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Risk Informing Emergency Preparedness Oversight: Evaluation of Emergency Action Levels—A Pilot Study of Peach Bottom, Surry and Sequoyah

Appendices C - F

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ABSTRACT

The Evaluation of Emergency Action Levels (EALs) project applied probabilistic risk assessment (PRA) methods to selected emergency action levels (EALs). The objective of this study is to explore the feasibility of using PRA to provide risk insights about EAL schemes. This study is the first effort to apply PRA methodology to nuclear power plant (NPP) EAL schemes. Peach Bottom, Surry and Sequoyah were selected as the pilot plants as they represent, respectively, 1) boiling water reactors (BWRs) with a Mark I containment, 2) pressurized water reactors (PWRs) with a large dry containment, and 3) PWRs with an ice condenser containment. EAL threshold conditions, as stated in the plant-specific emergency plan documents, are mapped into scenarios specific to the Standardized Plant Analysis Risk (SPAR) models for these plants. Conditional core damage probability (CCDP) is used as the risk metric to evaluate each EAL scenario. The results of this study provide generic and plant specific insights to be considered when developing future risk informed emergency planning (EP) regulatory activities. The results show that the current EAL schemes are generally logical in that plant risk increases as the emergency classification (EC) severity increases. However, the results also suggest that there are inconsistencies in the EC ranking of some EALs. These inconsistencies are identified for further consideration. The risk insights from this report may be applied to improve the current NRC approved EAL schemes. Nevertheless, it is important to note that regulatory decisions for EP are complex and should not be made solely considering CCDP values, but should be substantiated by deterministic approaches along with the PRA insights.

FOREWORD

This report documents a pilot risk study applying PRA to evaluate selected EALs. The analyses of this study were conducted by a team of risk analysts and emergency response experts from the U.S. Nuclear Regulatory Commission (NRC), Information System Laboratories, Inc. (ISL), and Innovative Engineering & Safety Solutions, LLC. The objective of this study is to explore the feasibility of using PRA to provide risk insights about EAL schemes.

The original EAL scheme was developed in the post-Three Mile Island era and documented in NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" [Ref. 1]. The most recent EAL scheme is in Nuclear Energy Institute's NEI 99-01, "Methodology for Development of Emergency Action Levels," [Ref. 2] and is endorsed by the NRC in Revision 5 of Regulatory Guide 1.101, "Emergency Planning and Preparedness for Nuclear Power Reactors" [Ref. 3]. However, neither of these schemes used a PRA study to systematically evaluate EALs as applied to ECs during their development.

In 2008, the Commission directed the staff to quantify the level of protection that should result from actions taken in support of EP plans and codify them in regulations that are transparent [Ref. 4]. This scope of work explores the feasibility of applying risk-informed methodology to EALs. The insights of this study may be applied to improve NRC's ability to evaluate licensees' EAL schemes via PRA results of selected EAL scenarios.

The analyses of this study are similar to that performed in the Accident Sequence Precursor (ASP) Program [Ref. 5] to determine the risk significance of an initiating event. NRC's Systems Analysis Programs for Hands on Integrated Reliability Evaluations (SAPHIRE) software and SPAR models, which were originally used to provide risk insights for NRC activities, such as the Reactor Oversight Program (ROP) and the ASP Program, served as the risk calculation tool for this study. Peach Bottom, Surry, and Sequoyah were selected as pilot plants to represent BWRs and PWRs, respectively. The EAL threshold conditions stated in the EP documents are incorporated into the Peach Bottom, Surry and Sequoyah SPAR models and conditional core damage probability (CCDP) is calculated. CCDP is used as a risk metric in this study and the CCDP results serve as a means to compare and evaluate EAL scenarios that are in the same EC. This study compares the CCDP values for EALs that are in the same EC to determine internal consistency. While ranges of CCDP for ECs are identified, there is no intention to codify those ranges. Rather, a comparison within, and across, ranges provides risk insights.

The results provide generic and plant-specific insights to be considered when developing future risk-informed EP regulatory activities. In general, the analysis results show a consistent relationship between the EC and the CCDP values—a higher severity of EC generally corresponds to a higher risk as indicated by the computed CCDP values for different EAL scenarios. However, the results also suggest that there are inconsistencies in the EC ranking of some EALs. These inconsistencies are identified for further consideration. The results and insights also provided risk-informed considerations that may enhance the current NRC approved EAL schemes. However, the regulatory decision making for EP is a complex process and should consider information from deterministic approaches along with the PRA insights.

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ACKNOWLEDGEMENTS

This report would not have been possible without the guidance and the help of several individuals who contributed and extended their valuable assistance in the preparation and completion of this EAL pilot study. They did not only contribute their expert knowledge to the project, but devoted their valuable personal time, including evenings and weekends to assist whenever needed.

The project was conceived by Randolph Sullivan (NRC/NSIR). Gary DeMoss (NRC/RES) provided the technical vision for implementation. Special thanks should be given to our technical consultants, Clifford Marks (ISL), Zoran Musicki (Energy Math Solutions), Wayne Schmit (NRC/Region I) and Cale Young (NRC/Region I) for their expertise answering our PRA or plant related questions.

ACRONYMS

AAC	Alternate AC
AC	Alternating Current
ADS	Automatic Depressurization System
AFW	Auxiliary Feed Water
ARI	Alternate Rod Insertion
ASP	Accident Sequence Precursor
ATWS	Anticipated Transient Without Scram
BE	Basic Event
BWR	Boiling Water Reactor
CCDP	Conditional Core Damage Probability
CCF	Common Cause Failure
CCW	Component Cooling Water
CFR	Code of Federal Regulations
CPC	Charging Pump Cooling
CRD	Control Rod Drive
CSR	Containment Spray Recirculation
CST	Condensate Storage Tank
CWG	Conowingo
DC	Direct Current
DG	Diesel Generator
DHR	Decay Heat Removal
EAL	Emergency Action Level
EC	Emergency Classification
ECCS	Emergency Core Cooling System
ECST	Emergency Condensate Storage Tank
EDG	Emergency Diesel Generator
EOP	Emergency Operating Procedure

EP	Emergency Preparedness
EPA	Environmental Protection Agency
ERCW	Essential Raw Cooling Water
ET	Event Tree
F	Fahrenheit
FT	Fault Tree
FPB	Fission Product Barrier
GE	General Emergency
gpm	Gallons Per Minute
HEP	Human Error Probability
HPCI	High Pressure Coolant Injection
HPI	High Pressure Injection
HPR	High Pressure Recirculation
HPSW	High Pressure Service Water
HRA	Human Reliability Analysis
HVAC	Heating, Ventilation and Air Conditioning
IC	Initiating Condition
IE	Initiating Event
INL	Idaho National Laboratories
IORV	Inadvertent Open Relief Valve
IPE	Individual Plant Examination
ISL	Information Systems Laboratories, Inc.
LEL	Lower Explosive Limit
LOCA	Loss of Coolant Accident
LOCHS	Loss of Condenser Heat Sink
LOMFW	Loss of Main Feedwater
LOOP	Loss of Offsite Power
LOOPGR	Loss of Offsite Power Grid Related
LPCI	Low Pressure Coolant Injection

LPR	Low Pressure Recirculation
MCR	Main Control Room
MDAFW	Motor Driven Auxiliary Feedwater
MFW	Main Feedwater
NEI	Nuclear Energy Institute
NOUE	Notification of Unusual Event
NPP	Nuclear Power Plant
NRC	Nuclear Regulatory Commission
NSIR	Nuclear Security and Incident Response
NUMARC	Nuclear Utility Management and Resources Council
PCS	Plant Computer System
PORV	Power Operated Relief Valve
PRA	Probabilistic Risk Assessment
PSF	Performance Shaping Factor
PWR	Pressurized Water Reactor
QA	Quality Assurance
RCIC	Reactor Core Isolation Cooling
RCP	Reactor Coolant Pump
RCS	Reactor Coolant System
RES	Office of Nuclear Regulatory Research
RHR	Residual Heat Removal
ROP	Reactor Oversight Program
RPS	Reactor Protection System
RPV	Reactor Pressure Vessel
RWST	Refueling Water Storage Tank
SAE	Site Area Emergency
SAMG	Severe Accident Management Guideline
SAPHIRE	Systems Analysis Programs for Hands-on Integrated Reliability Evaluations
SBO	Station Black Out

SDP	Significance Determination Process
SG	Steam Generator
SLC	Standby Liquid Control
SLOCA	Small Loss of Coolant Accident
SPAR	Standardized Plant Analysis Risk
SRV	Safety Relief Valve
SSCs	Structures, Systems, and Components
SW	Service Water
TBV	Turbine Bypass Valve
TDAFW	Turbine Driven Auxiliary Feedwater
TMI	Three Mile Island
TS	Technical Specifications
V	Volts

APPENDIX C SEQUENCES AND CUTSETS

C.1 Peach Bottom Cutset Reports

C.1.1 Peach Bottom MU1 Sequence and Cutset Report

MU1 Top 90 Percent Dominant Sequences

LOOPGR 34-01	/RPS, /EPS, /PPR, /SRV, HPI, /DEP, LPI, VA, /L1-CDF
LOOPGR 35-01	/RPS, /EPS, /PPR, /SRV, HPI, DEP, /L1-CDF
LOOPGR 37-6-01	/RPS, /EPS, /PPR, P2, LPI, /L1-CDF
LOOPGR 39-58-7-3-01	/RPS, EPS, /PPR, /SRV, RPSL, HPI, OPR-RV, OPR-CF, /L1-CDF

MU1 Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cutset	Description
1	2.500E-7	12.33	LOOPGR :34-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
2	2.500E-7	12.33	LOOPGR :35-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
		EndState	->CD	
3	9.000E-8	4.44	LOOPGR :35-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
4	9.000E-8	4.44	LOOPGR :34-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW

#	Prob/Freq	Total %	Cutset	Description
				PRESSURE INJECTION
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
5	7.308E-8	3.6	LOOPGR :35-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
	5.000E-1		RCI-XHE-XL-RSTRT	OPERATOR FAILS TO RECOVER RCIC FAILURE TO RESTART
		EndState	->CD	
6	7.308E-8	3.6	LOOPGR :34-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
	5.000E-1		RCI-XHE-XL-RSTRT	OPERATOR FAILS TO RECOVER RCIC FAILURE TO RESTART
		EndState	->CD	
7	7.185E-8	3.54	LOOPGR :34-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.437E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.000E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
8	7.185E-8	3.54	LOOPGR :35-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.437E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION

#	Prob/Freq	Total %	Cutset	Description
	1.000E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
9	6.300E-8	3.11	LOOPGR :35-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
10	6.300E-8	3.11	LOOPGR :34-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
11	4.872E-8	2.4	LOOPGR :35-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
	5.000E-1		RCI-XHE-XL-RSTRT	OPERATOR FAILS TO RECOVER RCIC FAILURE TO RESTART
		EndState	->CD	
12	4.872E-8	2.4	LOOPGR :34-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
	5.000E-1		RCI-XHE-XL-RSTRT	OPERATOR FAILS TO RECOVER RCIC FAILURE TO RESTART

#	Prob/Freq	Total %	Cutset	Description
		EndState	->CD	
13	4.595E-8	2.27	LOOPGR :37-6-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	9.190E-5		PPR-SRV-OO-2VLVS	TWO OR MORE SRVS FAIL TO CLOSE
		EndState	->CD	
14	4.200E-8	2.07	LOOPGR :35-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
15	4.200E-8	2.07	LOOPGR :34-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
16	3.691E-8	1.82	LOOPGR :35-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	4.102E-3		RCI-TDP-FR-TRAIN	RCIC PUMP FAILS TO RUN GIVEN THAT IT STARTED
		EndState	->CD	
17	3.691E-8	1.82	LOOPGR :34-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	4.102E-3		RCI-TDP-FR-TRAIN	RCIC PUMP FAILS TO RUN GIVEN THAT IT STARTED
		EndState	->CD	
18	3.500E-8	1.73	LOOPGR :35-01	

#	Prob/Freq	Total %	Cutset	Description
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
19	3.500E-8	1.73	LOOPGR :34-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
20	2.842E-8	1.4	LOOPGR :34-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
	5.000E-1		RCI-XHE-XL-RSTRT	OPERATOR FAILS TO RECOVER RCIC FAILURE TO RESTART
		EndState	->CD	
21	2.842E-8	1.4	LOOPGR :35-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
	5.000E-1		RCI-XHE-XL-RSTRT	OPERATOR FAILS TO RECOVER RCIC FAILURE TO RESTART
		EndState	->CD	
22	2.461E-8	1.21	LOOPGR :35-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	4.102E-3		RCI-TDP-FR-TRAIN	RCIC PUMP FAILS TO RUN GIVEN THAT IT STARTED

#	Prob/Freq	Total %	Cutset	Description
		EndState	->CD	
23	2.461E-8	1.21	LOOPGR :34-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	4.102E-3		RCI-TDP-FR-TRAIN	RCIC PUMP FAILS TO RUN GIVEN THAT IT STARTED
		EndState	->CD	
24	2.450E-8	1.21	LOOPGR :35-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
25	2.450E-8	1.21	LOOPGR :34-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
26	2.242E-8	1.11	LOOPGR :39-58-7-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.118E-2		EPS-DGN-FR-DGB	DIESEL GENERATOR B FAILS TO RUN
	2.118E-2		EPS-DGN-FR-DGC	DIESEL GENERATOR C FAILS TO RUN
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	9.999E-1		OPR-CF	OPR BEFORE CONTAINMENT FAILURE
	9.999E-1		OPR-RV	OPR BEFORE REACTOR VESSEL FAILURE
	1.000E-1		RRS-MDP-LK-SEALS	RECIRCULATION PUMP SEALS FAIL
		EndState	->CD	
27	2.051E-8	1.01	LOOPGR :35-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	4.102E-3		HCI-TDP-FR-TRAIN	HPCI PUMP TRAIN FAILS TO RUN GIVEN IT STARTED
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
28	2.051E-8	1.01	LOOPGR :34-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)

#	Prob/Freq	Total %	Cutset	Description
	4.102E-3		HCI-TDP-FR-TRAIN	HPCI PUMP TRAIN FAILS TO RUN GIVEN IT STARTED
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	

C.1.2 Peach Bottom MU6 (Case 1) Cutsets

MU6 (Case 1) Top 5 Dominant Sequences

LOACB-E12 62-01	/RPS,/OEP,PCS,/PPR,/SRV,HPI,DEP,/L1-CDF
XLOCA 2-02	L2-CSTET
LOACB-E12 61-01	/RPS,/OEP,PCS,/PPR,/SRV,HPI,/DEP,CDS,LPI,VA,/L1-CDF
LOACB-E12 :16-01	/RPS,/OEP,PCS,/PPR,/SRV,/HPI,SPC,/DEP,CRD,/CDS,CND,RHR,PCSR,CVS,LI02,/ L1-CDF
LOCHS 52-01	/RPS,/OEP,PCS,/PPR,/SRV,HPI,/DEP,CDS,LPI,VA,/L1-CDF

MU6 (Case 1) Top 50 Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	4.320E-7	20.32	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	4.800E-5		DCP-BAT-LP-BATTD	DIVISION IV BATTERIES FAIL
		EndState	->CD	
2	1.000E-7	4.7	INT-XLOCA :2-01	
	1.000E-7		IE-XLOCA	EXCESSIVE LOCA (VESSEL RUPTURE)
	1.000E+0		RPVRM	RPV RUPTURE MITIGATION
		EndState	->CD	
3	8.640E-8	4.06	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	9.600E-6		ACP-BAC-LP-E42	4160 VAC BUS E42 (20A18) IS UNAVAILABLE
		EndState	->CD	
4	8.640E-8	4.06	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	9.600E-6		DCP-BDC-LP-DIV	DIVISION IV 125VDC BUS FAILS
		EndState	->CD	
5	8.100E-8	3.81	INT-LOACB-E12 :61-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE

