	N/A	0.269	0.000		2.030	2.299	20.900	18.601
		3HV4052	CLOSE	STEAM GEN E089 FW ISOL VALVE	EH	N/A	0.269	0.000		7.520	7.789	10.900	3.111
		3HV8204	CLOSE	E089 GEN MAIN STM ISOLATION OR	HY	N/A	0.269	0.000		7.100	7.369	8.900	1.531
K106	MSIS	3HV8205	CLOSE	E089 GEN MAIN STM ISOLATION ON	HY	N/A	0.269	0.000		7.500	7.769	8.900	1.131
		3HV4048	CLOSE	STEAM GEN E088 FW ISOL VALVE	EH	N/A	0.269	0.000		8.350	8.619	10.900	2.281
K305	MSIS	3HV8204	CLOSE	E089 GEN MAIN STM ISOLATION OR	HY	N/A	0.269	0.000		7.100	7.369	8.900	1.531
K313	MSIS	3HV8205	CLOSE	E088 GEN MAIN STM ISOLATION ON	HY	N/A	0.269	0.000		7.500	7.769	8.900	1.131
		3HV4048	CLOSE	STEAM GEN E088 FW ISOL VALVE	EH	N/A	0.269	0.000		8.350	8.619	10.900	2.281
K406	MSIS	3HV4052	CLOSE	STEAM GEN E089 FW ISOL VALVE	EH	N/A	0.269	0.000		7.520	7.789	10.900	3.111
K411	MSIS	3HV4053	CLOSE	SG 2E089 BLOWDOWN ISOLATION VALVE	AO	N/A	0.269	0.000		6.540	6.809	20.900	14.091
		3HV4057	CLOSE	STM GEN E089 WTR SAMPLE ISOL	AO	N/A	0.269	0.000		3.400	3.669	20.900	17.231
K623	MSIS	3HV4706	CLOSE	AUX FEEDWATER P140 OUTLET TO STEAM GENERATOR 2E089 CONTROL VALVE	N/O	8.280	0.269	0.000		29.500	38.049	40.900	2.851
		3HV4712	CLOSE	AFW P504 DISCHARGE TO STEAM GENERATOR 2E088 CONTROL VALVE	MO	8.280	0.269	0.000		27.800	36.349	40.900	4.551
K723	MSIS	3HV4715	CLOSE	STEAM GENERATOR 2E089 AFW ISOLATION VALVE	MO	8.280	0.269	0.000		10.600	19.149	40.900	21.751
		3HV4762	CLOSE	AFWP 2P604 TO SG 2E088 DSCH VALVE BYPASS	EH	N/A	0.269	0.000		20.300	20.569	40.900	20.331
K104	RAS	P-016		LPSI PUMP		8.280			4.260		12.540	15.500	2.960
		3HV9302	OPEN	CONTAINMENT SUMP SUCTION OUTSIDE CONTAINMENT ISOLATION VALVE, TRAIN B	MO	8.280	0.369	0.000		29.600	38.249	50.700	12.451
K309	RAS	3HV9347	CLOSE	ECCS PUMPS COMBINED MINIFLOW TO RWST, TRAIN B VALVE	MO	8.280	0.369	0.000		36.400	45.049	50.700	5.551
K312	RAS	3HV9304	OPEN	CONTAINMENT SUMP SUCTION INSIDE CONTAINMENT ISOLATION VALVE, TRAIN B	MO	8.280	0.369	0.000		31.700	40.349	50.700	10.351
		3HV9348	CLOSE	ECCS PUMPS COMBINED MINIFLOW TO RWST, TRAIN B VALVE	MO	8.280	0.369	0.000		35.000	43.649	50.700	7.051
K101	SIAS	3HV7800	CLOSE	CNITMT AIRBORNE RAD MONITOR TR B ISOL	SO	N/A	0.351	0.000		0.500	0.851	1.900	1.049
		3HV7803	CLOSE	CNITMT AIRBORNE RAD MONITOR TR B ISOL	SO	N/A	0.351	0.000		0.500	0.851	1.900	1.049
		P-504	STOP	AUX FEED PUMP		8.280			30.550		38.830	40.500	1.670
K102	SIAS	P-026		CCW PUMP		8.280			15.350		23.630	25.500	1.870
		P-025		CCW PUMP (KIRK KEY)		8.280			14.900		23.180	25.500	2.320
		3HV5437	CLOSE	NITROGEN SUPPLY TO REACTOR COMP	AO	N/A	0.351	0.000		2.500	2.851	40.000	37.149
