



Table A5.11, Operator Actions Added to Fault Tree Logic

Operator Action	Prob	Reference	Description
A-AVOE-AVMAN	3.38E-2	Fire IPEEE	Operator action to open AFW flow control valves on auto signal failure
F-PMOE-FPS	3.40E-2	Fire IPEEE	Operator action to start fire pumps on auto signal failure
G-MVOA-CBALLOCAL	1.0	NA (conservatively set to value of 1)	Operator action to open locally MO-2140 or MO-2160
H-AVOA-SUB-LOCAL	1.0	NA (conservatively set to value of 1)	Operator action to open locally CV-3070
H-MVOA-3072LOCAL	1.0	NA (conservatively set to value of 1)	Operator action to bypass MO-3072 I&C failure
H-MVOA-CHG2HPSI	3.40E-2		Operator action to align charging to primary system
H-MVOA-HPSI-LOCAL	1.0E-2	Fire IPEEE	Operator action to align HPSI injection valves locally
M-MVOA-0510LOCAL	1.0	NA (conservatively set to value of 1)	Operator action to open MO-0510 locally
M-CVOA-MSIVLOCAL	0.1	Screening value	Operator action to trip closed MSIVs locally
P-CBOT-TFXFR	1E-2	Fire IPEEE	Operator action to manually align fast transfer
U-PMOE-P5	1.0	NA (conservatively set to value of 1)	Operator action to align warm water recirc pump
U-PMOE-PUMP	1.0	NA (conservatively set to value of 1)	Operator action to start P7B on auto start failure



Table A5.12: Hot Short Failure Modes Added to Fault Trees (not used in this analysis)

Hot Short	Prob	Description
G-MVMD-MO-2140HS	1.0	Hot short of MO-2140 FTRO
G-MVMD-MO-2160HS	1.0	Hot short of MO-2160 FTRO
H-MVMC-MO-3007HS	1.0	Hot short of MO-3007 FTRC (ISLOCA)
H-MVMD-MO-3007HS	1.0	Hot short of MO-3007 FTRO
H-MVMC-MO-3009HS	1.0	Hot short of MO-3009 FTRC (ISLOCA)
H-MVMD-MO-3009HS	1.0	Hot short of MO-3009 FTRO
H-MVMC-MO-3011HS	1.0	Hot short of MO-3011 FTRC (ISLOCA)
H-MVMD-MO-3011HS	1.0	Hot short of MO-3011 FTRO
H-MVMC-MO-3013HS	1.0	Hot short of MO-3013 FTRC (ISLOCA)
H-MVMD-MO-3013HS	1.0	Hot short of MO-3013 FTRO
H-MVMC-MO-3062HS	1.0	Hot short of MO-3062 FTRC (ISLOCA)
H-MVMD-MO-3062HS	1.0	Hot short of MO-3062 FTRO
H-MVMC-MO-3064HS	1.0	Hot short of MO-3064 FTRC (ISLOCA)
H-MVMD-MO-3064HS	1.0	Hot short of MO-3064 FTRO
H-MVMC-MO-3066HS	1.0	Hot short of MO-3066 FTRC (ISLOCA)
H-MVMD-MO-3066HS	1.0	Hot short of MO-3066 FTRO
H-MVMC-MO-3068HS	1.0	Hot short of MO-3068 FTRC (ISLOCA)
H-MVMD-MO-3068HS	1.0	Hot short of MO-3068 FTRO
H-MVMD-MO-3072HS	1.0	Hot short of MO-3072 FTRO
L-MVMC-MO-3008HS	1.0	Hot short of MO-3008 FTRC (ISLOCA)
L-MVMD-MO-3008HS	1.0	Hot short of MO-3008 FTRO
L-MVMC-MO-3010HS	1.0	Hot short of MO-3010 FTRC (ISLOCA)
L-MVMD-MO-3010HS	1.0	Hot short of MO-3010 FTRO
L-MVMC-MO-3012HS	1.0	Hot short of MO-3012 FTRC (ISLOCA)
L-MVMD-MO-3012HS	1.0	Hot short of MO-3012 FTRO
L-MVMC-MO-3014HS	1.0	Hot short of MO-3014 FTRC (ISLOCA)
L-MVMD-MO-3014HS	1.0	Hot short of MO-3014 FTRO
L-MVMC-MO-3189HS	1.0	Hot short of MO-3189 FTRC
L-MVMC-MO-3198HS	1.0	Hot short of MO-3198 FTRC
L-MVMD-MO-3190HS	1.0	Hot short of MO-3190 FTRO
L-MVMD-MO-3199HS	1.0	Hot short of MO-3199 FTRO



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Table A6.1: IPEEE Table 4.7-3 Palisades Ignition Source Frequencies and Combustible Loading			
FIRE AREA	DESCRIPTION	COMBUSTIBLE LOADING	IGNITION SOURCE FREQUENCY (yr)
1	Control Room Exposure Fire Cabinet Fire	Moderate	2.43E-3 9.50E-3
2	Cable Spreading Room Exposure Fire Cabinet Fire	Moderate	3.19E-3 3.20E-3
3	1D Switchgear Room Exposure Fire Cabinet Fire	Moderate	9.81E-4 3.75E-3
4	1C Switchgear Room Exposure Fire Cabinet Fire	Moderate	4.15E-4 3.75E-3
5	Diesel Generator 1-1	Light	1.69E-2
6	Diesel Generator 1-2	Light	1.72E-2
7 & 8	Diesel Day Tanks	Heavy	N/A - Screened
9A	Intake Structure - East Side (SWS)	Light	7.20E-3
9B	Intake Structure - West Side (FPS)	Light	7.20E-3
10	East Engineered Safeguards	Minimal	2.36E-3
11	Battery Room #2	Moderate	1.60E-3
12	Battery Room #1	Moderate	1.60E-3
13A1	Auxiliary Building 590' Corridor (CCW to Charging)	Minimal	1.99E-3
13A2	Auxiliary Building 590' Corridor (Except Zone 13A1)	Moderate	5.37E-3
13B	Charging Pump Room	Minimal	2.06E-3
13C	All Other Areas on the 590' Auxiliary Building	Minimal - Moderate	1.15E-2
14	Containment Building	Light	N/A
15	Engineered Safeguards Panel Room	Moderate	1.50E-4
16	Component Cooling Water Pump Room	Minimal	2.36E-3
17	Refueling and Spent Fuel Pool Room	Minimal	N/A - Screened
18	Demineralizer Room	Minimal	N/A - Screened
19	Compactor Area - Track Alley	Minimal - Moderate	N/A - Screened
20	Spent Fuel Pool Equipment Room	Minimal	6.02E-4
21A	Electric Equipment Room - East Side (Bus 19)	Light	3.80E-3
21B	Electric Equipment Room - West Side (Bus 20)	Light	3.80E-3
22	Turbine Lube Oil Room	Heavy	N/A - Screened
23E	Turbine Building East Side	Moderate	2.94E-2
23S	Turbine Building South Side	Heavy	6.42E-2
23W	Turbine Building West Side	Moderate	1.55E-3
24	Auxiliary Feedwater Pump Room	Minimal	2.27E-4
25	Heating Boiler Rooms	Moderate	N/A - Screened



FIRE AREA	DESCRIPTION	COMBUSTIBLE LOADING	IGNITION SOURCE FREQUENCY (yr)
26	Southwest Cable Penetration Room	Moderate	6.89E-5
27	Radwaste Addition - VRS	Moderate	N/A - Screened
28	West Engineered Safeguards	Minimal	2.74E-3
29	Center Mechanical Equipment Rooms	Minimal	N/A - Screened
30	East Mechanical Equipment Rooms	Moderate	N/A - Screened
31	West Mechanical Equipment Rooms	Moderate	N/A - Screened
32	SIRW Tank/CCW Roof Area	Minimal	4.85E-5
33	Technical Support Center	Moderate	N/A - Screened
34	Man Hole #1, #2, #3	Light	3.97E-5