#	Prob/Freq	Total %	Cut Set	Description
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
6	8.100E-8	3.81	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
		EndState	->CD	
7	6.120E-8	2.88	INT-LOACB-E12 :16-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	4.000E-2		CFAILED	CONTAINMENT FAILURE CAUSES LOSS OF ALL INJECTION
	3.400E-1		PCS-XHE-XL-LTLACB	OPERATORS FAIL TO RECOVER THE POWER CONVERSION SYSTEM
	5.000E-4		RHR-XHE-XM-ERROR	OPERATOR FAILS TO START/CONTROL RHR
		EndState	->CD	
8	5.400E-8	2.54	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
9	5.400E-8	2.54	INT-LOACB-E12 :61-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
10	5.000E-8	2.35	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
11	5.000E-8	2.35	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK

#	Prob/Freq	Total %	Cut Set	Description
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
		EndState	->CD	
12	3.150E-8	1.48	INT-LOACB-E12 :61-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
13	3.150E-8	1.48	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
		EndState	->CD	
14	2.923E-8	1.38	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
15	2.923E-8	1.38	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
16	2.672E-8	1.26	INT-IORV :24-01	
	2.000E-2		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)

#	Prob/Freq	Total %	Cut Set	Description
	1.600E-2		CRD-MDP-TM-TRNB	CRD TRAIN B IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
		EndState	->CD	
17	2.672E-8	1.26	INT-IORV :24-01	
	2.000E-2		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	1.600E-2		CRD-MDP-TM-TRNA	CRD TRAIN A IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
		EndState	->CD	
18	2.500E-8	1.18	INT-LOMFW :60-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
19	2.500E-8	1.18	INT-LOMFW :61-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
		EndState	->CD	
20	2.440E-8	1.15	INT-LOIAS :71-01	
	1.000E+0		IE-LOIAS	LOSS OF INSTRUMENT AIR
	1.435E-2		IE-IAS-MDC-CF-FRABCD	CCF TO RUN OF IAS MDCs 2A, 2B, 2C AND 2D
	1.700E-6		RPS-SYS-FC-PSOVS	HCU SCRAM PILOT SOVS FAIL
		EndState	->CD	
21	1.949E-8	0.92	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
22	1.949E-8	0.92	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK

#	Prob/Freq	Total %	Cut Set	Description
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
23	1.846E-8	0.87	INT-LOACB-E12 :61-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	4.102E-3		HCI-TDP-FR-TRAIN	HPCI PUMP TRAIN FAILS TO RUN GIVEN IT STARTED
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
24	1.846E-8	0.87	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	4.102E-3		HCI-TDP-FR-TRAIN	HPCI PUMP TRAIN FAILS TO RUN GIVEN IT STARTED
		EndState	->CD	
25	1.800E-8	0.85	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
26	1.800E-8	0.85	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE

#	Prob/Freq	Total %	Cut Set	Description
		EndState	->CD	
27	1.462E-8	0.69	INT-LOMFW :60-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
28	1.462E-8	0.69	INT-LOMFW :61-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
29	1.437E-8	0.68	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.437E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	1.000E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
30	1.437E-8	0.68	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.437E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.000E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
31	1.287E-8	0.61	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK

#	Prob/Freq	Total %	Cut Set	Description
	6.433E-8		DCP-BAT-CF-U2BATT	COMMON CAUSE FAILURE OF DIVISION 1-4 BATTERIES
		EndState	->CD	
32	1.260E-8	0.59	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
33	1.260E-8	0.59	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
34	1.188E-8	0.56	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	1.200E-4		DCP-BCH-LP-CHRD1	DIVISION IV BATTERY CHARGER 2DD03 FAILS
	1.100E-2		DCP-XHE-XM-BUCHR	OPERATOR FAILS TO ALIGN BACKUP CHARGER
		EndState	->CD	
35	1.171E-8	0.55	INT-MANSD :65-01	
	1.300E+0		IE-MANSD	MANUAL SHUTDOWN
	5.300E-3		OEP-VCF-LP-CLOPT	LOSS OF OFFSITE POWER GIVEN REACTOR TRIP (NO LOCA)
	1.700E-6		RPS-SYS-FC-PSOVS	HCU SCRAM PILOT SOVS FAIL
		EndState	->CD	
36	1.137E-8	0.53	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	

#	Prob/Freq	Total %	Cut Set	Description
37	1.137E-8	0.53	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
38	1.000E-8	0.47	INT-IORV :03-01	
	2.000E-2		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	1.000E-3		OPR-XHE-XM-CSTFIL	OPERATOR FAILS TO REFILL THE CST
	5.000E-4		RHR-XHE-XM-ERROR	OPERATOR FAILS TO START/CONTROL RHR
		EndState	->CD	
39	9.744E-9	0.46	INT-LOMFW :60-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
40	9.744E-9	0.46	INT-LOMFW :61-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
41	9.190E-9	0.43	INT-LOCHS :55-6-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	9.190E-5		PPR-SRV-OO-2VLVS	TWO OR MORE SRVS FAIL TO CLOSE
		EndState	->CD	
42	9.000E-9	0.42	INT-LOMFW :61-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN

#	Prob/Freq	Total %	Cut Set	Description
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
43	9.000E-9	0.42	INT-LOMFW :60-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
44	8.400E-9	0.4	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
45	8.400E-9	0.4	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
46	7.383E-9	0.35	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	4.102E-3		RCI-TDP-FR-TRAIN	RCIC PUMP FAILS TO RUN GIVEN THAT IT STARTED
		EndState	->CD	

#	Prob/Freq	Total %	Cut Set	Description
47	7.383E-9	0.35	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	4.102E-3		RCI-TDP-FR-TRAIN	RCIC PUMP FAILS TO RUN GIVEN THAT IT STARTED
		EndState	->CD	
48	7.185E-9	0.34	INT-LOMFW :61-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.437E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	1.000E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
49	7.185E-9	0.34	INT-LOMFW :60-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	1.437E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.000E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
50	7.000E-9	0.33	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	

C.1.3 Peach Bottom MU6 (Case 2) Cutsets

MU6 (Case 2) Top5 Dominant Sequences

LOCHS 53-01	/RPS,/OEP,/PPR,/SRV,HPI,DEP,/L1-CDF
LOCHS 52-01	/RPS,/OEP,/PPR,/SRV,HPI,/DEP,CDS,LPI,VA,/L1-CDF
LOMFW 61-01	/RPS,/OEP,/PPR,/SRV,HPI,DEP,/L1-CDF
LOMFW 60-01	/RPS,/OEP,/PPR,/SRV,HPI,/DEP,CDS,LPI,VA,/L1-CDF
MANSD 62-01	/RPS,/OEP,PCS,HPI,DEP,/L1-CDF

MU6 (Case 2) Top 50 Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	5.889E-5	23.35	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
		EndState	->CD	
2	3.891E-5	15.43	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	9.911E-3		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
3	2.945E-5	11.67	INT-LOMFW :61-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
		EndState	->CD	
4	1.946E-5	7.71	INT-LOMFW :60-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	9.911E-3		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
5	1.148E-5	4.55	INT-MANSD :62-01	
	1.300E+0		IE-MANSD	MANUAL SHUTDOWN
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	3.000E-2		PCS-XHE-XO-ERROR	OPERATOR FAILS TO MAINTAIN FEEDWATER INJECTION
		EndState	->CD	
6	7.588E-6	3.01	INT-MANSD :61-01	
	1.300E+0		IE-MANSD	MANUAL SHUTDOWN
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION

#	Prob/Freq	Total %	Cut Set	Description
	9.911E-3		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	3.000E-2		PCS-XHE-XO-ERROR	OPERATOR FAILS TO MAINTAIN FEEDWATER INJECTION
		EndState	->CD	
7	7.067E-6	2.8	INT-TRANS :62-01	
	8.000E-1		IE-TRANS	GENERAL PLANT TRANSIENT
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	3.000E-2		PCS-XHE-XO-ERROR	OPERATOR FAILS TO MAINTAIN FEEDWATER INJECTION
		EndState	->CD	
8	5.477E-6	2.17	INT-LOOPGR :35-01	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
		EndState	->CD	
9	4.748E-6	1.88	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.597E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	9.911E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
10	4.669E-6	1.85	INT-TRANS :61-01	
	8.000E-1		IE-TRANS	GENERAL PLANT TRANSIENT
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	9.911E-3		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	3.000E-2		PCS-XHE-XO-ERROR	OPERATOR FAILS TO MAINTAIN FEEDWATER INJECTION
		EndState	->CD	
11	4.227E-6	1.68	INT-LOIAS :66-01	
	1.000E+0		IE-LOIAS	LOSS OF INSTRUMENT AIR
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION

#	Prob/Freq	Total %	Cut Set	Description
	1.435E-2		IE-IAS-MDC-CF-FRABCD	CCF TO RUN OF IAS MDCs 2A, 2B, 2C AND 2D
		EndState	->CD	
12	3.619E-6	1.43	INT-LOOPGR :34-01	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	9.911E-3		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
13	3.137E-6	1.24	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.597E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	9.911E-3		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	9.911E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
14	3.062E-6	1.21	INT-LOOPSC :35-01	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-CENTERED)
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
		EndState	->CD	
15	2.793E-6	1.11	INT-LOIAS :65-01	
	1.000E+0		IE-LOIAS	LOSS OF INSTRUMENT AIR
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	1.435E-2		IE-IAS-MDC-CF-FRABCD	CCF TO RUN OF IAS MDCs 2A, 2B, 2C AND 2D
	9.911E-3		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
16	2.650E-6	1.05	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.963E-2		HCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
		EndState	->CD	
17	2.650E-6	1.05	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)

#	Prob/Freq	Total %	Cut Set	Description
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
		EndState	->CD	
18	2.430E-6	0.96	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
		EndState	->CD	
19	2.374E-6	0.94	INT-LOMFW :61-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.597E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	9.911E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
20	2.297E-6	0.91	INT-MANSD :62-01	
	1.300E+0		IE-MANSD	MANUAL SHUTDOWN
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	6.000E-3		MSS-TBV-CC-BYPAS	TURBINE BYPASS VALVES FAIL TO OPEN
		EndState	->CD	
21	2.023E-6	0.8	INT-LOOPSC :34-01	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-CENTERED)
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	9.911E-3		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
22	1.751E-6	0.69	INT-LOACB-E12 :61-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION

#	Prob/Freq	Total %	Cut Set	Description
	9.911E-3		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
23	1.751E-6	0.69	INT-LOACB-E12 :61-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	1.963E-2		HCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	9.911E-3		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
24	1.620E-6	0.64	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
25	1.606E-6	0.64	INT-LOACB-E12 :61-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	9.911E-3		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
26	1.569E-6	0.62	INT-LOMFW :60-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	1.597E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	9.911E-3		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	9.911E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
27	1.518E-6	0.6	INT-MANSD :61-01	
	1.300E+0		IE-MANSD	MANUAL SHUTDOWN
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	9.911E-3		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	6.000E-3		MSS-TBV-CC-BYPAS	TURBINE BYPASS VALVES FAIL TO OPEN
		EndState	->CD	
28	1.422E-6	0.56	INT-LOOPWR :35-01	

#	Prob/Freq	Total %	Cut Set	Description
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
		EndState	->CD	
29	1.413E-6	0.56	INT-TRANS :62-01	
	8.000E-1		IE-TRANS	GENERAL PLANT TRANSIENT
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	6.000E-3		MSS-TBV-CC-BYPAS	TURBINE BYPASS VALVES FAIL TO OPEN
		EndState	->CD	
30	1.248E-6	0.49	INT-TRANS :66-35-01	
	8.000E-1		IE-TRANS	GENERAL PLANT TRANSIENT
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	5.300E-3		OEP-VCF-LP-CLOPT	LOSS OF OFFSITE POWER GIVEN REACTOR TRIP (NO LOCA)
		EndState	->CD	
31	1.070E-6	0.42	INT-LOACB-E12 :61-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	9.911E-3		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
32	9.835E-7	0.39	INT-IORV :38-01	
	2.000E-2		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
		EndState	->CD	
33	9.450E-7	0.37	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR

#	Prob/Freq	Total %	Cut Set	Description
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
		EndState	->CD	
34	9.397E-7	0.37	INT-LOOPWR :34-01	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	9.911E-3		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
35	9.339E-7	0.37	INT-TRANS :61-01	
	8.000E-1		IE-TRANS	GENERAL PLANT TRANSIENT
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	9.911E-3		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	6.000E-3		MSS-TBV-CC-BYPAS	TURBINE BYPASS VALVES FAIL TO OPEN
		EndState	->CD	
36	9.259E-7	0.37	INT-MANSD :62-01	
	1.300E+0		IE-MANSD	MANUAL SHUTDOWN
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.597E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	3.000E-2		PCS-XHE-XO-ERROR	OPERATOR FAILS TO MAINTAIN FEEDWATER INJECTION
	9.911E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
37	8.249E-7	0.33	INT-TRANS :66-34-01	
	8.000E-1		IE-TRANS	GENERAL PLANT TRANSIENT
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	9.911E-3		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	5.300E-3		OEP-VCF-LP-CLOPT	LOSS OF OFFSITE POWER GIVEN REACTOR TRIP (NO LOCA)
		EndState	->CD	
38	6.498E-7	0.26	INT-IORV :37-01	
	2.000E-2		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	9.911E-3		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING

#	Prob/Freq	Total %	Cut Set	Description
				IORV OR SLOCA
		EndState	->CD	
39	6.244E-7	0.25	INT-LOACB-E12 :61-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	9.911E-3		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
40	6.118E-7	0.24	INT-MANSD :61-01	
	1.300E+0		IE-MANSD	MANUAL SHUTDOWN
	1.597E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	9.911E-3		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	3.000E-2		PCS-XHE-XO-ERROR	OPERATOR FAILS TO MAINTAIN FEEDWATER INJECTION
	9.911E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
41	6.095E-7	0.24	INT-LOOPPC :35-01	
	2.070E-3		IE-LOOPPC	LOSS OF OFFSITE POWER INITIATOR (PLANT-CENTERED)
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
		EndState	->CD	
42	5.889E-7	0.23	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.963E-2		HCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
43	5.698E-7	0.23	INT-TRANS :62-01	
	8.000E-1		IE-TRANS	GENERAL PLANT TRANSIENT
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.597E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	3.000E-2		PCS-XHE-XO-ERROR	OPERATOR FAILS TO MAINTAIN FEEDWATER INJECTION
	9.911E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION

#	Prob/Freq	Total %	Cut Set	Description
		EndState	->CD	
44	5.537E-7	0.22	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	4.102E-3		HCI-TDP-FR-TRAIN	HPCI PUMP TRAIN FAILS TO RUN GIVEN IT STARTED
		EndState	->CD	
45	5.400E-7	0.21	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
46	5.352E-7	0.21	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	9.911E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
47	5.296E-7	0.21	INT-IORV :24-01	
	2.000E-2		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	1.600E-2		CRD-MDP-TM-TRNB	CRD TRAIN B IS UNAVAILABLE BECAUSE OF MAINTENANCE
	9.911E-3		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
		EndState	->CD	
48	5.296E-7	0.21	INT-IORV :24-01	
	2.000E-2		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	1.600E-2		CRD-MDP-TM-TRNA	CRD TRAIN A IS UNAVAILABLE BECAUSE OF MAINTENANCE

#	Prob/Freq	Total %	Cut Set	Description
	9.911E-3		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
		EndState	->CD	
49	4.782E-7	0.19	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.963E-2		HCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
	5.000E-1		RCI-XHE-XL-RSTRT	OPERATOR FAILS TO RECOVER RCIC FAILURE TO RESTART
		EndState	->CD	
50	4.593E-7	0.18	INT-MANSD :62-01	
	1.300E+0		IE-MANSD	MANUAL SHUTDOWN
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.200E-3		CDS-AOV-CC-MKUP1	MAKEUP PATH 1 FAILS
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
		EndState	->CD	

C.1.4 Peach Bottom MU7 Cutsets

MU7 Top 5 Dominant Sequences

SLOCA 04-01	/RPS, /VSS, /PCS, SPC, SDC, /CVS, LI11, /L1-CDF
SLOCA 33-01	/RPS, VSS, LI09, /L1-CDF
SLOCA 31-01	/RPS, /VSS, PCS, HPI, DEP, /L1-CDF
SLOCA 11-01	/RPS, /VSS, PCS, /HPI, SPC, SDC, /PCSR, LI10, /L1-CDF
SLOCA 30-01	/RPS, /VSS, PCS, HPI, /DEP, LPI, VA, /L1-CDF

