

Fire PRA Cutset Analysis Exercise # 2

Type of Quantification: Failed Events are Set to TRUE

Fire Scenario: 3BCP09/08-EC-8-1

Cutset # 1

Cutset Prob. 5.10E-01

BE Prob	BE ID	Description
1.00E+00	E-INIT-NCL---PSF	SONGS INIT-NCL PLANT-SPECIFIC FACTOR (PSF)
5.10E-01	FU-BE-CCW-07_H	HV-6223 SPURIOUS CLOSURE - FIRE
1.00E+00	INIT-FIRE	FIRE INITIATING EVENT
1.00E+00	LOCA	DUMMY FLAG EVENT TO INDICATE LOCA (SIAS) CONDITIONS
1.00E+00	NOATWS	DUMMY EVENT FOR NON-ATWS CONDITION
1.00E+00	XHOS-3PE453A	
1.00E+00	XHOS-MSIS	SPURIOUS MSIS SIGNAL DUE TO FIRE
1.00E+00	XHOS-RCPFT	RCP FAILS TO TRIP FOLLOWING LOSS OF CCW - FIRE

Basic Events Set to TRUE or 1.0

Event	Probability	Description
3BCP09/08-EC-8-1	4.08E-05	Initiator
A-MV9325---P	1.22E-03	MTR-OPERATED VLV 9325 FT OPEN ON DEMAND
A-MV9328---P	1.22E-03	MTR-OPERATED VLV 9328 FT OPEN ON DEMAND
D-AV9200---N	1.00E-03	AIR-OPTD VLV 9200FT CLOSE ON DEMAND
D-AV9200-1DQ	2.38E-06	AIR-OPERATED VLV 9200 FT REM OPEN 24 H
D-MP190----S	9.38E-04	MTR-DRIVEN PP 190 FT START ON DEMAND
D-MP192----S	9.56E-04	MTR-DRIVEN PP 192FT START ON DEMAND
D-MV9201---P	1.07E-03	MTR-OPERATED VLV 9201 FT OPEN ON DEMAND
E-INIT-NCL---PSF	1.00E+00	SONGS INIT-NCL PLANT-SPECIFIC FACTOR (PSF)
F-MP053----S	1.00E-03	MTR-DRIVEN PP 053FT START ON DEMAND
FU-BE-2010-110	1.00E-12	DIGITAL FW PANEL 2L049 FT REMAIN AVAILABLE
FU-BE-A01-M-DEN	1.00E-12	BUS A01 FAILS TO DE-ENERGIZE
FU-BE-AFW-05	1.00E-12	SG 2 CHANNEL A NR INDICATOR 2LI1123-1 FAILS
FU-BE-AFW-08	1.00E-12	SG 2 CHANNEL D NRI INDICATOR 2LI1123A4 FAILS
FU-BE-AFW-09	1.00E-12	SG 1 CHANNEL A NR INDICATOR 2LI1113-1 FAILS
FU-BE-AFW-12	1.00E-12	SG 1 CHANNEL D NR INDICATOR 2LI1113-4 FAILS
FU-BE-CCW-07_H	5.10E-01	HV-6223 SPURIOUS CLOSURE - FIRE
FU-BE-CCW-10	1.00E-12	MOTOR OPERATED VALVE 6366 TRANSFERS CLOSED
FU-BE-CCW-12	1.00E-12	MOTOR OPERATED VALVE 6370 TRANSFERS CLOSED