Table A6.2, Fault Tree/Fire Area Frequencies

Fault Tree	Frequency/yr	Description
FA-1	2.43E-03	GENERAL AREA FIRE
FA-1-EC-01L	9.50E-03	LEFT CH PANEL EC-01/CONTROL ROOM CAB FIRE
FA-1-EC-01R	9.50E-03	RIGHT CH PANEL EC-01/CONTROL ROOM CAB FIRE
FA-1-EC-02L	9.50E-03	LEFT CH PANEL EC-02/CONTROL ROOM CAB FIRE
FA-1-EC-02R	9.50E-03	RIGHT CH PANEL EC-02/CONTROL ROOM CAB FIRE
FA-1-EC-03L	9.50E-03	LEFT CH PANEL EC-03/CONTROL ROOM CAB FIRE
FA-1-EC-03R	9.50E-03	RIGHT CH PANEL EC-03/CONTROL ROOM CAB FIRE
FA-1-EC-04L	9.50E-03	LEFT CH PANEL EC-04/CONTROL ROOM CAB FIRE
FA-1-EC-04R	9.50E-03	RIGHT CH PANEL EC-04/CONTROL ROOM CAB FIRE
FA-1-EC-08L	9.50E-03	LEFT CH PANEL EC-08/CONTROL ROOM CAB FIRE
FA-1-EC-08R	9.50E-03	RIGHT CH PANEL EC-08/CONTROL ROOM CAB FIRE
FA-1-EC-106	9.50E-03	CLG TWR MASTER SUPRVISORY & CONT CABINET CAB FIRE
FA-1-EC-11L	9.50E-03	LEFT CH RAD/TURBINE AUX MONITOR PANEL CAB FIRE
FA-1-EC-11R	9.50E-03	RIGHT CH RAD/TURBINE AUX MONITOR PANEL CAB FIRE
FA-1-EC-126	9.50E-03	CIRCULATION WATER & IODINE REMOVAL PANEL CAB FIRE
FA-1-EC-12L	9.50E-03	LEFT CH PRIMARY SYSTEM CONTROL PANEL CAB FIRE
FA-1-EC-12R	9.50E-03	RIGHT CH PRIMARY SYSTEM CONTROL PANEL CAB FIRE
FA-1-EC-13L	9.50E-03	L CH DBA/SHTDWN & MISC LOADS CNTRL PNL CAB FIRE
FA-1-EC-13R	9.50E-03	R CH DBA/SHTDWN & MISC LOADS CNTRL PNL CAB FIRE
FA-10	2.36E-03	EAST ENGINEERED SAFEGUARDS EXP FIRE
FA-11	1.60E-03	BATTERY ROOM 2 EXP FIRE
FA-12	1.60E-03	BATTERY ROOM 1 EXP FIRE
FA-13-13A1	1.99E-03	AUX BLDNG 590' CORRDR (CCW - CHARGING) EXP FIRE
FA-13-13A2	5.37E-03	AUX BLDNG 590' CORRDR (EXCEPT ZNE 13A1) EXP FIRE
FA-13-13B	2.06E-03	CHARGING PUMP ROOM EXP FIRE
FA-13-13C	1.15E-02	ALL OTHR AREAS AT 590' AUXI BLDNG EXP FIRE
FA-14	1.00E+00	CONTAINMENT BUILDING
FA-15	1.50E-04	ENGINEERED SAFEGUARDS PANEL ROOM EXP FIRE
FA-16	2.36E-03	COMPONENT COOLING WATER ROOM EXP FIRE
FA-18	1.00E+00	DEMINERALIZER ROOM EXP FIRE
FA-2	3.10E-03	CSR EXP FIRE
FA-2-EB-01	3.20E-03	CSR 480 V MCC NO.1 CAB FIRE
FA-2-EB-02	3.20E-03	CSR 480 V MCC NO.2 CAB FIRE
FA-2-EB-11	3.20E-03	CSR 480 V BUS NO. 11 CAB FIRE
FA-2-EB-12	3.20E-03	CSR 480 V BUS NO. 12 CAB FIRE
FA-2-EB-21	3.20E-03	CSR 480 V MCC #21 CAB FIRE
FA-2-EB-23	3.20E-03	CSR 480 V MCC #23 CAB FIRE
FA-2-EB-24	3.20E-03	CSR 480 V MCC #24 CAB FIRE
FA-2-ED-06	3.20E-03	CSR INVERTER NO. 1 CAB FIRE
FA-2-ED-07	3.20E-03	CSR INVERTER NO. 2 CAB FIRE
FA-2-ED-08	3.20E-03	CSR INVERTER NO. 3 CAB FIRE



Table A6.2, Fault Tree/Fire Area Frequencies

Fault Tree	Frequency/yr	Description
FA-2-ED-09	3.20E-03	CSR INVERTER NO. 4 CAB FIRE
FA-2-ED-10	3.20E-03	CSR 125 V BUS NO. 1- LEFT SIDE - TIE BKR CAB FIRE
FA-2-ED-11	3.20E-03	CSR 125 V BUS CAB FIRE
FA-2-ED-15	3.20E-03	CSR BATTERY CHARGER NO. 1 CAB FIRE
FA-2-ED-16	3.20E-03	CSR BATTERY CHARGER NO. 2 CAB FIRE
FA-2-ED-17	3.20E-03	CSR BATTERY CHARGER NO. 3 CAB FIRE
FA-2-ED-18	3.20E-03	CSR BATTERY CHARGER NO. 4 CAB FIRE
FA-2-ED-20	3.20E-03	CSR CSR 125 VDC BUS NO. 2 CAB FIRE
FA-2-ED-21	3.20E-03	CSR CSR 125 VOLTS DC DISTRIBUTION PANEL CAB FIRE
FA-2-EJ-14A	3.20E-03	CSR J BOX EJ-14A CAB FIRE
FA-2-EJ-542	3.20E-03	CSR J BOX EJ-542 CAB FIRE
FA-2-EJ-543	3.20E-03	CSR J BOX EJ-543 CAB FIRE
FA-2-EJ-575	3.20E-03	CSR J BOX EJ-575 CAB FIRE
FA-2-EJ-576	3.20E-03	CSR J BOX EJ-576 CAB FIRE
FA-2-EY-01	3.20E-03	CSR INSTRUMENT AC PANEL CAB FIRE
FA-2-EY-10	3.20E-03	CSR PREFERRED AC BUS NO. 1 INVERTER CAB FIRE
FA-2-EY-20	3.20E-03	CSR PREFERRED AC BUS NO. 2 INVERTER CAB FIRE
FA-2-EY-30	3.20E-03	CSR PREFERRED AC BUS NO. 3 INVERTER CAB FIRE
FA-2-EY-40	3.20E-03	CSR PREFERRED AC BUS NO. 4 INVERTER CAB FIRE
FA-2-EY-50	3.20E-03	CSR EY-01 PANEL TRANSFER SWITCH CAB FIRE
FA-20	6.02E-04	SPENT FUEL POOL EQUIPMENT ROOM EXP FIRE
FA-21-21A	3.80E-03	EEQUIP ROOM - EAST SIDE (BUS 19) EXP FIRE
FA-21-21B	3.80E-03	EEQUIP ROOM - WEST SIDE (BUS 20) EXP FIRE
FA-23-23E	2.94E-02	TURBINE BUILDING EAST SIDE EXP FIRE
FA-23-23S	6.42E-02	TURBINE BUILDING SOUTH SIDE EXP FIRE
FA-23-23W	1.55E-03	TURBINE BUILDING WEST SIDE EXP FIRE
FA-24	2.27E-04	AUXILIARY FEEDWATER PUMP ROOM EXP FIRE
FA-25	1.00E+00	HEATING BOILER ROOMS EXP FIRE
FA-26	6.89E-05	SOUTHWEST CABLE PENETRATION ROOM EXP FIRE
FA-28	2.74E-03	WEST ENGINEERED SAFEGUARDS EXP FIRE
FA-3	9.81E-04	1D SWITCHGR LOGICAL PLACEHOLDER
FA-3-EA-12	3.75E-03	1D SWITCHGR 2400 V BUS 1D CAB FIRE
FA-3-EB-22	3.75E-03	1D SWITCHGR 4160 V BUS 1B CAB FIRE
FA-3-EC-181	3.75E-03	1D SWITCHGR MSIV SOLENOID VALVE PANEL CAB FIRE
FA-3-EC-187	3.75E-03	1D SWITCHGR AFW ACTUATION CABINET CAB FIRE
FA-3-EJ-1005	3.75E-03	1D SWITCHGR J BOX J-1005 CAB FIRE
FA-3-EJ-1006	3.75E-03	1D SWITCHGR J BOX J-1006 CAB FIRE
FA-3-EJ-1051	3.75E-03	1D SWITCHGR J BOX J-1051 CAB FIRE
FA-3-EJ-1052	3.75E-03	1D SWITCHGR J BOX J-1052 CAB FIRE
FA-3-EJ-9401	3.75E-03	1D SWITCHGR J BOX J-9401 CAB FIRE
FA-32	4.85E-05	SIRW TANK/CCW ROOF AREA EXP FIRE
FA-34	3.97E-05	MAN HOLE #1, #2, #3 EXP FIRE



Table A6.2, Fault Tree/Fire Area Frequencies

Fault Tree	Frequency/yr	Description
FA-4	4.15E-04	1C SWITCHGR LOGICAL PLACEHOLDER
FA-4-EA-11	3.75E-03	1C SWITCHGR 2400 V BUS 1C CAB FIRE
FA-4-ED-11A	3.75E-03	1C SWITCHGR ED-11A 125 VOLTS DC DIST PANEL CAB FIRE
FA-4-EJ-9400	3.75E-03	1C SWITCHGR J BOX J-9400 CAB FIRE
FA-5	1.69E-02	DIESEL GENERATOR 1-1 (LOGICAL PLACEHOLDER)
FA-6	1.72E-02	DIESEL GENERATOR 1-2 (LOGICAL PLACEHOLDER)
FA-7	1.00E+00	DIESEL GENERATOR 1-1 (LOGICAL PLACEHOLDER)
FA-8	1.00E+00	DIESEL GENERATOR 1-2 (LOGICAL PLACEHOLDER)
FA-9-9A	7.20E-03	INTAKE STRUCTURE - EAST SIDE (SWS) EXP FIRE
FA-9-9B	7.20E-03	INTAKE STRUCTURE - WEST SIDE (FPS) EXP FIRE