MU7 Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cutset	Description
1	2.500E-7	28.17	SLOCA :04-01	
	1.000E+0		IE-SLOCA	SMALL LOCA
	5.000E-4		OPR-XHE-XM-LI11	OPERATOR FAILS TO START/CONTROL LATE INJECTION
	5.000E-4		RHR-XHE-XM-ERROR	OPERATOR FAILS TO START/CONTROL RHR
		EndState	->CD	
2	1.600E-7	18.03	SLOCA :33-01	
	1.000E+0		IE-SLOCA	SMALL LOCA
	4.000E-2		CFAILED	CONTAINMENT FAILURE CAUSES LOSS OF ALL INJECTION

#	Prob/Freq	Total %	Cutset	Description
	4.000E-6		VSS-SYS-FC-SLOCA	VAPOR SUPPRESSION FAILS DURING SMALL LOCA
		EndState	->CD	
3	4.175E-8	4.71	SLOCA :31-01	
	1.000E+0		IE-SLOCA	SMALL LOCA
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
		EndState	->CD	
4	4.175E-8	4.71	SLOCA :11-01	
	1.000E+0		IE-SLOCA	SMALL LOCA
	5.000E-4		OPR-XHE-XM-LI10	OPERATOR FAILS TO START/CONTROL LATE INJECTION
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
	5.000E-4		RHR-XHE-XM-ERROR	OPERATOR FAILS TO START/CONTROL RHR
		EndState	->CD	
5	4.175E-8	4.71	SLOCA :30-01	
	1.000E+0		IE-SLOCA	SMALL LOCA
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
		EndState	->CD	
6	2.400E-8	2.7	SLOCA :06-01	
	1.000E+0		IE-SLOCA	SMALL LOCA
	4.000E-2		CFAILED	CONTAINMENT FAILURE CAUSES LOSS OF ALL INJECTION
	1.200E-3		CVS-AOV-CC-0290	HARDPIPE VENT VALVE AO-8-0290 FAILS TO OPEN
	5.000E-4		RHR-XHE-XM-ERROR	OPERATOR FAILS TO START/CONTROL RHR
		EndState	->CD	
7	2.400E-8	2.7	SLOCA :06-01	
	1.000E+0		IE-SLOCA	SMALL LOCA
	4.000E-2		CFAILED	CONTAINMENT FAILURE CAUSES LOSS OF ALL INJECTION
	1.200E-3		CVS-AOV-CC-2511	HARDPIPE VENT VALVE AO-7C-2511 FAILS TO OPEN TORUS VENT VALVE AO-7C-2511 FAILS TO OPEN
	5.000E-4		RHR-XHE-XM-ERROR	OPERATOR FAILS TO START/CONTROL RHR
		EndState	->CD	
8	2.000E-8	2.25	SLOCA :06-01	
	1.000E+0		IE-SLOCA	SMALL LOCA
	4.000E-2		CFAILED	CONTAINMENT FAILURE CAUSES LOSS OF ALL INJECTION
	1.000E-3		CVS-XHE-XM-VENT	OPERATOR FAILS TO VENT CONTAINMENT
	5.000E-4		RHR-XHE-XM-ERROR	OPERATOR FAILS TO START/CONTROL RHR
		EndState	->CD	

#	Prob/Freq	Total %	Cutset	Description
9	1.503E-8	1.69	SLOCA :31-01	
	1.000E+0		IE-SLOCA	SMALL LOCA
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
10	1.503E-8	1.69	SLOCA :30-01	
	1.000E+0		IE-SLOCA	SMALL LOCA
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
11	1.420E-8	1.6	SLOCA :13-01	
	1.000E+0		IE-SLOCA	SMALL LOCA
	5.000E-4		OPR-XHE-XM-LI11	OPERATOR FAILS TO START/CONTROL LATE INJECTION
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
	3.400E-1		PCS-XHE-XL-LTSLCA	OPERATORS FAIL TO RECOVER THE POWER CONVERSION SYSTEM
	5.000E-4		RHR-XHE-XM-ERROR	OPERATOR FAILS TO START/CONTROL RHR
		EndState	->CD	
12	1.220E-8	1.38	SLOCA :31-01	
	1.000E+0		IE-SLOCA	SMALL LOCA
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
	5.000E-1		RCI-XHE-XL-RSTRT	OPERATOR FAILS TO RECOVER RCIC FAILURE TO RESTART
		EndState	->CD	
13	1.220E-8	1.38	SLOCA :30-01	
	1.000E+0		IE-SLOCA	SMALL LOCA

#	Prob/Freq	Total %	Cutset	Description
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
	5.000E-1		RCI-XHE-XL-RSTRT	OPERATOR FAILS TO RECOVER RCIC FAILURE TO RESTART
		EndState	->CD	
14	1.200E-8	1.35	SLOCA :31-01	
	1.000E+0		IE-SLOCA	SMALL LOCA
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.437E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
	1.000E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
15	1.200E-8	1.35	SLOCA :30-01	
	1.000E+0		IE-SLOCA	SMALL LOCA
	1.437E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
	1.000E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
16	1.074E-8	1.21	SLOCA :30-01	
	1.000E+0		IE-SLOCA	SMALL LOCA
	6.433E-8		DCP-BAT-CF-U2BATT	COMMON CAUSE FAILURE OF DIVISION 1-4 BATTERIES
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
		EndState	->CD	
17	1.052E-8	1.19	SLOCA :31-01	
	1.000E+0		IE-SLOCA	SMALL LOCA
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	

#	Prob/Freq	Total %	Cutset	Description
18	1.052E-8	1.19	SLOCA :30-01	
	1.000E+0		IE-SLOCA	SMALL LOCA
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	

C.1.5 Peach Bottom HU7 Cutsets

HU7 Top 5 Dominant Sequences

LOACB-E12 62-01	/RPS,/OEP,PCS,/PPR,/SRV,HPI,DEP,/L1-CDF
XLOCA 2-02	L2-CSTET
LOACB-E12 :16-01	/RPS,/OEP,PCS,/PPR,/SRV,/HPI,SPC,/DEP,CRD,/CDS,CND,RHR,PCSR,CVS,LI02,/L1-CDF
LOACB-E12 61-01	/RPS,/OEP,PCS,/PPR,/SRV,HPI,/DEP,CDS,LPI,VA,/L1-CDF
LOCHS 52-01	/RPS,/OEP,/PPR,/SRV,HPI,/DEP,CDS,LPI,VA,/L1-CDF

HU3 Top 50 Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	4.320E-7	21.36	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	4.800E-5		DCP-BAT-LP-BATTD	DIVISION IV BATTERIES FAIL
		EndState	->CD	
2	1.000E-7	4.94	INT-XLOCA :2-01	
	1.000E-7		IE-XLOCA	EXCESSIVE LOCA (VESSEL RUPTURE)
	1.000E+0		RPVRM	RPV RUPTURE MITIGATION
		EndState	->CD	
3	8.640E-8	4.27	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	9.600E-6		ACP-BAC-LP-E42	4160 VAC BUS E42 (20A18) IS UNAVAILABLE
		EndState	->CD	
4	8.640E-8	4.27	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	9.600E-6		DCP-BDC-LP-DIV	DIVISION IV 125VDC BUS FAILS
		EndState	->CD	
5	8.100E-8	4	INT-LOACB-E12 :61-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE

#	Prob/Freq	Total %	Cut Set	Description
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
6	8.100E-8	4	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
		EndState	->CD	
7	6.120E-8	3.03	INT-LOACB-E12 :16-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	4.000E-2		CFAILED	CONTAINMENT FAILURE CAUSES LOSS OF ALL INJECTION
	3.400E-1		PCS-XHE-XL-LTLACB	OPERATORS FAIL TO RECOVER THE POWER CONVERSION SYSTEM
	5.000E-4		RHR-XHE-XM-ERROR	OPERATOR FAILS TO START/CONTROL RHR
		EndState	->CD	
8	5.400E-8	2.67	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
9	5.400E-8	2.67	INT-LOACB-E12 :61-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
10	5.000E-8	2.47	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
11	5.000E-8	2.47	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION

#	Prob/Freq	Total %	Cut Set	Description
		EndState	->CD	
12	3.150E-8	1.56	INT-LOACB-E12 :61-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
13	3.150E-8	1.56	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
		EndState	->CD	
14	2.672E-8	1.32	INT-IORV :24-01	
	2.000E-2		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	1.600E-2		CRD-MDP-TM-TRNB	CRD TRAIN B IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
		EndState	->CD	
15	2.672E-8	1.32	INT-IORV :24-01	
	2.000E-2		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	1.600E-2		CRD-MDP-TM-TRNA	CRD TRAIN A IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
		EndState	->CD	
16	2.500E-8	1.24	INT-LOMFW :60-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
17	2.500E-8	1.24	INT-LOMFW :61-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
		EndState	->CD	
18	2.440E-8	1.21	INT-LOIAS :71-01	
	1.000E+0		IE-LOIAS	LOSS OF INSTRUMENT AIR

#	Prob/Freq	Total %	Cut Set	Description
	1.435E-2		IE-IAS-MDC-CF-FRABCD	CCF TO RUN OF IAS MDCs 2A, 2B, 2C AND 2D
	1.700E-6		RPS-SYS-FC-PSOVS	HCU SCRAM PILOT SOVS FAIL
		EndState	->CD	
19	1.846E-8	0.91	INT-LOACB-E12 :61-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	4.102E-3		HCI-TDP-FR-TRAIN	HPCI PUMP TRAIN FAILS TO RUN GIVEN IT STARTED
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
20	1.846E-8	0.91	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	4.102E-3		HCI-TDP-FR-TRAIN	HPCI PUMP TRAIN FAILS TO RUN GIVEN IT STARTED
		EndState	->CD	
21	1.800E-8	0.89	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
22	1.800E-8	0.89	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
23	1.462E-8	0.72	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE

#	Prob/Freq	Total %	Cut Set	Description
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
	5.000E-1		RCI-XHE-XL-RSTRT	OPERATOR FAILS TO RECOVER RCIC FAILURE TO RESTART
		EndState	->CD	
24	1.462E-8	0.72	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
	5.000E-1		RCI-XHE-XL-RSTRT	OPERATOR FAILS TO RECOVER RCIC FAILURE TO RESTART
		EndState	->CD	
25	1.437E-8	0.71	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.437E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	1.000E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
26	1.437E-8	0.71	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.437E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.000E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
27	1.287E-8	0.64	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	6.433E-8		DCP-BAT-CF-U2BATT	COMMON CAUSE FAILURE OF DIVISION 1-4 BATTERIES
		EndState	->CD	
28	1.260E-8	0.62	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK

#	Prob/Freq	Total %	Cut Set	Description
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
29	1.260E-8	0.62	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
30	1.188E-8	0.59	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	1.200E-4		DCP-BCH-LP-CHRD1	DIVISION IV BATTERY CHARGER 2DD03 FAILS
	1.100E-2		DCP-XHE-XM-BUCHR	OPERATOR FAILS TO ALIGN BACKUP CHARGER
		EndState	->CD	
31	1.171E-8	0.58	INT-MANSD :65-01	
	1.300E+0		IE-MANSD	MANUAL SHUTDOWN
	5.300E-3		OEP-VCF-LP-CLOPT	LOSS OF OFFSITE POWER GIVEN REACTOR TRIP (NO LOCA)
	1.700E-6		RPS-SYS-FC-PSOVS	HCU SCRAM PILOT SOVS FAIL
		EndState	->CD	
32	1.000E-8	0.49	INT-IORV :03-01	
	2.000E-2		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	1.000E-3		OPR-XHE-XM-CSTFIL	OPERATOR FAILS TO REFILL THE CST
	5.000E-4		RHR-XHE-XM-ERROR	OPERATOR FAILS TO START/CONTROL RHR
		EndState	->CD	
33	9.744E-9	0.48	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN

#	Prob/Freq	Total %	Cut Set	Description
	5.000E-1		RCI-XHE-XL-RSTRT	OPERATOR FAILS TO RECOVER RCIC FAILURE TO RESTART
		EndState	->CD	
34	9.744E-9	0.48	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
	5.000E-1		RCI-XHE-XL-RSTRT	OPERATOR FAILS TO RECOVER RCIC FAILURE TO RESTART
		EndState	->CD	
35	9.190E-9	0.45	INT-LOCHS :55-6-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	9.190E-5		PPR-SRV-OO-2VLVS	TWO OR MORE SRVS FAIL TO CLOSE
		EndState	->CD	
36	9.000E-9	0.44	INT-LOMFW :61-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
37	9.000E-9	0.44	INT-LOMFW :60-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
38	8.400E-9	0.42	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR

#	Prob/Freq	Total %	Cut Set	Description
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
39	8.400E-9	0.42	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
40	7.383E-9	0.36	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	4.102E-3		RCI-TDP-FR-TRAIN	RCIC PUMP FAILS TO RUN GIVEN THAT IT STARTED
		EndState	->CD	
41	7.383E-9	0.36	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	4.102E-3		RCI-TDP-FR-TRAIN	RCIC PUMP FAILS TO RUN GIVEN THAT IT STARTED
		EndState	->CD	
42	7.308E-9	0.36	INT-LOMFW :60-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
	5.000E-1		RCI-XHE-XL-RSTRT	OPERATOR FAILS TO RECOVER RCIC FAILURE TO RESTART

#	Prob/Freq	Total %	Cut Set	Description
		EndState	->CD	
43	7.308E-9	0.36	INT-LOMFW :61-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
	5.000E-1		RCI-XHE-XL-RSTRT	OPERATOR FAILS TO RECOVER RCIC FAILURE TO RESTART
		EndState	->CD	
44	7.185E-9	0.36	INT-LOMFW :61-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.437E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	1.000E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
45	7.185E-9	0.36	INT-LOMFW :60-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	1.437E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.000E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
46	7.000E-9	0.35	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
47	7.000E-9	0.35	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION

#	Prob/Freq	Total %	Cut Set	Description
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
48	6.300E-9	0.31	INT-LOMFW :61-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
49	6.300E-9	0.31	INT-LOMFW :60-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
50	6.276E-9	0.31	INT-ISL-RHR :3-01	
	2.092E-6		IE-ISL-RHR	ISLOCA IE 2-MOV RHR INTERFACE
	3.000E-2		ISL-PSF-RP-RHR	RHR letdown pipe ruptures
	1.000E-1		ZV-ISL-REC-RHR	ISLOCA RUPTURE IS NOT RECOVERABLE
		EndState	->CD	

C.1.6 Peach Bottom MA1 Sequence and Cutset Report

MA1 Top 5 Dominant Sequences

LOOPGR 39-58-6-1-01	/RPS, EPS, /PPR, /SRV, RPSL, /HPI, OPR-02H, DGR-02H, CWG-02H, /DE-OPRGR-04H2, /L1-CDF
LOOPGR 39-30-1-01	/RPS, EPS, /PPR, /SRV, /RPSL, /RCI01, EXT, DEP01, OPR-02H, DGR-02H, CWG-02H, /DE-OPRGR-04H2, /L1-CDF
LOOPGR 39-58-7-3-01	/RPS, EPS, /PPR, /SRV, RPSL, HPI, OPR-RV, OPR-CF, /L1-CDF
LOOPGR 39-24-1-01	/RPS, EPS, /PPR, /SRV, /RPSL, /RCI01, EXT, /DEP01, FWS, OPR-02H, DGR-02H, CWG-02H, /DE-OPRGR-04H2, /L1-CDF
LOOPGR 39-57-1-01	/RPS, EPS, /PPR, /SRV, /RPSL, RCI01, HCI01, OPR-01H, DGR-01H, CWG-01H, /DE-OPRGR-03H1, /L1-CDF