FU-BE-CVCS-001	1.00E-12	2P191 OFF:ON-TRNA
FU-BE-CVCS-003	1.00E-12	2P191 OFF:ON-TRNB
FU-BE-ELEC-99999	1.00E-12	BKR (CNTL) 4160V A0413 FT CLOSE ON DEMAND
FU-BE-ELECT-02	1.00E-12	RES AUX TXFRS NOT ENERGIZED FROM POS4
FU-BE-ELECT-1201	1.00E-12	PANEL 2L344 FAILS DUE TO FIRE
FU-BE-ELECT-50	1.00E-12	480V MCC 2BD FT OPERATE 24 H
FU-BE-ELECT-6000-T		
FU-BE-ELECT-6002	1.00E-12	PANEL 2L071A-3 FAIL TO REMAIN ENERGIZED DUE TO FIRE
FU-BE-ELECT-6400	1.00E+00	PANEL 2L071X-1 FAIL TO REMAIN ENERGIZED DUE TO FIRE
FU-BE-ELECT-6401	1.00E-12	PANEL 2L071X-2 FAIL TO REMAIN ENERGIZED DUE TO FIRE
FU-BE-ELECT-6500	1.00E-12	PANEL 2L073-1 FAILS TO REMAIN ENERGIZED DUE TO FIRE
FU-BE-ELECT-6501	1.00E-12	PANEL 2L073-2 FAILS TO REMAIN ENERGIZED DUE TO FIRE
FU-BE-ELECT-6502	1.00E-12	PANEL 2L073-3 FAILS TO REMAIN ENERGIZED DUE TO FIRE
FU-BE-ELECT-6503	1.00E-12	PANEL 2L073-4 FAILS TO REMAIN ENERGIZED DUE TO FIRE
FU-BE-MSO-07	1.00E-12	LOOP A HV-6293A FRM LETDOWN HX SPURIOUS OPEN - FIRE
FU-BE-MSO-08	1.00E-12	LOOP A HV-6293B TO LETDOWN HX SPURIOUS OPEN - FIRE
FU-BE-MSO-103	1.00E-12	CHARGING PUMP P-190 FAILS TO START DUE FIRE
FU-BE-MSO-105	1.00E-12	CHARGING PUMP P-192 FAILS TO START
FU-BE-MSO-154		PZR HEATER E-122 FAILS TO DE-ENERGIZE WHILE ALIGN TO CHANNEL X
FU-BE-MSO-155		PZR HEATER E-122 FAILS TO DE-ENERGIZE WHILE ALIGN TO CHANNEL Y
FU-BE-MSO-158		PZR HEATER E-123 FAILS TO DE-ENERGIZE WHILE ALIGN TO CHANNEL X

FU-BE-MSO-159		PZR HEATER E-123 FAILS TO DE-ENERGIZE WHILE ALIGN TO CHANNEL Y
FU-BE-MSO-16	1.00E-12	VALVE 2HV9342 OPENS SPURIOUSLY DUE TO FIRE
FU-BE-MSO-162		PZR HEATER E-124 FAILS TO DE-ENERGIZE WHILE ALIGN TO CHANNEL X
FU-BE-MSO-163		PZR HEATER E-124 FAILS TO DE-ENERGIZE WHILE ALIGN TO CHANNEL Y
FU-BE-MSO-166		PZR HEATER E-125 FAILS TO DE-ENERGIZE WHILE ALIGN TO CHANNEL X
FU-BE-MSO-167		PZR HEATER E-125 FAILS TO DE-ENERGIZE WHILE ALIGN TO CHANNEL Y
FU-BE-MSO-170		PZR HEATER E-126 FAILS TO DE-ENERGIZE WHILE ALIGN TO CHANNEL X
FU-BE-MSO-171		PZR HEATER E-126 FAILS TO DE-ENERGIZE WHILE ALIGN TO CHANNEL Y
FU-BE-MSO-174		PZR HEATER E-127 FAILS TO DE-ENERGIZE WHILE ALIGN TO CHANNEL X
FU-BE-MSO-175		PZR HEATER E-127 FAILS TO DE-ENERGIZE WHILE ALIGN TO CHANNEL Y
FU-BE-MSO-178		PZR HEATER E-128 FAILS TO DE-ENERGIZE WHILE ALIGN TO CHANNEL X
FU-BE-MSO-179		PZR HEATER E-128 FAILS TO DE-ENERGIZE WHILE ALIGN TO CHANNEL Y
FU-BE-MSO-18	1.00E-12	VALVE 2HV9352 OPENS SPURIOUSLY DUE TO FIRE
FU-BE-MSO-182		PZR HEATER E-129 FAILS TO DE-ENERGIZE WHILE ALIGN TO CHANNEL X
FU-BE-MSO-183		PZR HEATER E-129 FAILS TO DE-ENERGIZE WHILE ALIGN TO CHANNEL Y
FU-BE-MSO-19	1.00E-12	VALVE 2HV9361 OPENS SPURIOUSLY DUE TO FIRE
FU-BE-MSO-25	1.00E-12	AIR-OPTD VLV 9201FT CLOSE
FU-BE-MSO-52	1.00E-12	TV-0221 FAILS OPEN
FU-BE-MSO-53	1.00E-12	LIC-0110 FAILURE
FU-BE-MSO-54-T		
FU-BE-MSO-55A-T		