Table A6.3, Fire Area Assigned Logical Event and Frequency

Fire Area Assigned Logical Event	Frequency/yr	Description
IE-FA-1	1.00E+00	LOGICAL PLACEHOLDER
IE-FA-1-EC-01L	9.50E-03	LEFT CH PANEL EC-01/CONTROL ROOM CAB FIRE (MOD)(IE Freq)
IE-FA-1-EC-01R	9.50E-03	RIGHT CH PANEL EC-01/CONTROL ROOM CAB FIRE (MOD)(IE Freq)
IE-FA-1-EC-02L	9.50E-03	LEFT CH PANEL EC-02/CONTROL ROOM CAB FIRE (MOD)(IE Freq)
IE-FA-1-EC-02R	9.50E-03	RIGHT CH PANEL EC-02/CONTROL ROOM CAB FIRE (MOD)(IE Freq)
IE-FA-1-EC-03L	9.50E-03	LEFT CH PANEL EC-03/CONTROL ROOM CAB FIRE (MOD)(IE Freq)
IE-FA-1-EC-03R	9.50E-03	RIGHT CH PANEL EC-03/CONTROL ROOM CAB FIRE (MOD)(IE Freq)
IE-FA-1-EC-04L	9.50E-03	LEFT CH PANEL EC-04/CONTROL ROOM CAB FIRE (MOD)(IE Freq)
IE-FA-1-EC-04R	9.50E-03	RIGHT CH PANEL EC-04/CONTROL ROOM CAB FIRE (MOD)(IE Freq)
IE-FA-1-EC-08L	9.50E-03	LEFT CH PANEL EC-08/CONTROL ROOM CAB FIRE (MOD)(IE Freq)
IE-FA-1-EC-08R	9.50E-03	RIGHT CH PANEL EC-08/CONTROL ROOM CAB FIRE (MOD)(IE Freq)
IE-FA-1-EC-106	9.50E-03	CLG TWR MASTER SUPRVISORY & CONT CABINET CAB FIRE (MOD)(IE Freq)
IE-FA-1-EC-11L	9.50E-03	LEFT CH RAD/TURBINE AUX MONITOR PANEL CAB FIRE (MOD)(IE Freq)
IE-FA-1-EC-11R	9.50E-03	RIGHT CH RAD/TURBINE AUX MONITOR PANEL CAB FIRE (MOD)(IE Freq)
IE-FA-1-EC-126	9.50E-03	CIRCULATION WATER & IODINE REMOVAL PANEL CAB FIRE (MOD)(IE Freq)
IE-FA-1-EC-12L	9.50E-03	LEFT CH PRIMARY SYSTEM CONTROL PANEL CAB FIRE (MOD)(IE Freq)
IE-FA-1-EC-12R	9.50E-03	RIGHT CH PRIMARY SYSTEM CONTROL PANEL CAB FIRE (MOD)(IE Freq)
IE-FA-1-EC-13L	9.50E-03	L CH DBA/SHTDWN & MISC LOADS CNTRL PNL CAB FIRE (MOD)(IE Freq)
IE-FA-1-EC-13R	9.50E-03	R CH DBA/SHTDWN & MISC LOADS CNTRL PNL CAB FIRE (MOD)(IE Freq)
IE-FA-10	2.36E-03	EAST ENGINEERED SAFEGUARDS EXP FIRE (MINIMAL)(IE Freq)
IE-FA-11	1.60E-03	BATTERY ROOM 2 EXP FIRE (MODERATE)(IE Freq)
IE-FA-12	1.60E-03	BATTERY ROOM 1 EXP FIRE (MODERATE)(IE Freq)
IE-FA-13-13A1	1.99E-03	AUX BLDNG 590' CORRDR (CCW - CHARGING) EXP FIRE (MIN)(IE Freq)
IE-FA-13-13A2	5.37E-03	AUX BLDNG 590' CORRDR (EXCEPT ZNE 13A1) EXP FIRE (MOD)(IE Freq)
IE-FA-13-13B	2.06E-03	CHARGING PUMP ROOM EXP FIRE (MIN)(IE Freq)
IE-FA-13-13C	1.15E-02	ALL OTHR AREAS AT 590' AUXI BLDNG EXP FIRE (MIN-MOD)(IE Freq)
IE-FA-14	1.00E+00	CONTAINMENT BUILDING (IE-Freq - N/A)
IE-FA-15	1.50E-04	ENGINEERED SAFEGUARDS PANEL ROOM EXP FIRE (MOD)(IE Freq)
IE-FA-16	2.36E-03	COMPONENT COOLING WATER ROOM EXP FIRE (MIN)(IE Freq)
IE-FA-18	1.00E+00	DEMINERALIZER ROOM EXP FIRE (MIN)(IE-Freq - N/A)
IE-FA-2	3.10E-03	CSR EXP FIRE (MOD)(IE Freq)
IE-FA-2-EB-01	3.20E-03	CSR 480 V MCC NO.1 CAB FIRE (MOD)(IE Freq)
IE-FA-2-EB-02	3.20E-03	CSR 480 V MCC NO.2 CAB FIRE (MOD)(IE Freq)
IE-FA-2-EB-11	3.20E-03	CSR 480 V BUS NO. 11 CAB FIRE (MOD)(IE Freq)
IE-FA-2-EB-12	3.20E-03	CSR 480 V BUS NO. 12 CAB FIRE (MOD)(IE Freq)
IE-FA-2-EB-21	3.20E-03	CSR 480 V MCC #21 CAB FIRE (MOD)(IE Freq)
IE-FA-2-EB-23	3.20E-03	CSR 480 V MCC #23 CAB FIRE (MOD)(IE Freq)
IE-FA-2-EB-24	3.20E-03	CSR 480 V MCC #24 CAB FIRE (MOD)(IE Freq)
IE-FA-2-ED-06	3.20E-03	CSR INVERTER NO. 1 CAB FIRE (MOD)(IE Freq)
IE-FA-2-ED-07	3.20E-03	CSR INVERTER NO. 2 CAB FIRE (MOD)(IE Freq)
IE-FA-2-ED-08	3.20E-03	CSR INVERTER NO. 3 CAB FIRE (MOD)(IE Freq)



Table A6.3, Fire Area Assigned Logical Event and Frequency

Fire Area Assigned Logical Event	Frequency/yr	Description
IE-FA-2-ED-09	3.20E-03	CSR INVERTER NO. 4 CAB FIRE (MOD)(IE Freq)
IE-FA-2-ED-10	3.20E-03	CSR 125 V BUS NO. 1- LEFT SIDE - TIE BKR CAB FIRE (MOD)(IE Freq)
IE-FA-2-ED-11	3.20E-03	CSR 125 V BUS CAB FIRE (MOD)(IE Freq)
IE-FA-2-ED-15	3.20E-03	CSR BATTERY CHARGER NO. 1 CAB FIRE (MOD)(IE Freq)
IE-FA-2-ED-16	3.20E-03	CSR BATTERY CHARGER NO. 2 CAB FIRE (MOD)(IE Freq)
IE-FA-2-ED-17	3.20E-03	CSR BATTERY CHARGER NO. 3 CAB FIRE (MOD)(IE Freq)
IE-FA-2-ED-18	3.20E-03	CSR BATTERY CHARGER NO. 4 CAB FIRE (MOD)(IE Freq)
IE-FA-2-ED-20	3.20E-03	CSR CSR 125 VDC BUS NO. 2 CAB FIRE (MOD)(IE Freq)
IE-FA-2-ED-21	3.20E-03	CSR CSR 125 VOLTS DC DISTRIBUTION PANEL CAB FIRE (MOD)(IE Freq)
IE-FA-2-EJ-14A	3.20E-03	CSR J BOX EJ-14A CAB FIRE (MOD)(IE Freq)
IE-FA-2-EJ-542	3.20E-03	CSR J BOX EJ-542 CAB FIRE (MOD)(IE Freq)
IE-FA-2-EJ-543	3.20E-03	CSR J BOX EJ-543 CAB FIRE (MOD)(IE Freq)
IE-FA-2-EJ-575	3.20E-03	CSR J BOX EJ-575 CAB FIRE (MOD)(IE Freq)
IE-FA-2-EJ-576	3.20E-03	CSR J BOX EJ-576 CAB FIRE (MOD)(IE Freq)
IE-FA-2-EY-01	3.20E-03	CSR INSTRUMENT AC PANEL CAB FIRE (MOD)(IE Freq)
IE-FA-2-EY-10	3.20E-03	CSR PREFERRED AC BUS NO. 1 INVERTER CAB FIRE (MOD)(IE Freq)
IE-FA-2-EY-20	3.20E-03	CSR PREFERRED AC BUS NO. 2 INVERTER CAB FIRE (MOD)(IE Freq)
IE-FA-2-EY-30	3.20E-03	CSR PREFERRED AC BUS NO. 3 INVERTER CAB FIRE (MOD)(IE Freq)
IE-FA-2-EY-40	3.20E-03	CSR PREFERRED AC BUS NO. 4 INVERTER CAB FIRE (MOD)(IE Freq)
IE-FA-2-EY-50	3.20E-03	CSR EY-01 PANEL TRANSFER SWITCH CAB FIRE (MOD)(IE Freq)
IE-FA-20	6.02E-04	SPENT FUEL POOL EQUIPMENT ROOM EXP FIRE (MIN)(IE Freq)
IE-FA-21-21A	3.80E-03	EEQUIP ROOM - EAST SIDE (BUS 19) EXP FIRE (LIGHT)(IE Freq)
IE-FA-21-21B	3.80E-03	EEQUIP ROOM - WEST SIDE (BUS 20) EXP FIRE (LIGHT)(IE Freq)
IE-FA-23-23E	2.94E-02	TURBINE BUILDING EAST SIDE EXP FIRE (MOD)(IE Freq)
IE-FA-23-23S	6.42E-02	TURBINE BUILDING SOUTH SIDE EXP FIRE (HEAVY)(IE Freq)
IE-FA-23-23W	1.55E-03	TURBINE BUILDING WEST SIDE EXP FIRE (MOD)(IE Freq)
IE-FA-24	2.27E-04	AUXILIARY FEEDWATER PUMP ROOM EXP FIRE (MIN)(IE Freq)
IE-FA-25	1.00E+00	HEATING BOILER ROOMS EXP FIRE (MOD)(IE-Freq - N/A)
IE-FA-26	6.89E-05	SOUTHWEST CABLE PENETRATION ROOM EXP FIRE (MOD)(IE Freq)
IE-FA-28	2.74E-03	WEST ENGINEERED SAFEGUARDS EXP FIRE (MIN)(IE Freq)
IE-FA-3	1.00E+00	1D SWITCHGR LOGICAL PLACEHOLDER
IE-FA-3-EA-12	3.75E-03	1D SWITCHGR 2400 V BUS 1D CAB FIRE (MOD)(IE Freq)
IE-FA-3-EB-22	3.75E-03	1D SWITCHGR 4160 V BUS 1B CAB FIRE (MOD)(IE Freq)
IE-FA-3-EC-181	3.75E-03	1D SWITCHGR MSIV SOLENOID VALVE PANEL CAB FIRE (MOD)(IE Freq)
IE-FA-3-EC-187	3.75E-03	1D SWITCHGR AFW ACTUATION CABINET CAB FIRE (MOD)(IE Freq)
IE-FA-3-EJ-1005	3.75E-03	1D SWITCHGR J BOX J-1005 CAB FIRE (MOD)(IE Freq)
IE-FA-3-EJ-1006	3.75E-03	1D SWITCHGR J BOX J-1006 CAB FIRE (MOD)(IE Freq)
IE-FA-3-EJ-1051	3.75E-03	1D SWITCHGR J BOX J-1051 CAB FIRE (MOD)(IE Freq)
IE-FA-3-EJ-1052	3.75E-03	1D SWITCHGR J BOX J-1052 CAB FIRE (MOD)(IE Freq)
IE-FA-3-EJ-9401	3.75E-03	1D SWITCHGR J BOX J-9401 CAB FIRE (MOD)(IE Freq)
IE-FA-32	4.85E-05	SIRW TANK/CCW ROOF AREA EXP FIRE (MIN)(IE Freq)
IE-FA-34	3.97E-05	MAN HOLE #1, #2, #3 EXP FIRE (LIGHT)(IE Freq)