MA1 Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cutset	Description
1	5.929E-5	14.92	LOOPGR :39-58-6-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.000E-3		CWG-XHE-XL-NR02H	OPERATOR FAILS TO ESTABLISH CONOWINGO TIE LINE SETUP IN 2 HOURS
	6.868E-1		EPS-XHE-XL-NR02H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 2 HOURS
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	1.000E-1		RRS-MDP-LK-SEALS	RECIRCULATION PUMP SEALS FAIL
		EndState	->CD	
2	5.337E-5	13.42	LOOPGR :39-30-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		ADS-XHE-XM-MDEPLT	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	2.000E-3		CWG-XHE-XL-NR02H	OPERATOR FAILS TO ESTABLISH CONOWINGO TIE LINE SETUP IN 2 HOURS
	6.868E-1		EPS-XHE-XL-NR02H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 2 HOURS
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	3.000E-1		RCI-XHE-XO-ERRLT	OPERATOR ACTIONS TO EXTEND RCIC OPERATION DURING SBO FAIL
		EndState	->CD	
3	4.999E-5	12.58	LOOPGR :39-58-7-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	9.999E-1		OPR-CF	OPR BEFORE CONTAINMENT FAILURE
	9.999E-1		OPR-RV	OPR BEFORE REACTOR VESSEL FAILURE
	1.000E-1		RRS-MDP-LK-SEALS	RECIRCULATION PUMP SEALS FAIL
		EndState	->CD	
4	1.800E-5	4.53	LOOPGR :39-58-7-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	9.999E-1		OPR-CF	OPR BEFORE CONTAINMENT FAILURE
	9.999E-1		OPR-RV	OPR BEFORE REACTOR VESSEL FAILURE
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	1.000E-1		RRS-MDP-LK-SEALS	RECIRCULATION PUMP SEALS FAIL
		EndState	->CD	
5	1.461E-5	3.68	LOOPGR :39-58-7-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN

#	Prob/Freq	Total %	Cutset	Description
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	9.999E-1		OPR-CF	OPR BEFORE CONTAINMENT FAILURE
	9.999E-1		OPR-RV	OPR BEFORE REACTOR VESSEL FAILURE
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
	5.000E-1		RCI-XHE-XL-RSTRT	OPERATOR FAILS TO RECOVER RCIC FAILURE TO RESTART
	1.000E-1		RRS-MDP-LK-SEALS	RECIRCULATION PUMP SEALS FAIL
		EndState	->CD	
6	1.437E-5	3.61	LOOPGR :39-58-7-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.437E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	9.999E-1		OPR-CF	OPR BEFORE CONTAINMENT FAILURE
	9.999E-1		OPR-RV	OPR BEFORE REACTOR VESSEL FAILURE
	1.000E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
	1.000E-1		RRS-MDP-LK-SEALS	RECIRCULATION PUMP SEALS FAIL
		EndState	->CD	
7	1.334E-5	3.36	LOOPGR :39-30-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		ADS-XHE-XM-MDEPLT	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	7.500E-2		CDS-XHE-XM-RFLLT	OPERATOR FAILS TO REFILL THE CONDENSATE STORATE TANK
	2.000E-3		CWG-XHE-XL-NR02H	OPERATOR FAILS TO ESTABLISH CONOWINGO TIE LINE SETUP IN 2 HOURS
	6.868E-1		EPS-XHE-XL-NR02H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 2 HOURS
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
		EndState	->CD	
8	1.260E-5	3.17	LOOPGR :39-58-7-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	9.999E-1		OPR-CF	OPR BEFORE CONTAINMENT FAILURE
	9.999E-1		OPR-RV	OPR BEFORE REACTOR VESSEL FAILURE
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
	1.000E-1		RRS-MDP-LK-SEALS	RECIRCULATION PUMP SEALS FAIL
		EndState	->CD	
9	1.245E-5	3.13	LOOPGR :39-24-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)

#	Prob/Freq	Total %	Cutset	Description
	2.000E-3		CWG-XHE-XL-NR02H	OPERATOR FAILS TO ESTABLISH CONOWINGO TIE LINE SETUP IN 2 HOURS
	7.000E-1		/DEP01	MANUAL REACTOR DEPRESS
	6.868E-1		EPS-XHE-XL-NR02H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 2 HOURS
	1.000E-1		FWS-XHE-XM-ERRLT	OPERATOR FAILS TO ALIGN FIREWATER
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	3.000E-1		RCI-XHE-XO-ERRLT	OPERATOR ACTIONS TO EXTEND RCIC OPERATION DURING SBO FAIL
		EndState	->CD	
10	1.164E-5	2.93	LOOPGR :39-57-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.000E-2		CWG-XHE-XL-NR01H	OPERATOR FAILS TO ESTABLISH CONOWINGO TIE LINE SETUP IN 1 HOUR
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	1.000E-3		OPR-XHE-XM-CSTFIL	OPERATOR FAILS TO REFILL THE CST
		EndState	->CD	
11	1.164E-5	2.93	LOOPGR :39-57-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.000E-2		CWG-XHE-XL-NR01H	OPERATOR FAILS TO ESTABLISH CONOWINGO TIE LINE SETUP IN 1 HOUR
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	1.000E-3		OPR-XHE-XM-CSTFIL	OPERATOR FAILS TO REFILL THE CST
		EndState	->CD	
12	1.164E-5	2.93	LOOPGR :39-57-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.000E-2		CWG-XHE-XL-NR01H	OPERATOR FAILS TO ESTABLISH CONOWINGO TIE LINE SETUP IN 1 HOUR
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	1.000E-3		OPR-XHE-XM-CSTFIL	OPERATOR FAILS TO REFILL THE CST
		EndState	->CD	
13	9.742E-6	2.45	LOOPGR :39-58-7-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	9.999E-1		OPR-CF	OPR BEFORE CONTAINMENT FAILURE
	9.999E-1		OPR-RV	OPR BEFORE REACTOR VESSEL FAILURE
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED

#	Prob/Freq	Total %	Cutset	Description
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
	5.000E-1		RCI-XHE-XL-RSTRT	OPERATOR FAILS TO RECOVER RCIC FAILURE TO RESTART
	1.000E-1		RRS-MDP-LK-SEALS	RECIRCULATION PUMP SEALS FAIL
		EndState	->CD	
14	8.398E-6	2.11	LOOPGR :39-58-7-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	9.999E-1		OPR-CF	OPR BEFORE CONTAINMENT FAILURE
	9.999E-1		OPR-RV	OPR BEFORE REACTOR VESSEL FAILURE
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
	1.000E-1		RRS-MDP-LK-SEALS	RECIRCULATION PUMP SEALS FAIL
		EndState	->CD	
15	7.381E-6	1.86	LOOPGR :39-58-7-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	9.999E-1		OPR-CF	OPR BEFORE CONTAINMENT FAILURE
	9.999E-1		OPR-RV	OPR BEFORE REACTOR VESSEL FAILURE
	4.102E-3		RCI-TDP-FR-TRAIN	RCIC PUMP FAILS TO RUN GIVEN THAT IT STARTED
	1.000E-1		RRS-MDP-LK-SEALS	RECIRCULATION PUMP SEALS FAIL
		EndState	->CD	
16	6.999E-6	1.76	LOOPGR :39-58-7-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	9.999E-1		OPR-CF	OPR BEFORE CONTAINMENT FAILURE
	9.999E-1		OPR-RV	OPR BEFORE REACTOR VESSEL FAILURE
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	1.000E-1		RRS-MDP-LK-SEALS	RECIRCULATION PUMP SEALS FAIL
		EndState	->CD	
17	5.683E-6	1.43	LOOPGR :39-58-7-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	9.999E-1		OPR-CF	OPR BEFORE CONTAINMENT FAILURE
	9.999E-1		OPR-RV	OPR BEFORE REACTOR VESSEL FAILURE
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
	5.000E-1		RCI-XHE-XL-RSTRT	OPERATOR FAILS TO RECOVER RCIC FAILURE TO RESTART
	1.000E-1		RRS-MDP-LK-SEALS	RECIRCULATION PUMP SEALS FAIL
		EndState	->CD	

#	Prob/Freq	Total %	Cutset	Description
18	4.921E-6	1.24	LOOPGR :39-58-7-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	9.999E-1		OPR-CF	OPR BEFORE CONTAINMENT FAILURE
	9.999E-1		OPR-RV	OPR BEFORE REACTOR VESSEL FAILURE
	4.102E-3		RCI-TDP-FR-TRAIN	RCIC PUMP FAILS TO RUN GIVEN THAT IT STARTED
	1.000E-1		RRS-MDP-LK-SEALS	RECIRCULATION PUMP SEALS FAIL
		EndState	->CD	
19	4.899E-6	1.23	LOOPGR :39-58-7-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	9.999E-1		OPR-CF	OPR BEFORE CONTAINMENT FAILURE
	9.999E-1		OPR-RV	OPR BEFORE REACTOR VESSEL FAILURE
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
	1.000E-1		RRS-MDP-LK-SEALS	RECIRCULATION PUMP SEALS FAIL
		EndState	->CD	
20	4.101E-6	1.03	LOOPGR :39-58-7-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	4.102E-3		HCI-TDP-FR-TRAIN	HPCI PUMP TRAIN FAILS TO RUN GIVEN IT STARTED
	9.999E-1		OPR-CF	OPR BEFORE CONTAINMENT FAILURE
	9.999E-1		OPR-RV	OPR BEFORE REACTOR VESSEL FAILURE
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	1.000E-1		RRS-MDP-LK-SEALS	RECIRCULATION PUMP SEALS FAIL
		EndState	->CD	

C.1.7 Peach Bottom MA3 (Case 1) Sequence and Cutset Report

MA3 (Case 1) Top 90 Percent Dominant Sequences

IORV 24-01	/RPS, /OEP, PCS, /HPI, CRD, LPI, VA, /L1-CDF
IORV 03-01	/RPS, /OEP, /PCS, RHR, /CVS, LI05CV, /L1-CDF
IORV 37-01	/RPS, /OEP, PCS, HPI, /DEP, LPI, VA, /L1-CDF
IORV 38-01	/RPS, /OEP, PCS, HPI, DEP, /L1-CDF

MA3 (Case 1) Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cutset	Description
1	1.336E-6	33.48	IORV :24-01	
	1.000E+0		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	1.600E-2		CRD-MDP-TM-TRNB	CRD TRAIN B IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
		EndState	->CD	

#	Prob/Freq	Total %	Cutset	Description
2	1.336E-6	33.48	IORV :24-01	
	1.000E+0		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	1.600E-2		CRD-MDP-TM-TRNA	CRD TRAIN A IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
		EndState	->CD	
3	5.000E-7	12.53	IORV :03-01	
	1.000E+0		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	1.000E-3		OPR-XHE-XM-CSTFIL	OPERATOR FAILS TO REFILL THE CST
	5.000E-4		RHR-XHE-XM-ERROR	OPERATOR FAILS TO START/CONTROL RHR
		EndState	->CD	
4	1.670E-7	4.19	IORV :24-01	
	1.000E+0		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	2.000E-3		CRD-MDP-FS-TRNB	CRD PUMP B FAILS TO START
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
		EndState	->CD	
5	1.670E-7	4.19	IORV :24-01	
	1.000E+0		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	2.000E-3		CRD-MDP-FS-TRNA	CRD PUMP A FAILS TO START
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
		EndState	->CD	
6	8.350E-8	2.09	IORV :24-01	
	1.000E+0		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	1.000E-3		CRD-XHE-XM-PUMP	OPERATOR FAILS TO START THE STANDBY CRD PUMP
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
		EndState	->CD	
7	8.350E-8	2.09	IORV :24-01	
	1.000E+0		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.000E-3		OPR-XHE-XM-CSTFIL	OPERATOR FAILS TO REFILL THE CST
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
		EndState	->CD	
8	5.845E-8	1.46	IORV :24-01	
	1.000E+0		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	7.000E-4		CRD-XVM-CC-V35B	VALVE 35B FAILS TO OPEN
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
		EndState	->CD	
9	5.845E-8	1.46	IORV :24-01	
	1.000E+0		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)

#	Prob/Freq	Total %	Cutset	Description
	7.000E-4		CRD-XVM-CC-V143B	VALVE 143B FAILS TO OPEN
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
		EndState	->CD	
10	5.845E-8	1.46	IORV :24-01	
	1.000E+0		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	7.000E-4		CRD-XVM-CC-V35A	VALVE 35A FAILS TO OPEN
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
		EndState	->CD	
11	5.845E-8	1.46	IORV :24-01	
	1.000E+0		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	7.000E-4		CRD-XVM-CC-V143A	VALVE 143A FAILS TO OPEN
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
		EndState	->CD	
12	4.175E-8	1.05	IORV :37-01	
	1.000E+0		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
		EndState	->CD	
13	4.175E-8	1.05	IORV :38-01	
	1.000E+0		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
		EndState	->CD	

C.1.8 Peach Bottom MA3 (Case 2) Sequence and Cutset Report

MA3 (Case 2) Top 5 Dominant Sequences

TRANS 67-10-01	RPS, /PPR1, RRS, /L1-CDF
TRANS 67-05-01	RPS, /PPR1, /RRS, /PCS, SLC, /L1-CDF
TRANS 67-04-01	RPS, /PPR1, /RRS, /PCS, /SLC, NX, /L1-CDF
TRANS 61-01	/RPS, /OEP, PCS, /PPR, /SRV, HPI, /DEP, CDS, LPI, VA, /L1-CDF
TRANS 62-01	/RPS, /OEP, PCS, /PPR, /SRV, HPI, DEP, /L1-CDF

MA3 (Case 2) Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cutset	Description
1	4.250E-9	8.46	TRANS :67-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT

#	Prob/Freq	Total %	Cutset	Description
	1.700E-6		RPS-SYS-FC-PSOVS	HCU SCRAM PILOT SOVS FAIL
	2.500E-3		RRS-CRB-CC-PUMP2	RECIRC PUMP 2 FIELD BREAKER FAILS TO OPEN
		EndState	->CD	
2	4.250E-9	8.46	TRANS :67-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.700E-6		RPS-SYS-FC-PSOVS	HCU SCRAM PILOT SOVS FAIL
	2.500E-3		RRS-CRB-CC-PUMP1	RECIRC PUMP 1 FIELD BREAKER FAILS TO OPEN
		EndState	->CD	
3	3.400E-9	6.77	TRANS :67-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.700E-6		RPS-SYS-FC-PSOVS	HCU SCRAM PILOT SOVS FAIL
	2.000E-3		SLC-XHE-XM-ERROR	OPERATOR FAILS TO START/CONTROL SLC
		EndState	->CD	
4	1.700E-9	3.38	TRANS :67-04-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.000E-3		OPR-XHE-XM-INHIB	OPERATOR FAILS TO INHIBIT ADS
	1.700E-6		RPS-SYS-FC-PSOVS	HCU SCRAM PILOT SOVS FAIL
		EndState	->CD	
5	1.500E-9	2.98	TRANS :61-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	6.000E-3		MSS-TBV-CC-BYPAS	TURBINE BYPASS VALVES FAIL TO OPEN
		EndState	->CD	
6	1.500E-9	2.98	TRANS :62-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	6.000E-3		MSS-TBV-CC-BYPAS	TURBINE BYPASS VALVES FAIL TO OPEN
		EndState	->CD	
7	1.325E-9	2.64	TRANS :66-34-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	5.300E-3		OEP-VCF-LP-CLOPT	LOSS OF OFFSITE POWER GIVEN REACTOR TRIP (NO LOCA)
		EndState	->CD	
8	1.325E-9	2.64	TRANS :66-35-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION

#	Prob/Freq	Total %	Cutset	Description
	5.300E-3		OEP-VCF-LP-CLOPT	LOSS OF OFFSITE POWER GIVEN REACTOR TRIP (NO LOCA)
		EndState	->CD	
9	1.020E-9	2.03	TRANS :14-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	6.000E-3		MSS-TBV-CC-BYPAS	TURBINE BYPASS VALVES FAIL TO OPEN
	1.000E-3		OPR-XHE-XM-CSTFIL	OPERATOR FAILS TO REFILL THE CST
	3.400E-1		PCS-XHE-XL-LTTRAN	OPERATORS FAIL TO RECOVER THE POWER CONVERSION SYSTEM
	5.000E-4		RHR-XHE-XM-ERROR	OPERATOR FAILS TO START/CONTROL RHR
		EndState	->CD	
10	9.500E-10	1.89	TRANS :67-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	3.800E-7		RPS-SYS-FC-RELAY	TRIP SYSTEM RELAYS FAIL
	2.500E-3		RRS-CRB-CC-PUMP2	RECIRC PUMP 2 FIELD BREAKER FAILS TO OPEN
		EndState	->CD	
11	9.500E-10	1.89	TRANS :67-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	3.800E-7		RPS-SYS-FC-RELAY	TRIP SYSTEM RELAYS FAIL
	2.500E-3		RRS-CRB-CC-PUMP1	RECIRC PUMP 1 FIELD BREAKER FAILS TO OPEN
		EndState	->CD	
12	7.600E-10	1.51	TRANS :67-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	3.800E-7		RPS-SYS-FC-RELAY	TRIP SYSTEM RELAYS FAIL
	2.000E-3		SLC-XHE-XM-ERROR	OPERATOR FAILS TO START/CONTROL SLC
		EndState	->CD	
13	6.250E-10	1.24	TRANS :67-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.500E-7		RPS-SYS-FC-MECH	CONTROL ROD DRIVE MECHANICAL FAILURE
	2.500E-3		RRS-CRB-CC-PUMP2	RECIRC PUMP 2 FIELD BREAKER FAILS TO OPEN
		EndState	->CD	
14	6.250E-10	1.24	TRANS :67-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.500E-7		RPS-SYS-FC-MECH	CONTROL ROD DRIVE MECHANICAL FAILURE
	2.500E-3		RRS-CRB-CC-PUMP1	RECIRC PUMP 1 FIELD BREAKER FAILS TO OPEN
		EndState	->CD	
15	5.400E-10	1.07	TRANS :61-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	6.000E-3		MSS-TBV-CC-BYPAS	TURBINE BYPASS VALVES FAIL TO OPEN
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	