FU-BE-MSO-55B-T

FU-BE-MSO-56-T

FU-BE-MSO-71	1.00E-12	PC-0100 FAILURE
FU-BE-MSO-72	1.00E-12	PT-0100X FAILURE
FU-BE-MSO-73	1.00E-12	PT-0100Y FAILURE
FU-BE-MSO-74	1.00E-12	LT-0110-1 FAILURE
FU-BE-MSO-94	1.00E-12	RES AUX TXFRS NOT ENERGIZED FROM POS17
FU-BE-MSO-96	1.00E-12	TV-0221 TRANSFERS CLOSED
FU-BE-MSO-97	1.00E-12	HV-9204 TRANSFERS CLOSED
FU-BE-PPS-40	1.00E-12	LT1113-1 FAILS ON DEMAND -FIRE
FU-BE-PPS-41	1.00E-12	2LT1113-1 SPURIOUS LOW LEVEL SIGNAL DUE TO FIRE - ESFAS INPUT
FU-BE-PPS-46	1.00E-12	LT1113-4 FAILS ON DEMAND - FIRE
FU-BE-PPS-47	1.00E-12	2LT1113-4 SPURIOUS LOW LEVEL SIGNAL DUE TO FIRE - ESFAS INPUT
FU-BE-PPS-48	1.00E-12	LT1123-1 FAILS ON DEMAND -FIRE
FU-BE-PPS-49	1.00E-12	2LT1123-1 SPURIOUS LOW LEVEL SIGNAL DUE TO FIRE - ESFAS INPUT
FU-BE-PPS-54	1.00E-12	2LT1123-4 SPURIOUS LOW LEVEL SIGNAL DUE TO FIRE - ESFAS INPUT
FU-BE-PPS-55	1.00E-12	LT1123-4 FAILS ON DEMAND - FIRE
FU-BE-PPS-56	1.00E-12	SPURIOUS HI-HI SUMP LEVEL LT9386-1 : FIRE
FU-BE-PPS-58	1.00E-12	SPURIOUS LOW PZR PRESS. PT0102-1 - FIRE
FU-BE-PPS-59	1.00E-12	PRESSURIZER PRESS. TRANSMITTER PT0102-1 FAILS
FU-BE-PPS-64	1.00E-12	SPURIOUS LOW PZR PRESS. PT0102-4 - FIRE

FU-BE-PPS-65	1.00E-12	PRESSURIZER PRESS. TRANSMITTER PT0102-4 FAILS
FU-BE-PPS-66	1.00E-12	SPURIOUS HI CONT. PRESS. PT0351-1 - FIRE
FU-BE-PPS-67	1.00E-12	CONTAINMENT PRESS. TRANSMITTER PT0351-1 FAILS
FU-BE-PPS-72	1.00E-12	SPURIOUS HI CONT. PRESS. PT0351-4 - FIRE
FU-BE-PPS-73	1.00E-12	CONTAINMENT PRESS. TRANSMITTER PT0351-4 FAILS
FU-BE-PPS-75	1.00E-12	CONTAINMENT HI-HI PRESS. XMTR PT0352-1 FAILS-FIRE
FU-BE-PPS-80	1.00E-12	CONTAINMENT HI-HI PRESS. XMTR PT0352-4 FAILS-FIRE
FU-BE-PPS-82	1.00E-12	
FU-BE-PPS-83	1.00E-12	SPURIOUS LOW PRESSURE SIGNAL 2PT1013-1
FU-BE-PPS-88	1.00E-12	
FU-BE-PPS-89	1.00E-12	SPURIOUS LOW PRESSURE SIGNAL 2PT1013-4
FU-BE-PPS-90	1.00E-12	
FU-BE-PPS-91	1.00E-12	SPURIOUS LOW PRESSURE SIGNAL 2PT1023-1
FU-BE-PPS-96	1.00E-12	
FU-BE-PPS-97	1.00E-12	SPURIOUS LOW PRESSURE SIGNAL 2PT1023-4
FU-BE-RCS-10	1.00E-12	RCP #1 FAILS TO TRIP
FU-BE-RCS-101		MANUAL RCP #1 TRIP FAILED
FU-BE-RCS-102		MANUAL RCP TRIP FAILED
FU-BE-RCS-103		MANUAL RCP TRIP FAILED
FU-BE-RCS-104		MANUAL RCP TRIP FAILED
FU-BE-RCS-11	1.00E-12	RCP #2 FAILS TO TRIP