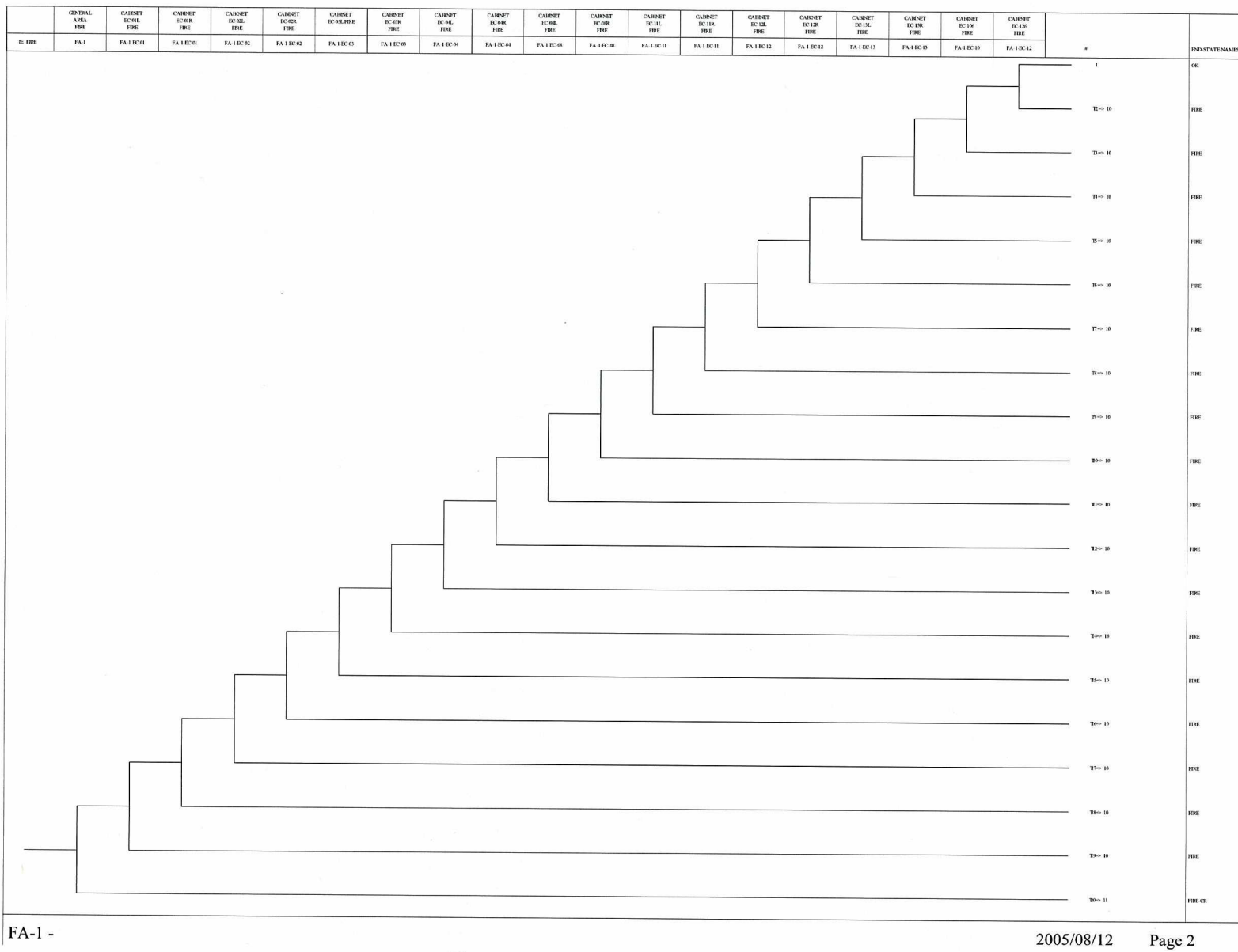


Table A6.3, Fire Area Assigned Logical Event and Frequency

Fire Area Assigned Logical Event	Frequency/yr	Description
IE-FA-4	1.00E+00	1C SWITCHGR LOGICAL PLACEHOLDER
IE-FA-4-EA-11	3.75E-03	1C SWITCHGR 2400 V BUS 1C CAB FIRE (IE Freq)
IE-FA-4-ED-11A	3.75E-03	1C SWITCHGR ED-11A 125 VOLTS DC DIST PANEL CAB FIRE (IE Freq)
IE-FA-4-EJ-9400	3.75E-03	1C SWITCHGR J BOX J-9400 CAB FIRE (MOD)(IE Freq)
IE-FA-5	1.69E-02	DIESEL GENERATOR 1-1 (LOGICAL PLACEHOLDER)
IE-FA-6	1.72E-02	DIESEL GENERATOR 1-2 (LOGICAL PLACEHOLDER)
IE-FA-7	1.00E+00	DIESEL GENERATOR 1-1 (LOGICAL PLACEHOLDER)
IE-FA-8	1.00E+00	DIESEL GENERATOR 1-2 (LOGICAL PLACEHOLDER)
IE-FA-9-9A	7.20E-03	INTAKE STRUCTURE - EAST SIDE (SWS) EXP FIRE (LIGHT)(IE Freq)
IE-FA-9-9B	7.20E-03	INTAKE STRUCTURE - WEST SIDE (FPS) EXP FIRE (LIGHT)(IE Freq)
IE-FA-9A	1.00E+00	LOGICAL PLACEHOLDER
IE-FA-9B	1.00E+00	LOGICAL PLACEHOLDER