#	Prob/Freq	Total %	Cutset	Description
16	5.400E-10	1.07	TRANS :62-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	6.000E-3		MSS-TBV-CC-BYPAS	TURBINE BYPASS VALVES FAIL TO OPEN
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE

C.1.9 Peach Bottom MA6 (Case 1) Sequence and Cutset Report

MA6 (Case 1) Top 5 Dominant Sequences

LOCHS 52-01	/RPS, /OEP, /PPR, /SRV, HPI, /DEP, CDS, LPI, VA, /L1 CDF
LOCHS 53-01	/RPS, /OEP, /PPR, /SRV, HPI, DEP, /L1 CDF
LOCHS 55-6-01	/RPS,/OPE,/PPR,P2,LPI,/L1-CDF
LOCHS 59-01	RPS,OEP,/L1-CDF
LOCHS-07-01	/RPS, /OEP, /PPR, /SRV, /HPI,SPC,/DEP,/CRD,RHR,PCSR,CVS,LI02,/L1-CDF

MA6 (Case 1) Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	2.500E-7	10.88	INT-LOCHS :52-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
2	2.500E-7	10.88	INT-LOCHS :53-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
		EndState	->CD	
3	1.462E-7	6.36	INT-LOCHS :52-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION

#	Prob/Freq	Total %	Cut Set	Description
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
4	1.462E-7	6.36	INT-LOCHS :53-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
5	9.744E-8	4.24	INT-LOCHS :53-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
6	9.744E-8	4.24	INT-LOCHS :52-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
7	9.000E-8	3.92	INT-LOCHS :52-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION

#	Prob/Freq	Total %	Cut Set	Description
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
8	9.000E-8	3.92	INT-LOCHS :53-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
9	7.185E-8	3.13	INT-LOCHS :53-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.437E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	1.000E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
10	7.185E-8	3.13	INT-LOCHS :52-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.437E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.000E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
11	6.433E-8	2.8	INT-LOCHS :53-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	6.433E-8		DCP-BAT-CF-U2BATT	COMMON CAUSE FAILURE OF DIVISION 1-4 BATTERIES
		EndState	->CD	
12	6.300E-8	2.74	INT-LOCHS :52-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION

#	Prob/Freq	Total %	Cut Set	Description
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
13	6.300E-8	2.74	INT-LOCHS :53-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
14	5.684E-8	2.47	INT-LOCHS :52-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
15	5.684E-8	2.47	INT-LOCHS :53-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
16	4.595E-8	2	INT-LOCHS :55-6-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	9.190E-5		PPR-SRV-OO-2VLVS	TWO OR MORE SRVS FAIL TO CLOSE
		EndState	->CD	
17	4.200E-8	1.83	INT-LOCHS :53-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
18	4.200E-8	1.83	INT-LOCHS :52-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK

#	Prob/Freq	Total %	Cut Set	Description
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
19	3.691E-8	1.61	INT-LOCHS :52-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	4.102E-3		RCI-TDP-FR-TRAIN	RCIC PUMP FAILS TO RUN GIVEN THAT IT STARTED
		EndState	->CD	
20	3.691E-8	1.61	INT-LOCHS :53-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	4.102E-3		RCI-TDP-FR-TRAIN	RCIC PUMP FAILS TO RUN GIVEN THAT IT STARTED
		EndState	->CD	
21	3.500E-8	1.52	INT-LOCHS :53-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
22	3.500E-8	1.52	INT-LOCHS :52-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
23	3.330E-8	1.45	INT-LOCHS :52-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK

#	Prob/Freq	Total %	Cut Set	Description
	4.102E-3		HCI-TDP-FR-TRAIN	HPCI PUMP TRAIN FAILS TO RUN GIVEN IT STARTED
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
24	3.330E-8	1.45	INT-LOCHS :53-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	4.102E-3		HCI-TDP-FR-TRAIN	HPCI PUMP TRAIN FAILS TO RUN GIVEN IT STARTED
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
25	2.461E-8	1.07	INT-LOCHS :53-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	4.102E-3		RCI-TDP-FR-TRAIN	RCIC PUMP FAILS TO RUN GIVEN THAT IT STARTED
		EndState	->CD	
26	2.461E-8	1.07	INT-LOCHS :52-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	4.102E-3		RCI-TDP-FR-TRAIN	RCIC PUMP FAILS TO RUN GIVEN THAT IT STARTED
		EndState	->CD	
27	2.450E-8	1.07	INT-LOCHS :53-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
28	2.450E-8	1.07	INT-LOCHS :52-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START

#	Prob/Freq	Total %	Cut Set	Description
		EndState	->CD	
29	2.051E-8	0.89	INT-LOCHS :53-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	4.102E-3		HCI-TDP-FR-TRAIN	HPCI PUMP TRAIN FAILS TO RUN GIVEN IT STARTED
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
30	2.051E-8	0.89	INT-LOCHS :52-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	4.102E-3		HCI-TDP-FR-TRAIN	HPCI PUMP TRAIN FAILS TO RUN GIVEN IT STARTED
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
31	1.784E-8	0.78	INT-LOCHS :55-6-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	3.569E-5		PPR-SRV-OO-3VLVS	THREE OR MORE SRVS FAIL TO CLOSE
		EndState	->CD	
32	1.746E-8	0.76	INT-LOCHS :55-6-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.900E-4		ESF-ASL-MC-LEVEL	ECCS LEVEL SENSORS MISCALIBRATED
	9.190E-5		PPR-SRV-OO-2VLVS	TWO OR MORE SRVS FAIL TO CLOSE
		EndState	->CD	
33	1.436E-8	0.62	INT-LOCHS :53-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	4.102E-3		HCI-TDP-FR-TRAIN	HPCI PUMP TRAIN FAILS TO RUN GIVEN IT STARTED
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
34	1.436E-8	0.62	INT-LOCHS :53-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	4.102E-3		RCI-TDP-FR-TRAIN	RCIC PUMP FAILS TO RUN GIVEN THAT IT STARTED
		EndState	->CD	

#	Prob/Freq	Total %	Cut Set	Description
35	1.436E-8	0.62	INT-LOCHS :52-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	4.102E-3		RCI-TDP-FR-TRAIN	RCIC PUMP FAILS TO RUN GIVEN THAT IT STARTED
		EndState	->CD	
36	1.436E-8	0.62	INT-LOCHS :52-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	4.102E-3		HCI-TDP-FR-TRAIN	HPCI PUMP TRAIN FAILS TO RUN GIVEN IT STARTED
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
37	1.219E-8	0.53	INT-LOCHS :52-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	7.968E-3		RCI-MOV-FC-XFER	RCIC FAILS TO TRANSFER DURING RECIRCULATION
	1.700E-1		RCI-XHE-XL-XFER	OPERATOR FAILS TO RECOVER SUCTN XFER FAILURE
		EndState	->CD	
38	1.219E-8	0.53	INT-LOCHS :53-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	7.968E-3		RCI-MOV-FC-XFER	RCIC FAILS TO TRANSFER DURING RECIRCULATION
	1.700E-1		RCI-XHE-XL-XFER	OPERATOR FAILS TO RECOVER SUCTN XFER FAILURE
		EndState	->CD	
39	9.010E-9	0.39	INT-LOCHS :59-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.300E-3		OEP-VCF-LP-CLOPT	LOSS OF OFFSITE POWER GIVEN REACTOR TRIP (NO LOCA)
	1.700E-6		RPS-SYS-FC-PSOVS	HCU SCRAM PILOT SOVS FAIL

#	Prob/Freq	Total %	Cut Set	Description
		EndState	->CD	
40	9.000E-9	0.39	INT-LOCHS :52-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.000E-3		RCI-MOV-CC-INJEC	RCIC INJECTION VALVE CAUSES FAILURE TO START
		EndState	->CD	
41	9.000E-9	0.39	INT-LOCHS :52-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.000E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
42	9.000E-9	0.39	INT-LOCHS :53-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	1.000E-3		RCI-MOV-CC-INJEC	RCIC INJECTION VALVE CAUSES FAILURE TO START
		EndState	->CD	
43	9.000E-9	0.39	INT-LOCHS :53-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE

#	Prob/Freq	Total %	Cut Set	Description
	1.000E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
44	8.411E-9	0.37	INT-LOCHS :53-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	4.102E-3		HCI-TDP-FR-TRAIN	HPCI PUMP TRAIN FAILS TO RUN GIVEN IT STARTED
	4.102E-3		RCI-TDP-FR-TRAIN	RCIC PUMP FAILS TO RUN GIVEN THAT IT STARTED
		EndState	->CD	
45	8.411E-9	0.37	INT-LOCHS :52-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	4.102E-3		HCI-TDP-FR-TRAIN	HPCI PUMP TRAIN FAILS TO RUN GIVEN IT STARTED
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	4.102E-3		RCI-TDP-FR-TRAIN	RCIC PUMP FAILS TO RUN GIVEN THAT IT STARTED
		EndState	->CD	
46	8.160E-9	0.36	INT-LOCHS :07-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	4.000E-2		CFAILED	CONTAINMENT FAILURE CAUSES LOSS OF ALL INJECTION
	1.200E-3		CVS-AOV-CC-0290	HARDPIPE VENT VALVE AO-8-0290 FAILS TO OPEN
	3.400E-1		PCS-XHE-XL-LTLCHS	OPERATORS FAIL TO RECOVER THE POWER CONVERSION SYSTEM
	5.000E-4		RHR-XHE-XM-ERROR	OPERATOR FAILS TO START/CONTROL RHR
		EndState	->CD	
47	8.160E-9	0.36	INT-LOCHS :07-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	4.000E-2		CFAILED	CONTAINMENT FAILURE CAUSES LOSS OF ALL INJECTION
	1.200E-3		CVS-AOV-CC-2511	HARDPIPE VENT VALVE AO-7C-2511 FAILS TO OPEN TORUS VENT VALVE AO-7C-2511 FAILS TO OPEN
	3.400E-1		PCS-XHE-XL-LTLCHS	OPERATORS FAIL TO RECOVER THE POWER CONVERSION SYSTEM
	5.000E-4		RHR-XHE-XM-ERROR	OPERATOR FAILS TO START/CONTROL RHR
		EndState	->CD	
48	8.127E-9	0.35	INT-LOCHS :52-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE

#	Prob/Freq	Total %	Cut Set	Description
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	7.968E-3		RCI-MOV-FC-XFER	RCIC FAILS TO TRANSFER DURING RECIRCULATION
	1.700E-1		RCI-XHE-XL-XFER	OPERATOR FAILS TO RECOVER SUCTN XFER FAILURE
		EndState	->CD	

C.1.10 Peach Bottom MA6 (Case 2) Sequence and Cutset Report

MA6 (Case 2) Top 90 Percent Dominant Sequences

LOCHS 52-01	/RPS, /OEP, /PPR, /SRV, HPI, /DEP, CDS, LPI, VA, /L1-CDF
LOCHS 53-01	/RPS, /OEP, /PPR, /SRV, HPI, DEP, /L1-CDF

MA6 (Case 2) Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	2.945E-4	55.73	INT-LOCHS :53-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
		EndState	->CD	
2	1.946E-4	36.82	INT-LOCHS :52-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	9.911E-3		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
3	2.374E-5	4.49	INT-LOCHS :53-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.597E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	9.911E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
4	1.569E-5	2.97	INT-LOCHS :52-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.597E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	9.911E-3		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	9.911E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	

C.1.11 Peach Bottom MA6 (Case 3) Sequence and Cutset Report

MA6 Top 90 Percent Dominant Sequences

LOMFW 60-01	/RPS, /OEP, /PPR, /SRV, HPI, /DEP, CDS, LPI, VA, /L1-CDF
LOMFW 61-01	/RPS, /OEP, /PPR, /SRV, HPI, DEP, /L1-CDF
LOMFW 63-6-01	/RPS, /OEP, /PPR, P2, LPI, /L1-CDF

MA6 Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	2.500E-7	11.32	INT-LOMFW :60-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
2	2.500E-7	11.32	INT-LOMFW :61-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
		EndState	->CD	
3	1.462E-7	6.62	INT-LOMFW :60-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
4	1.462E-7	6.62	INT-LOMFW :61-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED

#	Prob/Freq	Total %	Cut Set	Description
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
5	9.744E-8	4.41	INT-LOMFW :60-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
6	9.744E-8	4.41	INT-LOMFW :61-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
7	9.000E-8	4.07	INT-LOMFW :61-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
8	9.000E-8	4.07	INT-LOMFW :60-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	

#	Prob/Freq	Total %	Cut Set	Description
9	7.185E-8	3.25	INT-LOMFW :61-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.437E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	1.000E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
10	7.185E-8	3.25	INT-LOMFW :60-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	1.437E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.000E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
11	6.300E-8	2.85	INT-LOMFW :61-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
12	6.300E-8	2.85	INT-LOMFW :60-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
13	5.684E-8	2.57	INT-LOMFW :60-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED

#	Prob/Freq	Total %	Cut Set	Description
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
14	5.684E-8	2.57	INT-LOMFW :61-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
15	4.595E-8	2.08	INT-LOMFW :63-6-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	9.190E-5		PPR-SRV-OO-2VLVS	TWO OR MORE SRVS FAIL TO CLOSE
		EndState	->CD	
16	4.200E-8	1.9	INT-LOMFW :61-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
17	4.200E-8	1.9	INT-LOMFW :60-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
18	3.691E-8	1.67	INT-LOMFW :61-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	4.102E-3		RCI-TDP-FR-TRAIN	RCIC PUMP FAILS TO RUN GIVEN THAT IT STARTED
		EndState	->CD	
19	3.691E-8	1.67	INT-LOMFW :60-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER

#	Prob/Freq	Total %	Cut Set	Description
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	4.102E-3		RCI-TDP-FR-TRAIN	RCIC PUMP FAILS TO RUN GIVEN THAT IT STARTED
		EndState	->CD	
20	3.500E-8	1.58	INT-LOMFW :61-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
21	3.500E-8	1.58	INT-LOMFW :60-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
22	3.330E-8	1.51	INT-LOMFW :60-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	4.102E-3		HCI-TDP-FR-TRAIN	HPCI PUMP TRAIN FAILS TO RUN GIVEN IT STARTED
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
23	3.330E-8	1.51	INT-LOMFW :61-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	4.102E-3		HCI-TDP-FR-TRAIN	HPCI PUMP TRAIN FAILS TO RUN GIVEN IT STARTED
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
24	2.461E-8	1.11	INT-LOMFW :61-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER

#	Prob/Freq	Total %	Cut Set	Description
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	4.102E-3		RCI-TDP-FR-TRAIN	RCIC PUMP FAILS TO RUN GIVEN THAT IT STARTED
		EndState	->CD	
25	2.461E-8	1.11	INT-LOMFW :60-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	4.102E-3		RCI-TDP-FR-TRAIN	RCIC PUMP FAILS TO RUN GIVEN THAT IT STARTED
		EndState	->CD	
26	2.450E-8	1.11	INT-LOMFW :61-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
27	2.450E-8	1.11	INT-LOMFW :60-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
28	2.051E-8	0.93	INT-LOMFW :61-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	4.102E-3		HCI-TDP-FR-TRAIN	HPCI PUMP TRAIN FAILS TO RUN GIVEN IT STARTED
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
29	2.051E-8	0.93	INT-LOMFW :60-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	4.102E-3		HCI-TDP-FR-TRAIN	HPCI PUMP TRAIN FAILS TO RUN GIVEN IT STARTED
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
30	1.784E-8	0.81	INT-LOMFW :63-6-01	

#	Prob/Freq	Total %	Cut Set	Description
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	3.569E-5		PPR-SRV-OO-3VLVS	THREE OR MORE SRVS FAIL TO CLOSE
		EndState	->CD	
31	1.746E-8	0.79	INT-LOMFW :63-6-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	1.900E-4		ESF-ASL-MC-LEVEL	ECCS LEVEL SENSORS MISCALIBRATED
	9.190E-5		PPR-SRV-OO-2VLVS	TWO OR MORE SRVS FAIL TO CLOSE
		EndState	->CD	
32	1.436E-8	0.65	INT-LOMFW :61-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	4.102E-3		RCI-TDP-FR-TRAIN	RCIC PUMP FAILS TO RUN GIVEN THAT IT STARTED
		EndState	->CD	
33	1.436E-8	0.65	INT-LOMFW :61-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	4.102E-3		HCI-TDP-FR-TRAIN	HPCI PUMP TRAIN FAILS TO RUN GIVEN IT STARTED
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
34	1.436E-8	0.65	INT-LOMFW :60-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	4.102E-3		RCI-TDP-FR-TRAIN	RCIC PUMP FAILS TO RUN GIVEN THAT IT STARTED
		EndState	->CD	
35	1.436E-8	0.65	INT-LOMFW :60-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	4.102E-3		HCI-TDP-FR-TRAIN	HPCI PUMP TRAIN FAILS TO RUN GIVEN IT STARTED
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
36	1.219E-8	0.55	INT-LOMFW :60-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS

#	Prob/Freq	Total %	Cut Set	Description
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	7.968E-3		RCI-MOV-FC-XFER	RCIC FAILS TO TRANSFER DURING RECIRCULATION
	1.700E-1		RCI-XHE-XL-XFER	OPERATOR FAILS TO RECOVER SUCTN XFER FAILURE
		EndState	->CD	
37	1.219E-8	0.55	INT-LOMFW :61-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	7.968E-3		RCI-MOV-FC-XFER	RCIC FAILS TO TRANSFER DURING RECIRCULATION
	1.700E-1		RCI-XHE-XL-XFER	OPERATOR FAILS TO RECOVER SUCTN XFER FAILURE
		EndState	->CD	
38	9.010E-9	0.41	INT-LOMFW :67-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	5.300E-3		OEP-VCF-LP-CLOPT	LOSS OF OFFSITE POWER GIVEN REACTOR TRIP (NO LOCA)
	1.700E-6		RPS-SYS-FC-PSOVS	HCU SCRAM PILOT SOVS FAIL
		EndState	->CD	
39	9.000E-9	0.41	INT-LOMFW :61-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	1.000E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
40	9.000E-9	0.41	INT-LOMFW :61-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS

#	Prob/Freq	Total %	Cut Set	Description
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	1.000E-3		RCI-MOV-CC-INJEC	RCIC INJECTION VALVE CAUSES FAILURE TO START
		EndState	->CD	
41	9.000E-9	0.41	INT-LOMFW :60-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.000E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
42	9.000E-9	0.41	INT-LOMFW :60-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.000E-3		RCI-MOV-CC-INJEC	RCIC INJECTION VALVE CAUSES FAILURE TO START
		EndState	->CD	
43	8.411E-9	0.38	INT-LOMFW :61-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	4.102E-3		HCI-TDP-FR-TRAIN	HPCI PUMP TRAIN FAILS TO RUN GIVEN IT STARTED
	4.102E-3		RCI-TDP-FR-TRAIN	RCIC PUMP FAILS TO RUN GIVEN THAT IT STARTED
		EndState	->CD	
44	8.411E-9	0.38	INT-LOMFW :60-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	4.102E-3		HCI-TDP-FR-TRAIN	HPCI PUMP TRAIN FAILS TO RUN GIVEN IT STARTED
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	4.102E-3		RCI-TDP-FR-TRAIN	RCIC PUMP FAILS TO RUN GIVEN THAT IT STARTED
		EndState	->CD	

C.1.12 Peach Bottom MA6 (Case 4) Sequence and Cutset Report

MA6 (Case 4) Top 90 Percent Dominant Sequences

LOMFW 61-01	/RPS, /OEP, /PPR, /SRV, HPI, DEP, /L1-CDF
LOMFW 60-01	/RPS, /OEP, /PPR, /SRV, HPI, /DEP, CDS, LPI, VA, /L1-CDF

MA6 (Case 4) Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	2.945E-4	55.73	INT-LOMFW :61-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
		EndState	->CD	
2	1.946E-4	36.82	INT-LOMFW :60-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	9.911E-3		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
3	2.374E-5	4.49	INT-LOMFW :61-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.597E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	9.911E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
4	1.569E-5	2.97	INT-LOMFW :60-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	1.597E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	9.911E-3		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	9.911E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	

C.1.13 Peach Bottom MA6 (Case 5) Sequence and Cutset Report

MA6 (Case 5) Top 5 Dominant Sequences

TRANS 67-10-01	RPS,/PPR1,RRS,/L1-CDF
TRANS 67-05-01	RPS,/PPR1,/RRS,/PCS,SLC,/L1-CDF
TRANS 67-04-01	RPS,/PPR1,/RRS,/PCS,/SLC,NX,/L1-CDF
TRANS 61-01	/RPS,/OEP,PCS,/PPR,/SRV,HPI,/DEP,CDS,LPI,VA,/L1-CDF
TRANS 62-01	/RPS,/OEP,PCS,/PPR,/SRV,HPI,DEP,/L1-CDF

MA6 (Case 5) Top 50 Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	4.250E-9	7.69	INT-TRANS :67-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.700E-6		RPS-SYS-FC-PSOVS	HCU SCRAM PILOT SOVS FAIL
	2.500E-3		RRS-CRB-CC-PUMP2	RECIRC PUMP 2 FIELD BREAKER FAILS TO OPEN
		EndState	->CD	
2	4.250E-9	7.69	INT-TRANS :67-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.700E-6		RPS-SYS-FC-PSOVS	HCU SCRAM PILOT SOVS FAIL
	2.500E-3		RRS-CRB-CC-PUMP1	RECIRC PUMP 1 FIELD BREAKER FAILS TO OPEN
		EndState	->CD	
3	3.400E-9	6.15	INT-TRANS :67-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.700E-6		RPS-SYS-FC-PSOVS	HCU SCRAM PILOT SOVS FAIL
	2.000E-3		SLC-XHE-XM-ERROR	OPERATOR FAILS TO START/CONTROL SLC
		EndState	->CD	
4	1.700E-9	3.08	INT-TRANS :67-04-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.000E-3		OPR-XHE-XM-INHIB	OPERATOR FAILS TO INHIBIT ADS
	1.700E-6		RPS-SYS-FC-PSOVS	HCU SCRAM PILOT SOVS FAIL
		EndState	->CD	
5	1.500E-9	2.71	INT-TRANS :61-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	6.000E-3		MSS-TBV-CC-BYPAS	TURBINE BYPASS VALVES FAIL TO OPEN
		EndState	->CD	
6	1.500E-9	2.71	INT-TRANS :62-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION

#	Prob/Freq	Total %	Cut Set	Description
	6.000E-3		MSS-TBV-CC-BYPAS	TURBINE BYPASS VALVES FAIL TO OPEN
		EndState	->CD	
7	1.325E-9	2.4	INT-TRANS :66-34-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	5.300E-3		OEP-VCF-LP-CLOPT	LOSS OF OFFSITE POWER GIVEN REACTOR TRIP (NO LOCA)
		EndState	->CD	
8	1.325E-9	2.4	INT-TRANS :66-35-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	5.300E-3		OEP-VCF-LP-CLOPT	LOSS OF OFFSITE POWER GIVEN REACTOR TRIP (NO LOCA)
		EndState	->CD	
9	1.020E-9	1.85	INT-TRANS :14-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	6.000E-3		MSS-TBV-CC-BYPAS	TURBINE BYPASS VALVES FAIL TO OPEN
	1.000E-3		OPR-XHE-XM-CSTFIL	OPERATOR FAILS TO REFILL THE CST
	3.400E-1		PCS-XHE-XL-LTTRAN	OPERATORS FAIL TO RECOVER THE POWER CONVERSION SYSTEM
	5.000E-4		RHR-XHE-XM-ERROR	OPERATOR FAILS TO START/CONTROL RHR
		EndState	->CD	
10	9.500E-10	1.72	INT-TRANS :67-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	3.800E-7		RPS-SYS-FC-RELAY	TRIP SYSTEM RELAYS FAIL
	2.500E-3		RRS-CRB-CC-PUMP2	RECIRC PUMP 2 FIELD BREAKER FAILS TO OPEN
		EndState	->CD	
11	9.500E-10	1.72	INT-TRANS :67-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	3.800E-7		RPS-SYS-FC-RELAY	TRIP SYSTEM RELAYS FAIL
	2.500E-3		RRS-CRB-CC-PUMP1	RECIRC PUMP 1 FIELD BREAKER FAILS TO OPEN
		EndState	->CD	
12	8.770E-10	1.59	INT-TRANS :62-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI

#	Prob/Freq	Total %	Cut Set	Description
				INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	6.000E-3		MSS-TBV-CC-BYPAS	TURBINE BYPASS VALVES FAIL TO OPEN
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
13	8.770E-10	1.59	INT-TRANS :61-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	6.000E-3		MSS-TBV-CC-BYPAS	TURBINE BYPASS VALVES FAIL TO OPEN
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
14	7.746E-10	1.4	INT-TRANS :66-34-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	5.300E-3		OEP-VCF-LP-CLOPT	LOSS OF OFFSITE POWER GIVEN REACTOR TRIP (NO LOCA)
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
15	7.746E-10	1.4	INT-TRANS :66-35-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE

#	Prob/Freq	Total %	Cut Set	Description
	5.300E-3		OEP-VCF-LP-CLOPT	LOSS OF OFFSITE POWER GIVEN REACTOR TRIP (NO LOCA)
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
16	7.600E-10	1.38	INT-TRANS :67-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	3.800E-7		RPS-SYS-FC-RELAY	TRIP SYSTEM RELAYS FAIL
	2.000E-3		SLC-XHE-XM-ERROR	OPERATOR FAILS TO START/CONTROL SLC
		EndState	->CD	
17	6.250E-10	1.13	INT-TRANS :67-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.500E-7		RPS-SYS-FC-MECH	CONTROL ROD DRIVE MECHANICAL FAILURE
	2.500E-3		RRS-CRB-CC-PUMP2	RECIRC PUMP 2 FIELD BREAKER FAILS TO OPEN
		EndState	->CD	
18	6.250E-10	1.13	INT-TRANS :67-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.500E-7		RPS-SYS-FC-MECH	CONTROL ROD DRIVE MECHANICAL FAILURE
	2.500E-3		RRS-CRB-CC-PUMP1	RECIRC PUMP 1 FIELD BREAKER FAILS TO OPEN
		EndState	->CD	
19	5.846E-10	1.06	INT-TRANS :61-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	6.000E-3		MSS-TBV-CC-BYPAS	TURBINE BYPASS VALVES FAIL TO OPEN
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
20	5.846E-10	1.06	INT-TRANS :62-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	6.000E-3		MSS-TBV-CC-BYPAS	TURBINE BYPASS VALVES FAIL TO OPEN
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	

#	Prob/Freq	Total %	Cut Set	Description
21	5.400E-10	0.98	INT-TRANS :61-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	6.000E-3		MSS-TBV-CC-BYPAS	TURBINE BYPASS VALVES FAIL TO OPEN
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
22	5.400E-10	0.98	INT-TRANS :62-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	6.000E-3		MSS-TBV-CC-BYPAS	TURBINE BYPASS VALVES FAIL TO OPEN
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
23	5.164E-10	0.93	INT-TRANS :66-35-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.300E-3		OEP-VCF-LP-CLOPT	LOSS OF OFFSITE POWER GIVEN REACTOR TRIP (NO LOCA)
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
24	5.164E-10	0.93	INT-TRANS :66-34-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	5.300E-3		OEP-VCF-LP-CLOPT	LOSS OF OFFSITE POWER GIVEN REACTOR TRIP (NO LOCA)

#	Prob/Freq	Total %	Cut Set	Description
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
25	5.000E-10	0.9	INT-TRANS :67-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.500E-7		RPS-SYS-FC-MECH	CONTROL ROD DRIVE MECHANICAL FAILURE
	2.000E-3		SLC-XHE-XM-ERROR	OPERATOR FAILS TO START/CONTROL SLC
		EndState	->CD	
26	4.770E-10	0.86	INT-TRANS :66-35-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.300E-3		OEP-VCF-LP-CLOPT	LOSS OF OFFSITE POWER GIVEN REACTOR TRIP (NO LOCA)
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
27	4.770E-10	0.86	INT-TRANS :66-34-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	5.300E-3		OEP-VCF-LP-CLOPT	LOSS OF OFFSITE POWER GIVEN REACTOR TRIP (NO LOCA)
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
28	4.608E-10	0.83	INT-TRANS :62-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.600E-6		ACP-BAC-LP-E12	4160 VAC BUS E12 (20A15) IS UNAVAILABLE
	4.800E-5		DCP-BAT-LP-BATTD	DIVISION IV BATTERIES FAIL
		EndState	->CD	
29	4.311E-10	0.78	INT-TRANS :62-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR

#	Prob/Freq	Total %	Cut Set	Description
	1.437E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	6.000E-3		MSS-TBV-CC-BYPAS	TURBINE BYPASS VALVES FAIL TO OPEN
	1.000E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
30	4.311E-10	0.78	INT-TRANS :61-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.437E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	6.000E-3		MSS-TBV-CC-BYPAS	TURBINE BYPASS VALVES FAIL TO OPEN
	1.000E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
31	3.860E-10	0.7	INT-TRANS :62-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	6.433E-8		DCP-BAT-CF-U2BATT	COMMON CAUSE FAILURE OF DIVISION 1-4 BATTERIES
	6.000E-3		MSS-TBV-CC-BYPAS	TURBINE BYPASS VALVES FAIL TO OPEN
		EndState	->CD	
32	3.808E-10	0.69	INT-TRANS :66-35-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.437E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	5.300E-3		OEP-VCF-LP-CLOPT	LOSS OF OFFSITE POWER GIVEN REACTOR TRIP (NO LOCA)
	1.000E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
33	3.808E-10	0.69	INT-TRANS :66-34-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.437E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	5.300E-3		OEP-VCF-LP-CLOPT	LOSS OF OFFSITE POWER GIVEN REACTOR TRIP (NO LOCA)
	1.000E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
34	3.800E-10	0.69	INT-TRANS :67-04-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT

#	Prob/Freq	Total %	Cut Set	Description
	1.000E-3		OPR-XHE-XM-INHIB	OPERATOR FAILS TO INHIBIT ADS
	3.800E-7		RPS-SYS-FC-RELAY	TRIP SYSTEM RELAYS FAIL
		EndState	->CD	
35	3.780E-10	0.68	INT-TRANS :61-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	6.000E-3		MSS-TBV-CC-BYPAS	TURBINE BYPASS VALVES FAIL TO OPEN
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
36	3.780E-10	0.68	INT-TRANS :62-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	6.000E-3		MSS-TBV-CC-BYPAS	TURBINE BYPASS VALVES FAIL TO OPEN
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
37	3.410E-10	0.62	INT-TRANS :61-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	6.000E-3		MSS-TBV-CC-BYPAS	TURBINE BYPASS VALVES FAIL TO OPEN
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
38	3.410E-10	0.62	INT-TRANS :62-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	6.000E-3		MSS-TBV-CC-BYPAS	TURBINE BYPASS VALVES FAIL TO OPEN
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED

#	Prob/Freq	Total %	Cut Set	Description
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
39	3.339E-10	0.6	INT-TRANS :66-35-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.300E-3		OEP-VCF-LP-CLOPT	LOSS OF OFFSITE POWER GIVEN REACTOR TRIP (NO LOCA)
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
40	3.339E-10	0.6	INT-TRANS :66-34-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	5.300E-3		OEP-VCF-LP-CLOPT	LOSS OF OFFSITE POWER GIVEN REACTOR TRIP (NO LOCA)
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
41	3.013E-10	0.55	INT-TRANS :66-35-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	5.300E-3		OEP-VCF-LP-CLOPT	LOSS OF OFFSITE POWER GIVEN REACTOR TRIP (NO LOCA)
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
42	3.013E-10	0.55	INT-TRANS :66-34-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	5.300E-3		OEP-VCF-LP-CLOPT	LOSS OF OFFSITE POWER GIVEN REACTOR TRIP (NO LOCA)

#	Prob/Freq	Total %	Cut Set	Description
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
		EndState	->CD	
43	3.000E-10	0.54	INT-TRANS :62-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.200E-3		CDS-AOV-CC-MKUP1	MAKEUP PATH 1 FAILS
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
		EndState	->CD	
44	3.000E-10	0.54	INT-TRANS :62-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.200E-3		CDS-AOV-CC-MKUP2	MAKEUP PATH 2 FAILS
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
		EndState	->CD	
45	3.000E-10	0.54	INT-TRANS :61-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.200E-3		CDS-AOV-CC-MKUP1	MAKEUP PATH 1 FAILS
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
46	3.000E-10	0.54	INT-TRANS :61-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.200E-3		CDS-AOV-CC-MKUP2	MAKEUP PATH 2 FAILS
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
47	2.757E-10	0.5	INT-TRANS :64-6-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	6.000E-3		MSS-TBV-CC-BYPAS	TURBINE BYPASS VALVES FAIL TO OPEN
	9.190E-5		PPR-SRV-OO-2VLVS	TWO OR MORE SRVS FAIL TO CLOSE
		EndState	->CD	
48	2.750E-10	0.5	INT-TRANS :67-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.100E-7		RPS-SYS-FC-HCU	HCU COMPONENTS FAIL
	2.500E-3		RRS-CRB-CC-PUMP2	RECIRC PUMP 2 FIELD BREAKER FAILS TO OPEN

#	Prob/Freq	Total %	Cut Set	Description
		EndState	->CD	
49	2.750E-10	0.5	INT-TRANS :67-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.100E-7		RPS-SYS-FC-HCU	HCU COMPONENTS FAIL
	2.500E-3		RRS-CRB-CC-PUMP1	RECIRC PUMP 1 FIELD BREAKER FAILS TO OPEN
		EndState	->CD	
50	2.520E-10	0.46	INT-TRANS :62-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	6.000E-3		MSS-TBV-CC-BYPAS	TURBINE BYPASS VALVES FAIL TO OPEN
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	

C.1.14 Peach Bottom MA6 (Case 6) Sequence and Cutset Report

MA6 (Case 6) Top 90 Percent Dominant Sequences

TRANS 62-01	/RPS,/OEP,PCS,/PPR,/SRV,HPI,DEP,/L1-CDF
TRANS 61-01	/RPS,/OEP,PCS,/PPR,/SRV,HPI,/DEP,CDS,LPI,VA,/L1-CDF
TRANS 66-35-01	/RPS,OEP,/EPS,/PPR,/SRV,HPI,DEP,L1-CDF,/SPC,/CSS,/SYS-FALSE,/DE-N-COMBYPASS,/DE-N-TRANS,DE-RCSPRESS-HIGH
TRANS 66-34-01	/RPS,OEP,/EPS,/PPR,/SRV,HPI,/DEP,LPI,VA,/L1-CDF

MA6 (Case 6) Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	8.834E-6	38	INT-TRANS :62-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	3.000E-2		PCS-XHE-XO-ERROR	OPERATOR FAILS TO MAINTAIN FEEDWATER INJECTION
		EndState	->CD	
2	5.837E-6	25.11	INT-TRANS :61-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	9.911E-3		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	3.000E-2		PCS-XHE-XO-ERROR	OPERATOR FAILS TO MAINTAIN FEEDWATER INJECTION
		EndState	->CD	
3	1.767E-6	7.6	INT-TRANS :62-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT

#	Prob/Freq	Total %	Cut Set	Description
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	6.000E-3		MSS-TBV-CC-BYPAS	TURBINE BYPASS VALVES FAIL TO OPEN
		EndState	->CD	
4	1.561E-6	6.71	INT-TRANS :66-35-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	5.300E-3		OEP-VCF-LP-CLOPT	LOSS OF OFFSITE POWER GIVEN REACTOR TRIP (NO LOCA)
		EndState	->CD	
5	1.167E-6	5.02	INT-TRANS :61-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	9.911E-3		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	6.000E-3		MSS-TBV-CC-BYPAS	TURBINE BYPASS VALVES FAIL TO OPEN
		EndState	->CD	
6	1.031E-6	4.44	INT-TRANS :66-34-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	9.911E-3		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	5.300E-3		OEP-VCF-LP-CLOPT	LOSS OF OFFSITE POWER GIVEN REACTOR TRIP (NO LOCA)
		EndState	->CD	
7	7.123E-7	3.06	INT-TRANS :62-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.597E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	3.000E-2		PCS-XHE-XO-ERROR	OPERATOR FAILS TO MAINTAIN FEEDWATER INJECTION
	9.911E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
8	4.706E-7	2.02	INT-TRANS :61-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.597E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	9.911E-3		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	3.000E-2		PCS-XHE-XO-ERROR	OPERATOR FAILS TO MAINTAIN FEEDWATER INJECTION
	9.911E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL

#	Prob/Freq	Total %	Cut Set	Description
				RCIC INJECTION
		EndState	->CD	
9	3.533E-7	1.52	INT-TRANS :62-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.200E-3		CDS-AOV-CC-MKUP1	MAKEUP PATH 1 FAILS
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
		EndState	->CD	
10	3.533E-7	1.52	INT-TRANS :62-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.200E-3		CDS-AOV-CC-MKUP2	MAKEUP PATH 2 FAILS
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
		EndState	->CD	
11	2.335E-7	1	INT-TRANS :61-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.200E-3		CDS-AOV-CC-MKUP1	MAKEUP PATH 1 FAILS
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	9.911E-3		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
12	2.335E-7	1	INT-TRANS :61-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.200E-3		CDS-AOV-CC-MKUP2	MAKEUP PATH 2 FAILS
	1.963E-2		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	9.911E-3		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
13	1.425E-7	0.61	INT-TRANS :62-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.597E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	6.000E-3		MSS-TBV-CC-BYPAS	TURBINE BYPASS VALVES FAIL TO OPEN
	9.911E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
14	1.258E-7	0.54	INT-TRANS :66-35-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.597E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	5.300E-3		OEP-VCF-LP-CLOPT	LOSS OF OFFSITE POWER GIVEN REACTOR TRIP (NO LOCA)

#	Prob/Freq	Total %	Cut Set	Description
	9.911E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
15	9.412E-8	0.4	INT-TRANS :61-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.597E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	9.911E-3		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	6.000E-3		MSS-TBV-CC-BYPAS	TURBINE BYPASS VALVES FAIL TO OPEN
	9.911E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
16	8.833E-8	0.38	INT-TRANS :62-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.963E-2		HCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	3.000E-2		PCS-XHE-XO-ERROR	OPERATOR FAILS TO MAINTAIN FEEDWATER INJECTION
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
17	8.314E-8	0.36	INT-TRANS :66-34-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.597E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	9.911E-3		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	5.300E-3		OEP-VCF-LP-CLOPT	LOSS OF OFFSITE POWER GIVEN REACTOR TRIP (NO LOCA)
	9.911E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
18	8.100E-8	0.35	INT-TRANS :62-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	3.000E-2		PCS-XHE-XO-ERROR	OPERATOR FAILS TO MAINTAIN FEEDWATER INJECTION
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
19	8.028E-8	0.35	INT-TRANS :62-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.500E-2		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR

#	Prob/Freq	Total %	Cut Set	Description
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	3.000E-2		PCS-XHE-XO-ERROR	OPERATOR FAILS TO MAINTAIN FEEDWATER INJECTION
	9.911E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	

C.1.15 Peach Bottom HA7 (Case 1) Sequence and Cutset Report

HA7 (Case 1) Top 5 Dominant Sequences

LOACB-E12 62-01	/RPS,/OEP,PCS,/PPR,/SRV,HPI,DEP,/L1-CDF
LOACB-E12 61-01	/RPS,/OEP,PCS,/PPR,/SRV,HPI,/DEP,CDS,LPI,VA,/L1-CDF
LOACB-E12 :16-01	/RPS,/OEP,PCS,/PPR,/SRV,/HPI,SPC,/DEP,CRD,/CDS,CND,RHR,PCSR,CVS,LI02,/L1-CDF
XLOCA 2-02	L2-CSTET
LOCHS 52-01	/RPS,/OEP,/PPR,/SRV,HPI,/DEP,CDS,LPI,VA,/L1-CDF

HA7 (Case 1) Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	4.320E-6	39.59	INT-LOACB-E12 :62-01	
	9.000E-2		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	4.800E-5		DCP-BAT-LP-BATTD	DIVISION IV BATTERIES FAIL
		EndState	->CD	
2	8.640E-7	7.92	INT-LOACB-E12 :62-01	
	9.000E-2		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	9.600E-6		ACP-BAC-LP-E42	4160 VAC BUS E42 (20A18) IS UNAVAILABLE
		EndState	->CD	
3	8.640E-7	7.92	INT-LOACB-E12 :62-01	
	9.000E-2		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	9.600E-6		DCP-BDC-LP-DIV	DIVISION IV 125VDC BUS FAILS
		EndState	->CD	
4	8.100E-7	7.42	INT-LOACB-E12 :61-01	
	9.000E-2		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	

#	Prob/Freq	Total %	Cut Set	Description
5	8.100E-7	7.42	INT-LOACB-E12 :62-01	
	9.000E-2		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
		EndState	->CD	
6	6.120E-7	5.61	INT-LOACB-E12 :16-01	
	9.000E-2		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	4.000E-2		CFAILED	CONTAINMENT FAILURE CAUSES LOSS OF ALL INJECTION
	3.400E-1		PCS-XHE-XL-LTLACB	OPERATORS FAIL TO RECOVER THE POWER CONVERSION SYSTEM
	5.000E-4		RHR-XHE-XM-ERROR	OPERATOR FAILS TO START/CONTROL RHR
		EndState	->CD	
7	5.400E-7	4.95	INT-LOACB-E12 :62-01	
	9.000E-2		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
8	5.400E-7	4.95	INT-LOACB-E12 :61-01	
	9.000E-2		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
9	3.150E-7	2.89	INT-LOACB-E12 :61-01	
	9.000E-2		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
10	3.150E-7	2.89	INT-LOACB-E12 :62-01	
	9.000E-2		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START

#	Prob/Freq	Total %	Cut Set	Description
		EndState	->CD	
11	1.846E-7	1.69	INT-LOACB-E12 :61-01	
	9.000E-2		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	4.102E-3		HCI-TDP-FR-TRAIN	HPCI PUMP TRAIN FAILS TO RUN GIVEN IT STARTED
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
12	1.846E-7	1.69	INT-LOACB-E12 :62-01	
	9.000E-2		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	4.102E-3		HCI-TDP-FR-TRAIN	HPCI PUMP TRAIN FAILS TO RUN GIVEN IT STARTED
		EndState	->CD	
13	1.188E-7	1.09	INT-LOACB-E12 :62-01	
	9.000E-2		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	1.200E-4		DCP-BCH-LP-CHRD1	DIVISION IV BATTERY CHARGER 2DD03 FAILS
	1.100E-2		DCP-XHE-XM-BUCHR	OPERATOR FAILS TO ALIGN BACKUP CHARGER
		EndState	->CD	
14	1.000E-7	0.92	INT-XLOCA :2-01	
	1.000E-7		IE-XLOCA	EXCESSIVE LOCA (VESSEL RUPTURE)
	1.000E+0		RPVRM	RPV RUPTURE MITIGATION
		EndState	->CD	
15	5.000E-8	0.46	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
16	5.000E-8	0.46	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
		EndState	->CD	
17	4.500E-8	0.41	INT-LOACB-E12 :61-01	
	9.000E-2		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	1.000E-3		HCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HPCI INJECTION

#	Prob/Freq	Total %	Cut Set	Description
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
18	4.500E-8	0.41	INT-LOACB-E12 :61-01	
	9.000E-2		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	1.000E-3		HCI-MOV-CC-INJEC	HPCI INJECTION VALVE CAUSES FAILURE TO START
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
19	4.500E-8	0.41	INT-LOACB-E12 :62-01	
	9.000E-2		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.000E-3		HCI-MOV-CC-INJEC	HPCI INJECTION VALVE CAUSES FAILURE TO START
		EndState	->CD	
20	4.500E-8	0.41	INT-LOACB-E12 :62-01	
	9.000E-2		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.000E-3		HCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
		EndState	->CD	
21	2.672E-8	0.24	INT-IORV :24-01	
	2.000E-2		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	1.600E-2		CRD-MDP-TM-TRNB	CRD TRAIN B IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
		EndState	->CD	
22	2.672E-8	0.24	INT-IORV :24-01	
	2.000E-2		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	1.600E-2		CRD-MDP-TM-TRNA	CRD TRAIN A IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
		EndState	->CD	

C.1.16 Peach Bottom HA7 (Case 2) Sequence and Cutset Report

HA7 (Case 2) Top 5 Dominant Sequences

LOACB-E12 62-01	/RPS,/OEP,PCS,/PPR,/SRV,HPI,DEP,/L1-CDF
XLOCA 2-02	L2-CSTET
LOACB-E12 61-01	/RPS,/OEP,PCS,/PPR,/SRV,HPI,/DEP,CDS,LPI,VA,/L1-CDF
LOACB-E12 16-01	/RPS,/OEP,PCS,/PPR,/SRV,/HPI,SPC,/DEP,CRD,/CDS,CND,RHR,PCSR,CVS,LI02,/L1-CDF
LOCHS 52-01	/RPS,/OEP,/PPR,/SRV,HPI,/DEP,CDS,LPI,VA,/L1-CDF

HA7 (Case 2) Top 50 Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	4.320E-7	21.58	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	4.800E-5		DCP-BAT-LP-BATTD	DIVISION IV BATTERIES FAIL
		EndState	->CD	
2	1.000E-7	4.99	INT-XLOCA :2-01	
	1.000E-7		IE-XLOCA	EXCESSIVE LOCA (VESSEL RUPTURE)
	1.000E+0		RPVRM	RPV RUPTURE MITIGATION
		EndState	->CD	
3	8.640E-8	4.32	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	9.600E-6		ACP-BAC-LP-E42	4160 VAC BUS E42 (20A18) IS UNAVAILABLE
		EndState	->CD	
4	8.640E-8	4.32	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	9.600E-6		DCP-BDC-LP-DIV	DIVISION IV 125VDC BUS FAILS
		EndState	->CD	
5	8.100E-8	4.05	INT-LOACB-E12 :61-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
6	8.100E-8	4.05	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN

#	Prob/Freq	Total %	Cut Set	Description
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
		EndState	->CD	
7	6.120E-8	3.06	INT-LOACB-E12 :16-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	4.000E-2		CFAILED	CONTAINMENT FAILURE CAUSES LOSS OF ALL INJECTION
	3.400E-1		PCS-XHE-XL-LTLACB	OPERATORS FAIL TO RECOVER THE POWER CONVERSION SYSTEM
	5.000E-4		RHR-XHE-XM-ERROR	OPERATOR FAILS TO START/CONTROL RHR
		EndState	->CD	
8	5.400E-8	2.7	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
9	5.400E-8	2.7	INT-LOACB-E12 :61-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
10	5.000E-8	2.5	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
11	5.000E-8	2.5	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
		EndState	->CD	
12	3.150E-8	1.57	INT-LOACB-E12 :61-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START