FU-BE-RCS-12	1.00E-12	RCP #3 FAILS TO TRIP
FU-BE-RCS-13	1.00E-12	RCP #4 FAILS TO TRIP
G-AV9205---N	1.20E-03	AIR-OPTD VLV 9205FT CLOSE ON DEMAND
G-MV9267---N	1.00E-03	MTR-OPERATED VLV 9267 FT CLOSE ON DEMAND
H-LT9386---H	9.92E-06	LEVEL XMTR 9386HIGH OUTPUT SIGNAL W/I24 H
H-MV9305---P	8.43E-04	MTR-OPERATED VLV 9305 FT OPEN ON DEMAND
H-MV9306---N	5.73E-04	MTR-OPERATED VLV 9306 FT CLOSE ON DEMAND
H-MV9307---N	5.73E-04	MTR-OPERATED VLV 9307 FT CLOSE ON DEMAND
H-MV9324---P	6.87E-04	MTR-OPERATED VLV 9324 FT OPEN ON DEMAND
H-MV9327---P	6.87E-04	MTR-OPERATED VLV 9327 FT OPEN ON DEMAND
H-MV9330---P	6.87E-04	MTR-OPERATED VLV 9330 FT OPEN ON DEMAND
H-MV9333---P	6.87E-04	MTR-OPERATED VLV 9333 FT OPEN ON DEMAND
H-MV9347---N	5.73E-04	MTR-OPERATED VLV 9347 FT CLOSE ON DEMAND
H-MV9348---N	5.73E-04	MTR-OPERATED VLV 9348 FT CLOSE ON DEMAND
H-PT1A---3MI	1.70E-03	PRESSURETRANSMITTER ON RCS LOOP 1AFAILS
H-PT1B---3MI	1.70E-03	PRESSURETRANSMITTER ON RCS LOOP 1BFAILS
INIT-FIRE	1.00E+00	FIRE INITIATING EVENT
INIT-FIRE-T		
K-OOLOV1---Z	5.09E-03	LOV START SIGNAL FOR DIESELGENERATOR 2G2 FAILS
L-HCAFWCNTRL	7.29E-01	OP FT OVERRIDE & CONTROL AFW VALVES
LOCA	1.00E+00	DUMMY FLAG EVENT TO INDICATE LOCA (SIAS) CONDITIONS

M-CHE-336--S	4.70E-03	CHILLER E-336 FT START ON DEMAND - LOOP A ESF HVAC
M-MPP162---S	1.25E-03	MTR-DRIVEN PP P162 FT START ON DEMAND- LOOP A ESF HVACE33
N-FNE399---S	6.00E-04	FAN E399 FT STARTON DEMAND
N-FNE399-1DR	2.40E-04	FAN E399 FT RUN FOR 24 H
N-FNE401---S	6.00E-04	FAN E401 FT STARTON DEMAND
N-FNE401-1DR	2.40E-04	FAN E401 FT RUN FOR 24 H
N-MV6367---P	6.67E-04	MTR-OPERATED VLV 6367 FT OPEN ON DEMAND
N-MV6371---P	6.67E-04	MTR-OPERATED VLV 6371 FT OPEN ON DEMAND
N-MV9367---P	5.15E-04	MTR-OPERATED VLV 9367 FT OPEN ON DEMAND
NOATWS	1.00E+00	DUMMY EVENT FOR NON-ATWS CONDITION
T-NV8423---N	1.37E-03	PNEUMATIC VLV 8423 FT CLOSE ON DEMAND
T-NV8423---P	4.88E-04	PNEUMATIC VLV 8423 FT OPEN ON DEMAND
T-NV8424---N	1.37E-03	PNEUMATIC VLV 8424 FT CLOSE ON DEMAND
T-NV8424---P	4.88E-04	PNEUMATIC VLV 8424 FT OPEN ON DEMAND
T-NV8425---N	1.37E-03	PNEUMATIC VLV 8425 FT CLOSE ON DEMAND
T-NV8425---P	4.88E-04	PNEUMATIC VLV 8425 FT OPEN ON DEMAND
T-NV8426---N	1.37E-03	PNEUMATIC VLV 8426 FT CLOSE ON DEMAND
T-NV8426---P	4.88E-04	PNEUMATIC VLV 8426 FT OPEN ON DEMAND
U-B2A03--1DR	9.60E-06	4160V BUS A03 FT OPERATE 24 H
U-B2A07--1DR	2.09E-06	4160V BUS A07 FT OPERATE 24 H
U-B2A09--1DR	2.09E-06	4160V BUS A09 FT OPERATE 24 H