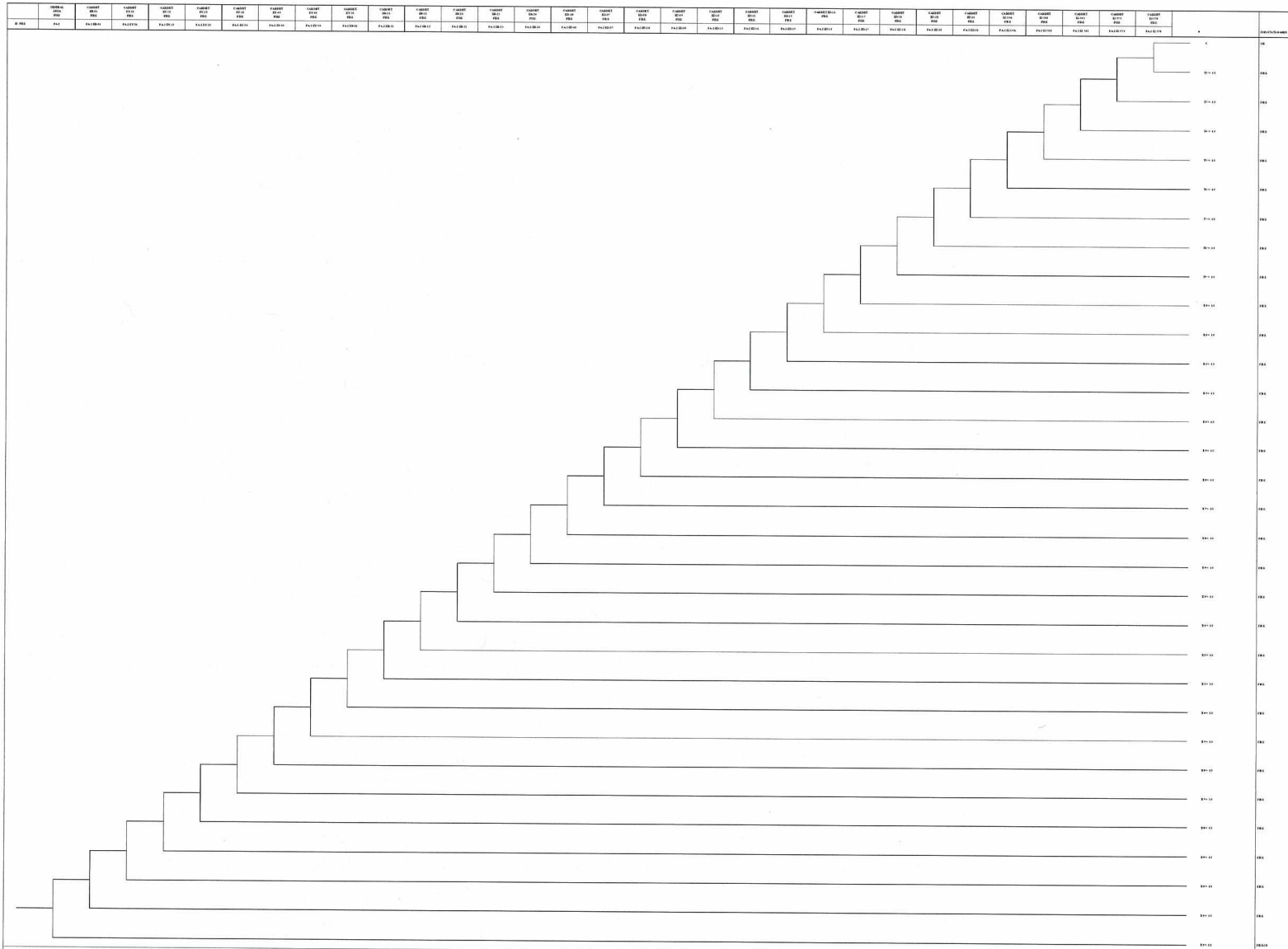
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FA-1 -

Figure A7.1 - FA1 Control Room Fires



FA-2 - FIRE IN THE CABLE SPREADING AREA

Figure A7.2 - Cable Spreading Room Fires



IE_FIRE	BUS ID ROOM FIRE	BUS CUBICLE EA-12 FIRE	BUS CUBICLE EB-22 FIRE	BUS CUBICLE EC-181 FIRE	BUS CUBICLE EC-187 FIRE	BUS CUBICLE EJ-1005 FIRE	BUS CUBICLE EJ-1006 FIRE	BUS CUBICLE EJ-1051 FIRE	BUS CUBICLE EJ-1052 FIRE	BUS CUBICLE EJ-9401 FIRE	#	END-STATE-NAMES
	FA-3	FA-3-EA-12	FA-3-EB-22	FA-3-EC-18	FA-3-EC-18	FA-3-EJ-10	FA-3-EJ-10	FA-3-EJ-10	FA-3-EJ-10	FA-3-EJ-94	1	OK
											T2-> 10	FIRE
											T3-> 10	FIRE
											T4-> 10	FIRE
											T5-> 10	FIRE
											T6-> 10	FIRE
											T7-> 10	FIRE
											T8-> 10	FIRE
											T9-> 10	FIRE
											T0-> 10	FIRE
											T1-> 12	FIRE-CS

FA-3 - FIRE IN THE SWITCHGEAR ROOM 1D

Figure A7.3 - Bus 1D Switchgear Room Fires



	BUS 1C ROOM FIRE	BUS CUBICLE EA-11 FIRE	BUS CUBICLE ED-11A FIRE	BUS CUBICLE EJ-9400 FIRE		
IE_FIRE	FA-4	FA-4-EA-11	FA-4-ED-11	FA-4-EJ-94	#	END-STATE-NAMES
					1	OK
					T2=> 10	FIRE
					T3=> 10	FIRE
					T4=> 10	FIRE
					T5=> 12	FIRE-CS

FA-4 - FIRE IN THE SWITCHGEAR ROOM 1C

Figure A7.4 - Bus 1C Switchgear Room Fires



	AUX BLDG 590' CORRIDOR SOUT FIN FIRE	AUX BLDG 590 CORRIDOR EXCEPT 13A1 FIRE	CHARGING PUMP ROOM FIRE	AUX BLDG 590 ELEV FIRE		
IE_FIRE	FA-13-13A1	FA-13-13A2	FA-13-13B	FA-13-13C	#	END-STATE-NAMES
					1	OK
					T2=> 10	FIRE
					T3=> 10	FIRE
					T4=> 10	FIRE
					T5=> 10	FIRE

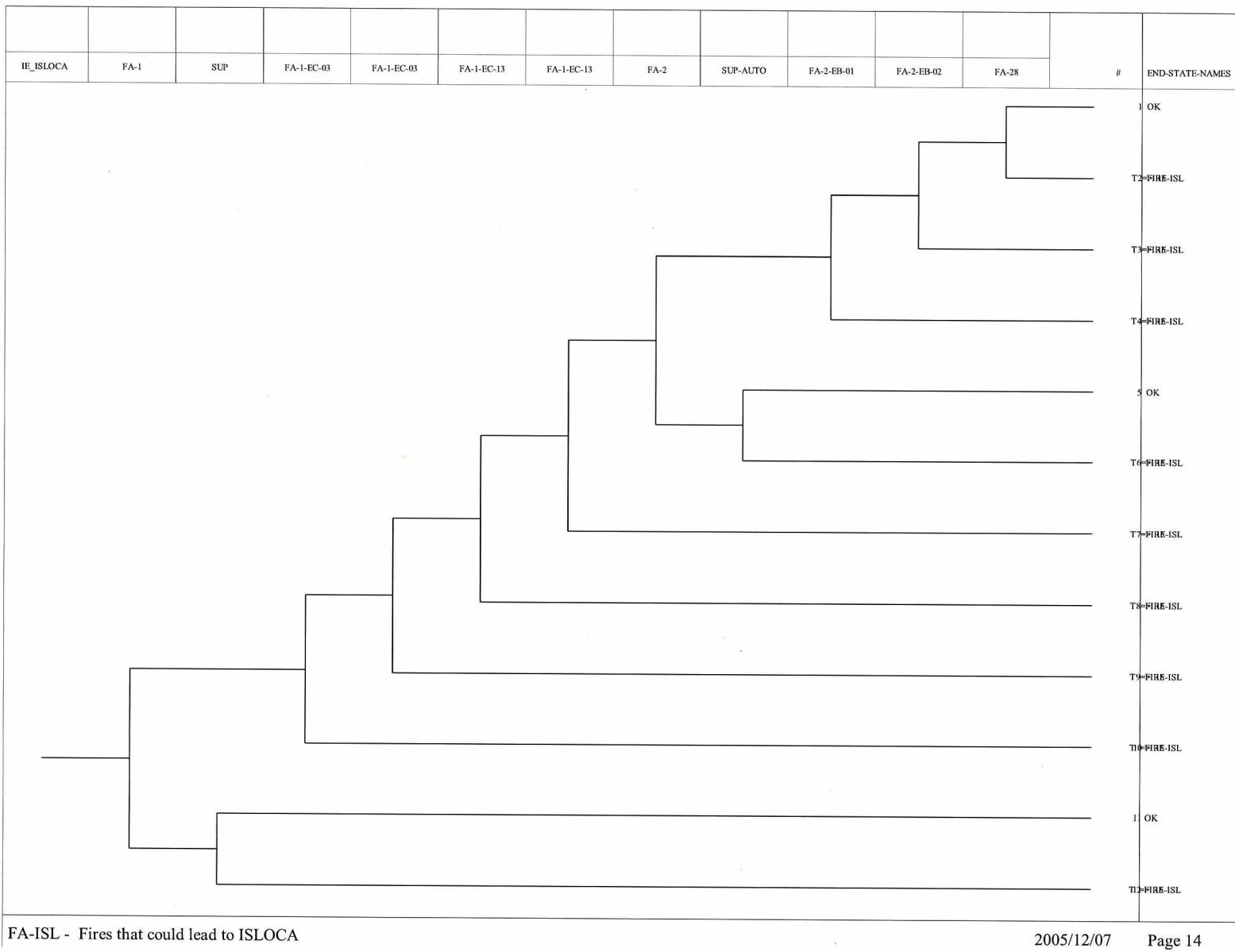
FA-13 - FIRE IN THE AUX BLDG 590 CORRIDOR