		3HV5434	CLOSE	NITROGEN TO SAFETY INJ TANKS	AO	N/A	0.351	0.000		3.600	3.951	40.000	36.049
		3HV5686	CLOSE	FIRE WATER TO CONTAINMENT ISOLATION VALVE	MO	8.280	0.351	0.000		32.010	40.641	50.900	10.259
K108	SIAS	P-192		CHARGING PUMP		8.280			0.000		8.280	10.000	1.720
		P-191		CHARGING PUMP		8.280			0.000		8.280	10.000	1.720
		P-013		CONTAINMENT SPRAY PUMP		8.280			10.140		18.420	20.500	2.080
K109	SIAS	P-016		LPSI PUMP		8.280			4.260		12.540	15.500	2.960
K110	SIAS	P-019		HPSI PUMP		8.280			0.000		8.280	10.000	1.720
		P-018		HPSI PUMP		8.280			0.000		8.280	10.000	1.720
K301	SIAS	2TV9267	CLOSE	REGEN HEAT EXCHANGER E063 OUTLET VALVE	MO	8.280	0.351	0.000		16.000	24.631	50.900	26.269
		3HV9217	CLOSE	RCP CBO TO VCT INSIDE CONTAINMENT ISOLATION VALVE	MO	8.280	0.351	0.000		12.090	20.721	50.900	30.179
K311	SIAS	3HV9821	CLOSE	CNITMT MINI PURGE SUP A374 ISO	AO	N/A	0.351	0.000		2.100	2.451	5.900	3.449
		3HV9824	CLOSE	CNITMT MINI PURGE EXH A060 ISO	AO	N/A	0.351	0.000		3.500	3.851	5.900	2.049
		3HV7806	CLOSE	CNITMT AIRBORNE RAD MONITOR TR B ISOL	SO	N/A	0.351	0.000		0.500	0.851	1.900	1.049
		3HV7513	CLOSE	CONTAINMENT ISOL RC DRN TO RDW SYS	AO	N/A	0.351	0.000		5.400	5.751	40.000	34.249

UNIT 3 ESF TRAIN B  
RESPONSE TIMES (SEC)

TRAIN B ESFAS ACTUATION RELAY AND COMPONENTS									SEQUENCE				
RELAY	ACTUATION	Equip_ID	Test_Type	DESCRIPTION	Act_Type	DIESEL	LOGIC	K-RELAY	DELAY	DEVICE	TOTAL	TS_MAX	ALLOWABLE
		3HV7805	CLOSE	CNTMT AIRBORNE RAD MONITOR TR B ISOL	SO	N/A	0.351	0.000		0.500	0.851	1.900	1.049
		3HV7258	CLOSE	RCDT TO WASTE GAS SYSTEM CONTAINMENT ISOLATION VALVE	MO	8.280	0.351	0.000		35.400	44.031	50.900	6.869
K408	SIAS	3HV9324	CLOSE	CNTMT MINI PURGE EXH A060 ISO	AO	N/A	0.351	0.000		3.500	3.851	5.900	2.049
K409	SIAS	3HV5804	CLOSE	CONTAINMENT SUMP TO RW ISOL VALVE	AO	N/A	0.351	0.000		5.000	5.351	40.000	34.649
		3HV0515	CLOSE	QUENCH TANK VAPOR SAMPLE CNTMT ISO	AO	N/A	0.351	0.000		3.630	3.981	40.000	36.019
		3HV0512	CLOSE	PRESSURIZER SURGE LINE LIQUID SAMPLE CONTAINMENT ISOLATION VALVE	MO	8.280	0.351	0.000		8.210	16.841	50.900	34.059
		3HV0510	CLOSE	PRESSURIZER STEAM SAMPLE ISOLATION VALVE	MO	8.280	0.351	0.000		10.650	19.281	50.900	31.619
		3HV0508	CLOSE	RCS HOT LEG SAMPLE CONTAINMENT ISOLATION VALVE	MO	8.280	0.351	0.000		6.500	15.131	50.900	35.769
		3HV0517	CLOSE	REACTOR COOLANT HOT LEG SAMPLE CONTAINMENT ISOLATION VALVE	MO	8.280	0.351	0.000		5.900	14.531	50.900	36.369
K410	SIAS	3HV9900	CLOSE	CONTAINMENT NORMAL CHILLED WATER DRAIN VALVE	MO	8.280	0.351	0.000		10.200	18.831	50.900	32.069
		3HV9971	CLOSE	CONTAINMENT NORMAL CHILLED WATER DRAIN VALVE	MO	8.280	0.351	0.000		9.300	17.931	50.900	32.969