U-B3B16--1DR	9.60E-06	480V BUS B16 FT OPERATE 24 H
U-B4Q065-1DR	9.60E-06	<=120V BUS Q065 FT OPERATE 24 H
U-C3B10131DO	3.60E-06	BKR (CNTL) 480V B1013 FT REM CLOSED 24 H
U-DG2G2----S	2.33E-03	DIESEL GENERATOR2G2 FT START ON DEMAND- TRAIN A ESF POWER
U-DG2G2--1DR	2.39E-02	DG 2G2 FQAILS TO RUN FOR 24 HOURS FOLLOWING FIRE
U-DG2G2--8HR	7.95E-03	DIESEL GENERATOR2G2 FT RUN - TRAIN A ESF POWER
U-DG2G2-GROUND-Z	4.72E-04	PROB OF 2G002 TRIP DUE TO A GROUND FAULT
U-DUMMYA08-Z	1.00E-12	A08 UNAVAILABLE DUMMY EVENT
U-DUMMYXR1-Z		RES AUX TXFR XR1 UNAVAILABLE DUMMY EVENT
U-FNA-274--S	2.17E-04	FAN A-274 FT START ON DEMAND
U-FNA-2741DR	3.11E-03	FAN A-274 FT RUNFOR 24 H
U-FNA-275--S	2.17E-04	FAN A-275 FT START ON DEMAND
U-FNA-2751DR	3.11E-03	FAN A-275 FT RUNFOR 24 H
U-LX2T035--J	1.00E-03	LEVEL SWITCH 2T035 FT ACT/DE-ACT ON DEMAND
U-MP2P093--S	1.04E-03	2P093 FTS
U-MP2P0936HR	1.25E-04	2MDP 93 FTR 6HR
U-MP2P096--S	1.04E-03	2P096 FTS
U-MP2P0966HR	1.25E-04	2MDP 96 FTR 6HR
U-OO3A03---Z	1.45E-02	INSUFFICIENT POWER FROM 4160V SWGR3A03
U-OO3A07---Z	1.45E-02	INSUFFICIENT POWER FROM 4160V SWGR3A07
U3B2A08--1DR	2.09E-06	INSUFFICIENT POWER ON 4KV BUS 3A08

W-TK008---2D	5.00E-07	TANK 008 LEAK/RUPTURE W/I 1H
W-TK010---2D	5.00E-07	TANK 010 LEAK/RUPTURE W/I 1H
XHOS-3PE453A	1.00E+00	
XHOS-3PE453A-T		
XHOS-LOP-T		
XHOS-MFW-T ?		
XHOS-MSIS	1.00E+00	SPURIOUS MSIS SIGNAL DUE TO FIRE
XHOS-RCPFT	1.00E+00	RCP FAILS TO TRIP FOLLOWING LOSS OF CCW - FIRE
Y-SV297A---J	1.00E-03	PZR VENT VALVE 297A FAILS TO OPEN ON DEMAND (SOLENOID)
Y-SV299----J	1.00E-03	PZR VENT VALVE 299 FAILS TO OPEN ON DEMAND (SOLENOID)

Cutset Analysis

Scenario	Sequence	Initiating Event Impact	Mitigation System Impact	Proposed Recovery	Proposed Modification
3BCP09/08-EC-8-1					

