Figure A7.5 - Aux Building Corridor Fires



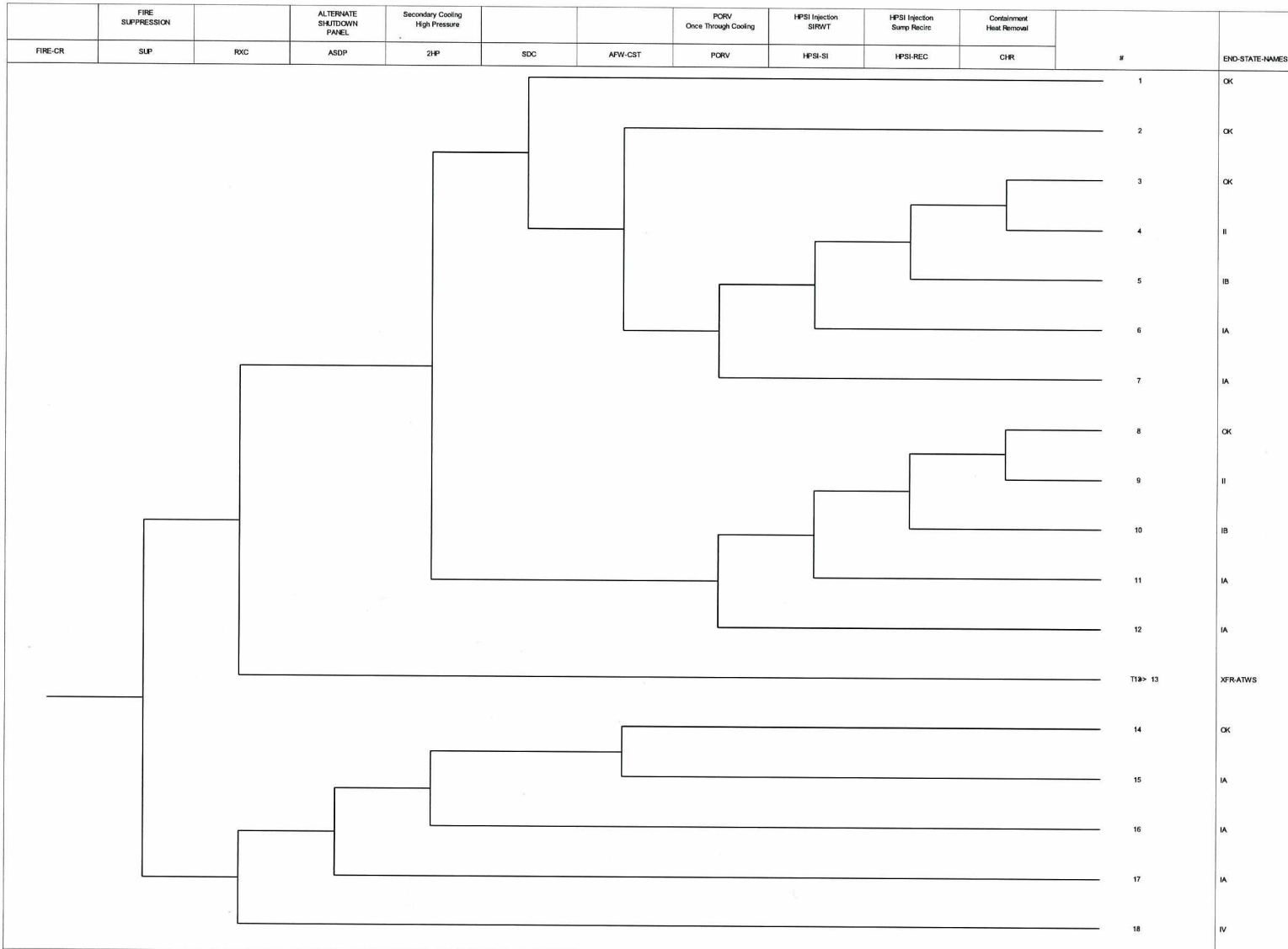
	TURB BLDG SOUTH FIRE	TURB BLDG EAST FIRE	TURB BLDG WEST FIRE		
IE_FIRE	FA-23-23S	FA-23-23E	FA-23-23W	#	END-STATE-NAMES
				1	OK
				T2=> 10	FIRE
				T3=> 10	FIRE
				T4=> 10	FIRE

Figure A7.6 - Turbine Building Fires



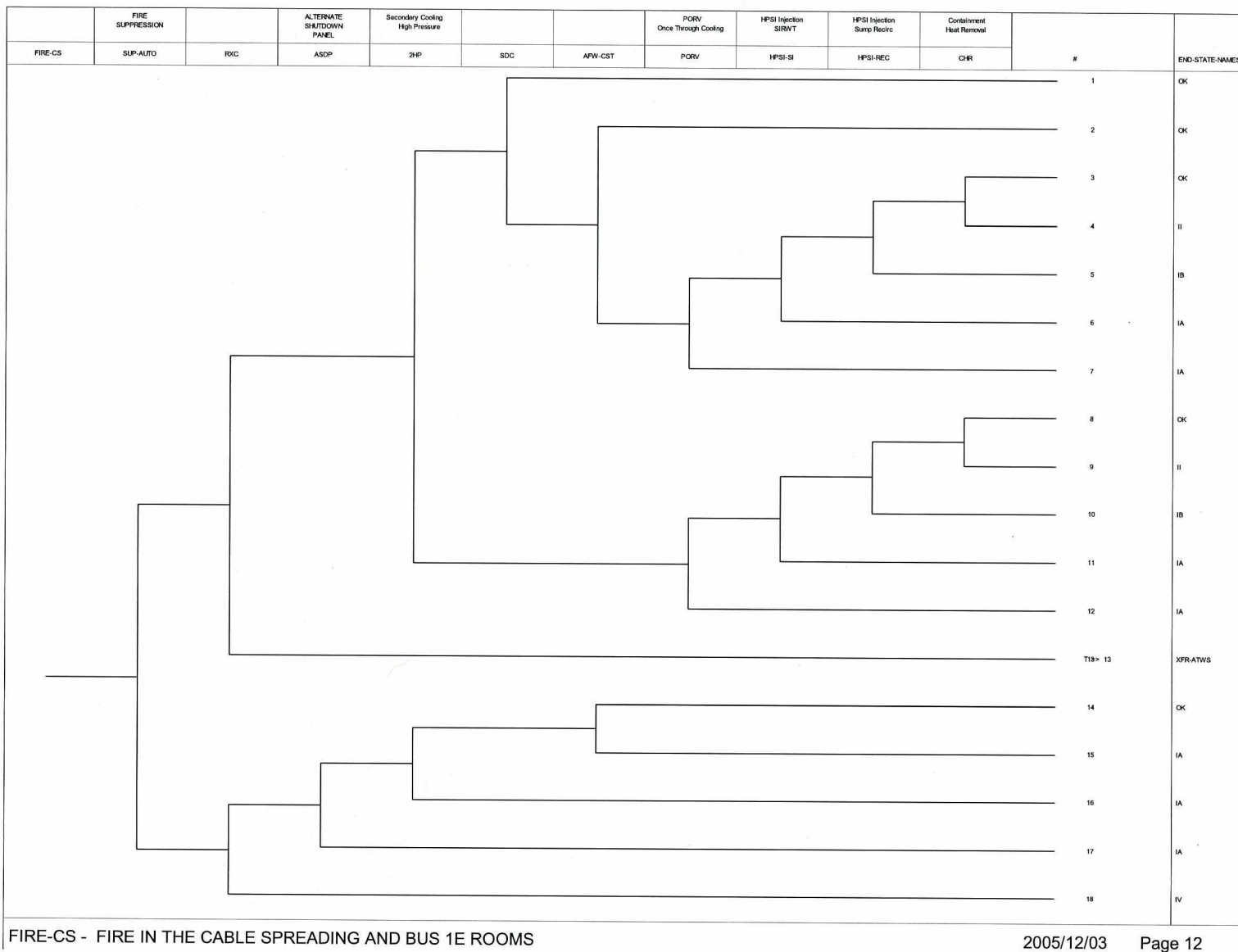
FA-ISL - Fires that could lead to ISLOCA

Figure A7.7 - Fires Leading to ISLOCA



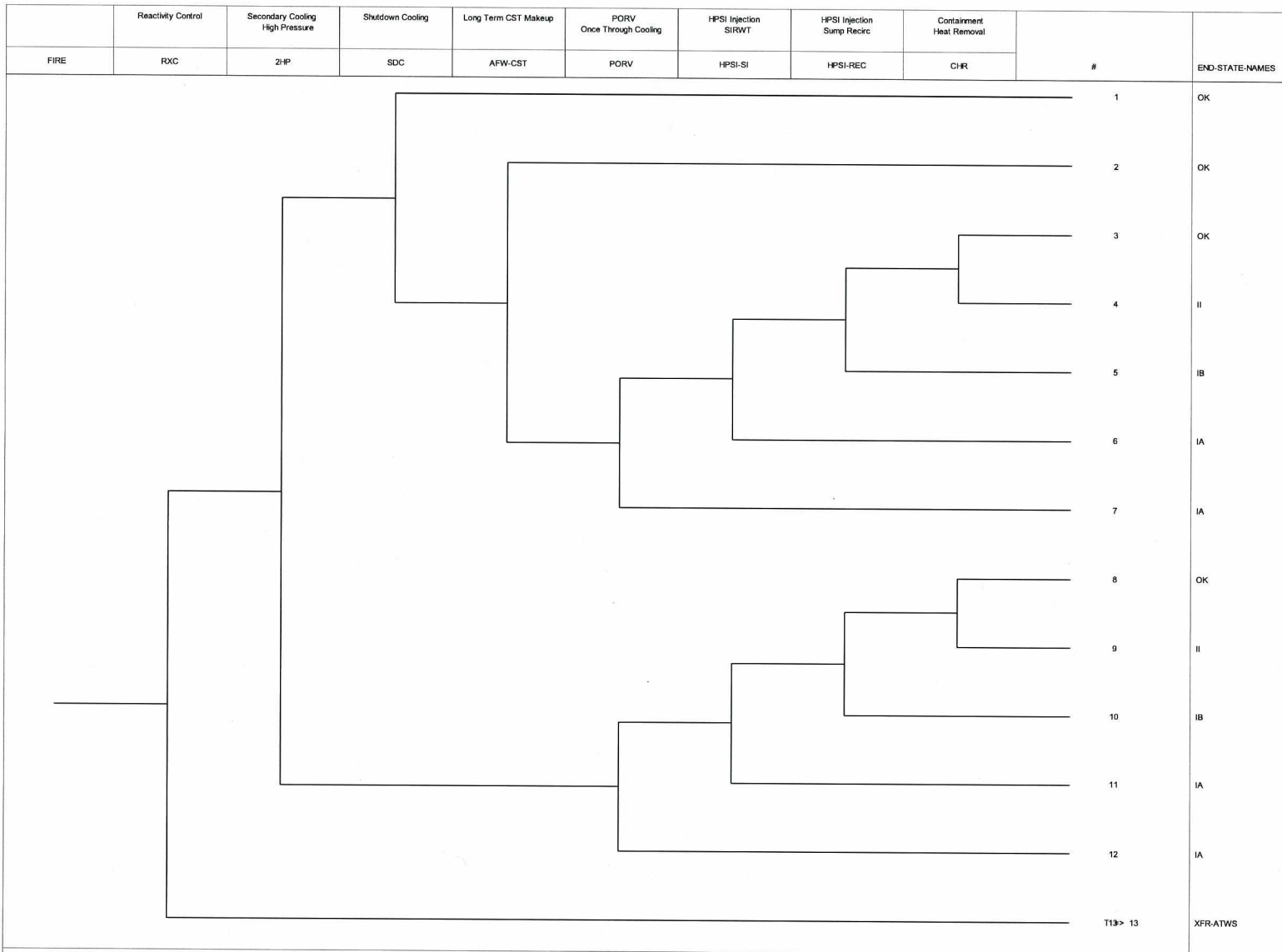
FIRE-CR - UNSUPPRESS CONTROL ROOM FIRE

Figure A7.8 - Control Room Fire Accident Sequences



FIRE-CS - FIRE IN THE CABLE SPREADING AND BUS 1E ROOMS

Figure A7.9 - Cable Spreading Room and Emergency Switchgear Room Accident Sequences



FIRE - PLANT RESPONSE TREE TO FIRE

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Figure A7.10 - Aux Building Corridor and Turbine Building Fire Accident Sequences

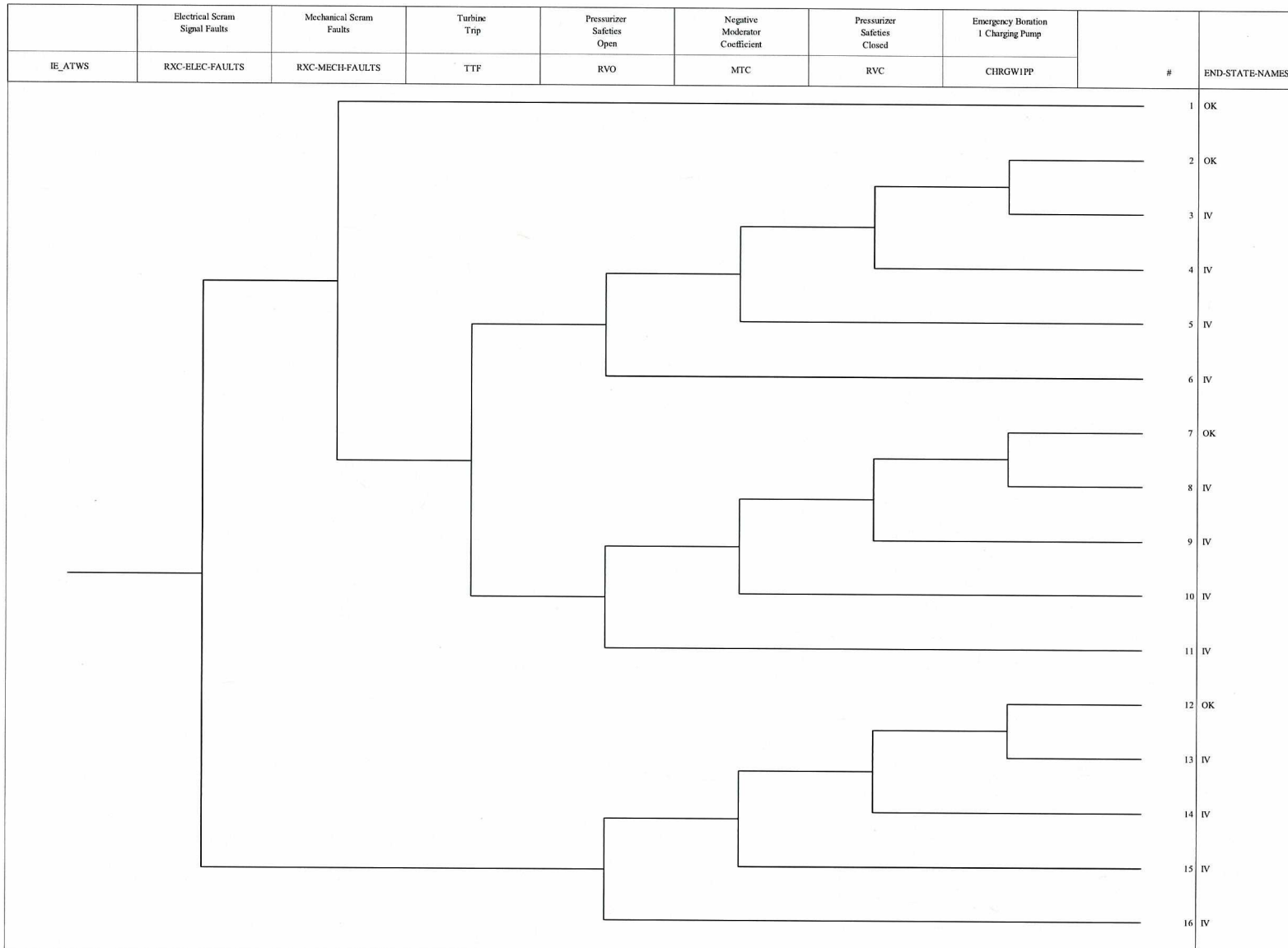


Figure A7.11 - Anticipated Transient Without Scram Accident Sequences

Table A7.1

Rules for Fire Area 1

```

if init(FIRE-CR) then
    eventree(FIRE-CR)=FALSE(HSE-NOTFA1);
endif

if FA-1 then eventree( FA-1 )=TRUE(IE-FA-1); endif
if FA-1-EC-01L then eventree( FA-1 )=TRUE(IE-FA-1-EC-01L ); endif
if FA-1-EC-01R then eventree( FA-1 )=TRUE(IE-FA-1-EC-01R ); endif
if FA-1-EC-02L then eventree( FA-1 )=TRUE(IE-FA-1-EC-02L ); endif
if FA-1-EC-02R then eventree( FA-1 )=TRUE(IE-FA-1-EC-02R ); endif
if FA-1-EC-03L then eventree( FA-1 )=TRUE(IE-FA-1-EC-03L ); endif
if FA-1-EC-03R then eventree( FA-1 )=TRUE(IE-FA-1-EC-03R ); endif
if FA-1-EC-04L then eventree( FA-1 )=TRUE(IE-FA-1-EC-04L ); endif
if FA-1-EC-04R then eventree( FA-1 )=TRUE(IE-FA-1-EC-04R ); endif
if FA-1-EC-08L then eventree( FA-1 )=TRUE(IE-FA-1-EC-08L ); endif
if FA-1-EC-08R then eventree( FA-1 )=TRUE(IE-FA-1-EC-08R ); endif
if FA-1-EC-11L then eventree( FA-1 )=TRUE(IE-FA-1-EC-11L ); endif
if FA-1-EC-11R then eventree( FA-1 )=TRUE(IE-FA-1-EC-11R ); endif
if FA-1-EC-12L then eventree( FA-1 )=TRUE(IE-FA-1-EC-12L ); endif
if FA-1-EC-12R then eventree( FA-1 )=TRUE(IE-FA-1-EC-12R ); endif
if FA-1-EC-13L then eventree( FA-1 )=TRUE(IE-FA-1-EC-13L ); endif
if FA-1-EC-13R then eventree( FA-1 )=TRUE(IE-FA-1-EC-13R ); endif
if FA-1-EC-106 then eventree( FA-1 )=TRUE(IE-FA-1-EC-106 ); endif
if FA-1-EC-126 then eventree( FA-1 )=TRUE(IE-FA-1-EC-126 ); endif

```




Table A7.2

Rules for Fire Area 2

```
if init(FIRE-CS) then
    eventree(FIRE-CS)=FALSE(HSE-NOTFA2);
endif

if FA-2 then eventree(FA-2) = TRUE(IE-FA-2); endif
if FA-2-EB-01 then eventree( FA-2 )=TRUE(IE-FA-2-EB-01 ); endif
if FA-2-EB-02 then eventree( FA-2 )=TRUE(IE-FA-2-EB-02 ); endif
if FA-2-EB-11 then eventree( FA-2 )=TRUE(IE-FA-2-EB-11 ); endif
if FA-2-EB-12 then eventree( FA-2 )=TRUE(IE-FA-2-EB-12 ); endif
if FA-2-EB-21 then eventree( FA-2 )=TRUE(IE-FA-2-EB-21 ); endif
if FA-2-EB-23 then eventree( FA-2 )=TRUE(IE-FA-2-EB-23 ); endif
if FA-2-EB-24 then eventree( FA-2 )=TRUE(IE-FA-2-EB-24 ); endif
if FA-2-ED-06 then eventree( FA-2 )=TRUE(IE-FA-2-ED-06 ); endif
if FA-2-ED-07 then eventree( FA-2 )=TRUE(IE-FA-2-ED-07 ); endif
if FA-2-ED-08 then eventree( FA-2 )=TRUE(IE-FA-2-ED-08 ); endif
if FA-2-ED-09 then eventree( FA-2 )=TRUE(IE-FA-2-ED-09 ); endif
if FA-2-ED-10 then
    eventree( FA-2 )=TRUE(IE-FA-2-ED-10 );
    eventree(FA-2)=FALSE(HSE-NOTFA2-ED-10);
endif
if FA-2-ED-11 then eventree( FA-2 )=TRUE(IE-FA-2-ED-11 ); endif
if FA-2-ED-15 then eventree( FA-2 )=TRUE(IE-FA-2-ED-15 ); endif
if FA-2-ED-16 then eventree( FA-2 )=TRUE(IE-FA-2-ED-16 ); endif
if FA-2-ED-17 then eventree( FA-2 )=TRUE(IE-FA-2-ED-17 ); endif
if FA-2-ED-18 then eventree( FA-2 )=TRUE(IE-FA-2-ED-18 ); endif
if FA-2-ED-20 then
    eventree( FA-2 )=TRUE(IE-FA-2-ED-20 );
    eventree (FA-2) = FALSE(HSE-NOTFA2-ED-20);
endif
if FA-2-ED-21 then eventree( FA-2 )=TRUE(IE-FA-2-ED-21 ); endif
if FA-2-EJ-14A then eventree( FA-2 )=TRUE(IE-FA-2-EJ-14A ); endif
if FA-2-EJ-542 then eventree( FA-2 )=TRUE(IE-FA-2-EJ-542 ); endif
if FA-2-EJ-543 then eventree( FA-2 )=TRUE(IE-FA-2-EJ-543 ); endif
if FA-2-EJ-575 then eventree( FA-2 )=TRUE(IE-FA-2-EJ-575 ); endif
if FA-2-EJ-576 then eventree( FA-2 )=TRUE(IE-FA-2-EJ-576 ); endif
if FA-2-EY-01 then eventree( FA-2 )=TRUE(IE-FA-2-EY-01 ); endif
if FA-2-EY-10 then eventree( FA-2 )=TRUE(IE-FA-2-EY-10 ); endif
if FA-2-EY-20 then eventree( FA-2 )=TRUE(IE-FA-2-EY-20 ); endif
if FA-2-EY-30 then eventree( FA-2 )=TRUE(IE-FA-2-EY-30 ); endif
if FA-2-EY-40 then eventree( FA-2 )=TRUE(IE-FA-2-EY-40 ); endif
if FA-2-EY-50 then eventree( FA-2 )=TRUE(IE-FA-2-EY-50 ); endif
```



Table A7.3

Rules for Fire Area 3

```
if FA-3 then
    eventree(FIRE-CS)=FALSE(HSE-NOTFA3);
endif
```

```
if /FA-3 then
    eventree(FIRE)=FALSE(HSE-NOTFA3);
endif
```

```
if FA-3-EA-12 then eventree( FA-3 )=TRUE(IE-FA-3-EA-12 ); endif
if FA-3-EB-22 then eventree( FA-3 )=TRUE(IE-FA-3-EB-22 ); endif
if FA-3-EC-181 then eventree( FA-3 )=TRUE(IE-FA-3-EC-181 ); endif
if FA-3-EC-187 then eventree( FA-3 )=TRUE(IE-FA-3-EC-187 ); endif
if FA-3-EJ-1005 then eventree( FA-3 )=TRUE(IE-FA-3-EJ-1005 ); endif
if FA-3-EJ-1006 then eventree( FA-3 )=TRUE(IE-FA-3-EJ-1006 ); endif
if FA-3-EJ-1051 then eventree( FA-3 )=TRUE(IE-FA-3-EJ-1051 ); endif
if FA-3-EJ-1052 then eventree( FA-3 )=TRUE(IE-FA-3-EJ-1052 ); endif
if FA-3-EJ-9401 then eventree( FA-3 )=TRUE(IE-FA-3-EJ-9401 ); endif
```

Table A7.4

Rules for Fire Area 4

```

if FA-4 then eventree(FA-4) = TRUE(IE-FA-4);endif
if FA-4 then
    eventree(FIRE-CS)=FALSE(HSE-NOTFA4);
endif
if /FA-4 then
    eventree(FIRE)=FALSE(HSE-NOTFA4);
endif
if FA-4-EA-11 then eventree( FA-4 )=TRUE(IE-FA-4-EA-11 ); endif
if FA-4-ED-11A then eventree( FA-4 )=TRUE(IE-FA-4-ED-11A ); endif
if FA-4-EJ-9400 then eventree( FA-4 )=TRUE(IE-FA-4-EJ-9400 ); endif

```

Table A7.5

Rules for Fire Area 13

```

if FA-13-13A1 then
    eventree( FA-13 )=TRUE(IE-FA-13-13A1 );
    eventree(FA-13) = FALSE (HSE-NOTFA13A);
endif
if FA-13-13A2 then
    eventree( FA-13 )=TRUE(IE-FA-13-13A2 );
    eventree(FA-13) = FALSE (HSE-NOTFA13A);
endif
if FA-13-13B then eventree( FA-13 )=TRUE(IE-FA-13-13B ); endif
if FA-13-13C then eventree( FA-13 )=TRUE(IE-FA-13-13C ); endif

```

Table A7.6

Rules for Fire Area 23

```

if FA-23-23E then
    eventree( FA-23 ) =TRUE(IE-FA-23-23E );
    eventree (FA-23) = FALSE(HSE-NOTFA23);
    eventree (FA-23) = FALSE(HSE-NOTFA23ES);
endif
if FA-23-23S then
    eventree( FA-23 )=TRUE(IE-FA-23-23S );
    eventree (FA-23) = FALSE(HSE-NOTFA23);
    eventree (FA-23) = FALSE(HSE-NOTFA23ES);
endif
if FA-23-23W then
    eventree( FA-23 )=TRUE(IE-FA-23-23W );
    eventree (FA-23) = FALSE(HSE-NOTFA23);
endif

```



Table A7.7

Rules for Transfers to Control Room Fire Event Tree

```
| Set motor driven AFW pumps and auto start of P8B to failure  
if 2HP then
```

```
|2HP = AFW-CST;  
eventree (FIRE-CR) = TRUE (A-PMMG-P-8A);  
eventree (FIRE-CR) = TRUE (A-PMME-P-8A);  
eventree (FIRE-CR) = TRUE (A-PMMG-P-8C);  
eventree (FIRE-CR) = TRUE (A-PMME-P-8C);  
eventree (FIRE-CR) = TRUE (A-REMB-62-2P8B);  
endif
```

```
if /2HP then  
eventree (FIRE-CR) = TRUE (A-PMMG-P-8A);  
eventree (FIRE-CR) = TRUE (A-PMME-P-8A);  
eventree (FIRE-CR) = TRUE (A-PMMG-P-8C);  
eventree (FIRE-CR) = TRUE (A-PMME-P-8C);  
eventree (FIRE-CR) = TRUE (A-REMB-62-2P8B);  
endif
```



Table A7.8

Rules for Transfers to Cable Spreading Room, Bus 1C and Bus 1D Fire Event Tree

| Set motor driven AFW pumps and P8B auto start to failure

if 2HP then

eventree(FIRE-CS)=TRUE(A-PMMG-P-8A);

eventree(FIRE-CS)=TRUE(A-PMMG-P-8C);

eventree(FIRE-CS)=TRUE(A-REMB-62-2P8B);

endif

if /2HP then

eventree(FIRE-CS)=TRUE(A-PMMG-P-8A);

eventree(FIRE-CS)=TRUE(A-PMMG-P-8C);

eventree(FIRE-CS)=TRUE(A-REMB-62-2P8B);

endif

Table A7.9

Rules for Aux Building and Turbine Building Fires

None

Table A7.10

Rules for Transfers to ATWS Event Tree

```

|Define Success Boundary Conditions
|
if /TTF then
/MTC = MTC-TTRIP;
MTC = MTC-TTRIP;
endif
|
|Define Failure Boundary Conditions
|
if TTF then
/MTC = MTC-NOTTRIP;
MTC = MTC-NOTTRIP;
endif
if RXC-ELEC-FAULTS then
/MTC = MTC-NOTTRIP;
MTC = MTC-NOTTRIP;
endif

```