#	Prob/Freq	Total %	Cut Set	Description
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
13	3.150E-8	1.57	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
		EndState	->CD	
14	2.672E-8	1.33	INT-IORV :24-01	
	2.000E-2		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	1.600E-2		CRD-MDP-TM-TRNB	CRD TRAIN B IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
		EndState	->CD	
15	2.672E-8	1.33	INT-IORV :24-01	
	2.000E-2		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	1.600E-2		CRD-MDP-TM-TRNA	CRD TRAIN A IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
		EndState	->CD	
16	2.500E-8	1.25	INT-LOMFW :60-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
17	2.500E-8	1.25	INT-LOMFW :61-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
		EndState	->CD	
18	2.440E-8	1.22	INT-LOIAS :71-01	
	1.000E+0		IE-LOIAS	LOSS OF INSTRUMENT AIR
	1.435E-2		IE-IAS-MDC-CF-FRABCD	CCF TO RUN OF IAS MDCs 2A, 2B, 2C AND 2D
	1.700E-6		RPS-SYS-FC-PSOVS	HCU SCRAM PILOT SOVS FAIL

#	Prob/Freq	Total %	Cut Set	Description
		EndState	->CD	
19	1.846E-8	0.92	INT-LOACB-E12 :61-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	4.102E-3		HCI-TDP-FR-TRAIN	HPCI PUMP TRAIN FAILS TO RUN GIVEN IT STARTED
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
20	1.846E-8	0.92	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	4.102E-3		HCI-TDP-FR-TRAIN	HPCI PUMP TRAIN FAILS TO RUN GIVEN IT STARTED
		EndState	->CD	
21	1.800E-8	0.9	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
22	1.800E-8	0.9	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
23	1.462E-8	0.73	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS

#	Prob/Freq	Total %	Cut Set	Description
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
	5.000E-1		RCI-XHE-XL-RSTRT	OPERATOR FAILS TO RECOVER RCIC FAILURE TO RESTART
		EndState	->CD	
24	1.462E-8	0.73	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
	5.000E-1		RCI-XHE-XL-RSTRT	OPERATOR FAILS TO RECOVER RCIC FAILURE TO RESTART
		EndState	->CD	
25	1.437E-8	0.72	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.437E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	1.000E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
26	1.437E-8	0.72	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.437E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.000E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
27	1.287E-8	0.64	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	6.433E-8		DCP-BAT-CF-U2BATT	COMMON CAUSE FAILURE OF DIVISION 1-4 BATTERIES
		EndState	->CD	

#	Prob/Freq	Total %	Cut Set	Description
28	1.260E-8	0.63	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
29	1.260E-8	0.63	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
30	1.188E-8	0.59	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	1.200E-4		DCP-BCH-LP-CHRD1	DIVISION IV BATTERY CHARGER 2DD03 FAILS
	1.100E-2		DCP-XHE-XM-BUCHR	OPERATOR FAILS TO ALIGN BACKUP CHARGER
		EndState	->CD	
31	1.171E-8	0.59	INT-MANSD :65-01	
	1.300E+0		IE-MANSD	MANUAL SHUTDOWN
	5.300E-3		OEP-VCF-LP-CLOPT	LOSS OF OFFSITE POWER GIVEN REACTOR TRIP (NO LOCA)
	1.700E-6		RPS-SYS-FC-PSOVS	HCU SCRAM PILOT SOVS FAIL
		EndState	->CD	
32	1.000E-8	0.5	INT-IORV :03-01	
	2.000E-2		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	1.000E-3		OPR-XHE-XM-CSTFIL	OPERATOR FAILS TO REFILL THE CST
	5.000E-4		RHR-XHE-XM-ERROR	OPERATOR FAILS TO START/CONTROL RHR
		EndState	->CD	
33	9.744E-9	0.49	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION

#	Prob/Freq	Total %	Cut Set	Description
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
	5.000E-1		RCI-XHE-XL-RSTRT	OPERATOR FAILS TO RECOVER RCIC FAILURE TO RESTART
		EndState	->CD	
34	9.744E-9	0.49	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
	5.000E-1		RCI-XHE-XL-RSTRT	OPERATOR FAILS TO RECOVER RCIC FAILURE TO RESTART
		EndState	->CD	
35	9.190E-9	0.46	INT-LOCHS :55-6-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	9.190E-5		PPR-SRV-OO-2VLVS	TWO OR MORE SRVS FAIL TO CLOSE
		EndState	->CD	
36	9.000E-9	0.45	INT-LOMFW :61-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
37	9.000E-9	0.45	INT-LOMFW :60-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION

#	Prob/Freq	Total %	Cut Set	Description
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
38	8.400E-9	0.42	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
39	8.400E-9	0.42	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
40	7.383E-9	0.37	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	4.102E-3		RCI-TDP-FR-TRAIN	RCIC PUMP FAILS TO RUN GIVEN THAT IT STARTED
		EndState	->CD	
41	7.383E-9	0.37	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	4.102E-3		RCI-TDP-FR-TRAIN	RCIC PUMP FAILS TO RUN GIVEN THAT IT STARTED
		EndState	->CD	
42	7.308E-9	0.37	INT-LOMFW :60-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI

#	Prob/Freq	Total %	Cut Set	Description
				INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
	5.000E-1		RCI-XHE-XL-RSTRT	OPERATOR FAILS TO RECOVER RCIC FAILURE TO RESTART
		EndState	->CD	
43	7.308E-9	0.37	INT-LOMFW :61-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
	5.000E-1		RCI-XHE-XL-RSTRT	OPERATOR FAILS TO RECOVER RCIC FAILURE TO RESTART
		EndState	->CD	
44	7.185E-9	0.36	INT-LOMFW :61-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.437E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	1.000E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
45	7.185E-9	0.36	INT-LOMFW :60-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	1.437E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.000E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
46	7.000E-9	0.35	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR

#	Prob/Freq	Total %	Cut Set	Description
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
47	7.000E-9	0.35	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
48	6.300E-9	0.31	INT-LOMFW :61-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
49	6.300E-9	0.31	INT-LOMFW :60-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
50	6.276E-9	0.31	INT-ISL-RHR :3-01	
	2.092E-6		IE-ISL-RHR	ISLOCA IE 2-MOV RHR INTERFACE
	3.000E-2		ISL-PSF-RP-RHR	RHR letdown pipe ruptures
	1.000E-1		ZV-ISL-REC-RHR	ISLOCA RUPTURE IS NOT RECOVERABLE
		EndState	->CD	

C.1.17 Peach Bottom HA7 (Case 3) Sequence and Cutset Report

HA7 (Case 3) Top 5 Dominant Sequences

LOACB-E12 62-01	/RPS,/OEP,PCS,/PPR,/SRV,HPI,DEP,/L1-CDF
LOACB-E12 61-01	/RPS,/OEP,PCS,/PPR,/SRV,HPI,/DEP,CDS,LPI,VA,/L1-CDF
LOACB-E12 16-01	/RPS,/OEP,PCS,/PPR,/SRV,/HPI,SPC,/DEP,CRD,/CDS,CND,RHR,PCSR,CVS,LI02,/L1-CDF
LOCHS 52-01	/RPS,/OEP,/PPR,/SRV,HPI,/DEP,CDS,LPI,VA,/L1-CDF
LOCHS 53-01	/RPS, /OEP, /PPR, /SRV, HPI, DEP, /L1 CDF

HA7 (Case 3) Top 50 Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	4.320E-7	20.9	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	4.800E-5		DCP-BAT-LP-BATTD	DIVISION IV BATTERIES FAIL
		EndState	->CD	
2	1.000E-7	4.84	INT-XLOCA :2-01	
	1.000E-7		IE-XLOCA	EXCESSIVE LOCA (VESSEL RUPTURE)
	1.000E+0		RPVRM	RPV RUPTURE MITIGATION
		EndState	->CD	
3	8.640E-8	4.18	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	9.600E-6		ACP-BAC-LP-E42	4160 VAC BUS E42 (20A18) IS UNAVAILABLE
		EndState	->CD	
4	8.640E-8	4.18	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	9.600E-6		DCP-BDC-LP-DIV	DIVISION IV 125VDC BUS FAILS
		EndState	->CD	
5	8.100E-8	3.92	INT-LOACB-E12 :61-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
6	8.100E-8	3.92	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE

#	Prob/Freq	Total %	Cut Set	Description
		EndState	->CD	
7	6.120E-8	2.96	INT-LOACB-E12 :16-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	4.000E-2		CFAILED	CONTAINMENT FAILURE CAUSES LOSS OF ALL INJECTION
	3.400E-1		PCS-XHE-XL-LTLACB	OPERATORS FAIL TO RECOVER THE POWER CONVERSION SYSTEM
	5.000E-4		RHR-XHE-XM-ERROR	OPERATOR FAILS TO START/CONTROL RHR
		EndState	->CD	
8	5.400E-8	2.61	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
9	5.400E-8	2.61	INT-LOACB-E12 :61-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
10	5.000E-8	2.42	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
11	5.000E-8	2.42	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
		EndState	->CD	
12	3.150E-8	1.52	INT-LOACB-E12 :61-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
13	3.150E-8	1.52	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR

#	Prob/Freq	Total %	Cut Set	Description
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
		EndState	->CD	
14	2.672E-8	1.29	INT-IORV :24-01	
	2.000E-2		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	1.600E-2		CRD-MDP-TM-TRNB	CRD TRAIN B IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
		EndState	->CD	
15	2.672E-8	1.29	INT-IORV :24-01	
	2.000E-2		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	1.600E-2		CRD-MDP-TM-TRNA	CRD TRAIN A IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
		EndState	->CD	
16	2.500E-8	1.21	INT-LOMFW :60-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
17	2.500E-8	1.21	INT-LOMFW :61-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
		EndState	->CD	
18	2.440E-8	1.18	INT-LOIAS :71-01	
	1.000E+0		IE-LOIAS	LOSS OF INSTRUMENT AIR
	1.435E-2		IE-IAS-MDC-CF-FRABCD	CCF TO RUN OF IAS MDCs 2A, 2B, 2C AND 2D
	1.700E-6		RPS-SYS-FC-PSOVS	HCU SCRAM PILOT SOVS FAIL
		EndState	->CD	
19	1.846E-8	0.89	INT-LOACB-E12 :61-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	4.102E-3		HCI-TDP-FR-TRAIN	HPCI PUMP TRAIN FAILS TO RUN GIVEN IT STARTED
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
20	1.846E-8	0.89	INT-LOACB-E12 :62-01	

#	Prob/Freq	Total %	Cut Set	Description
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	4.102E-3		HCI-TDP-FR-TRAIN	HPCI PUMP TRAIN FAILS TO RUN GIVEN IT STARTED
		EndState	->CD	
21	1.800E-8	0.87	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
22	1.800E-8	0.87	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
23	1.462E-8	0.71	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
	5.000E-1		RCI-XHE-XL-RSTRT	OPERATOR FAILS TO RECOVER RCIC FAILURE TO RESTART
		EndState	->CD	
24	1.462E-8	0.71	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK

#	Prob/Freq	Total %	Cut Set	Description
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
	5.000E-1		RCI-XHE-XL-RSTRT	OPERATOR FAILS TO RECOVER RCIC FAILURE TO RESTART
		EndState	->CD	
25	1.437E-8	0.7	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.437E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	1.000E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
26	1.437E-8	0.7	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.437E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.000E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
27	1.287E-8	0.62	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	6.433E-8		DCP-BAT-CF-U2BATT	COMMON CAUSE FAILURE OF DIVISION 1-4 BATTERIES
		EndState	->CD	
28	1.260E-8	0.61	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	

#	Prob/Freq	Total %	Cut Set	Description
29	1.260E-8	0.61	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
30	1.188E-8	0.57	INT-LOACB-E12 :62-01	
	9.000E-3		IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
	1.200E-4		DCP-BCH-LP-CHRD1	DIVISION IV BATTERY CHARGER 2DD03 FAILS
	1.100E-2		DCP-XHE-XM-BUCHR	OPERATOR FAILS TO ALIGN BACKUP CHARGER
		EndState	->CD	
31	1.171E-8	0.57	INT-MANSD :65-01	
	1.300E+0		IE-MANSD	MANUAL SHUTDOWN
	5.300E-3		OEP-VCF-LP-CLOPT	LOSS OF OFFSITE POWER GIVEN REACTOR TRIP (NO LOCA)
	1.700E-6		RPS-SYS-FC-PSOVS	HCU SCRAM PILOT SOVS FAIL
		EndState	->CD	
32	1.000E-8	0.48	INT-IORV :03-01	
	2.000E-2		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	1.000E-3		OPR-XHE-XM-CSTFIL	OPERATOR FAILS TO REFILL THE CST
	5.000E-4		RHR-XHE-XM-ERROR	OPERATOR FAILS TO START/CONTROL RHR
		EndState	->CD	
33	9.744E-9	0.47	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
	5.000E-1		RCI-XHE-XL-RSTRT	OPERATOR FAILS TO RECOVER RCIC FAILURE TO RESTART
		EndState	->CD	
34	9.744E-9	0.47	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE

#	Prob/Freq	Total %	Cut Set	Description
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
	5.000E-1		RCI-XHE-XL-RSTRT	OPERATOR FAILS TO RECOVER RCIC FAILURE TO RESTART
		EndState	->CD	
35	9.190E-9	0.44	INT-LOCHS :55-6-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	9.190E-5		PPR-SRV-OO-2VLVS	TWO OR MORE SRVS FAIL TO CLOSE
		EndState	->CD	
36	9.000E-9	0.44	INT-LOMFW :61-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
37	9.000E-9	0.44	INT-LOMFW :60-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
38	8.400E-9	0.41	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
39	8.400E-9	0.41	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK

#	Prob/Freq	Total %	Cut Set	Description
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
40	7.383E-9	0.36	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	4.102E-3		RCI-TDP-FR-TRAIN	RCIC PUMP FAILS TO RUN GIVEN THAT IT STARTED
		EndState	->CD	
41	7.383E-9	0.36	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	4.102E-3		RCI-TDP-FR-TRAIN	RCIC PUMP FAILS TO RUN GIVEN THAT IT STARTED
		EndState	->CD	
42	7.308E-9	0.35	INT-LOMFW :60-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
	5.000E-1		RCI-XHE-XL-RSTRT	OPERATOR FAILS TO RECOVER RCIC FAILURE TO RESTART
		EndState	->CD	
43	7.308E-9	0.35	INT-LOMFW :61-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER

#	Prob/Freq	Total %	Cut Set	Description
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
	5.000E-1		RCI-XHE-XL-RSTRT	OPERATOR FAILS TO RECOVER RCIC FAILURE TO RESTART
		EndState	->CD	
44	7.185E-9	0.35	INT-LOMFW :61-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.437E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	1.000E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
45	7.185E-9	0.35	INT-LOMFW :60-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	1.437E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.000E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
		EndState	->CD	
46	7.000E-9	0.34	INT-LOCHS :53-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
47	7.000E-9	0.34	INT-LOCHS :52-01	
	2.000E-1		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
		EndState	->CD	
48	6.530E-9	0.32	INT-LOOPSC :39-24-1-01	

#	Prob/Freq	Total %	Cut Set	Description
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-CENTERED)
	2.000E-3		CWG-XHE-XL-NR02H	OPERATOR FAILS TO ESTABLISH CONOWINGO TIE LINE SETUP IN 2 HOURS
	7.000E-1		/DEP01	MANUAL REACTOR DEPRESS
	2.118E-2		EPS-DGN-FR-DGB	DIESEL GENERATOR B FAILS TO RUN
	2.118E-2		EPS-DGN-FR-DGC	DIESEL GENERATOR C FAILS TO RUN
		EndState	->CD	
49	6.300E-9	0.3	INT-LOMFW :61-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	
50	6.300E-9	0.3	INT-LOMFW :60-01	
	1.000E-1		IE-LOMFW	LOSS OF FEEDWATER
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
		EndState	->CD	

C.1.18 Peach Bottom MS1 Sequence and Cutset Report

MS1 Top 5 Dominant Sequences

LOOPGR 39-58-6-1-01	/RPS, EPS, /PPR, /SRV, RPSL, /HPI, OPR-02H, DGR-02H, CWG-02H, /DE-OPRGR-04H2, /L1-CDF
LOOPGR 39-30-1-01	/RPS, EPS, /PPR, /SRV, /RPSL, /RCI01, EXT, DEP01, OPR-02H, DGR-02H, CWG-02H, /DE-OPRGR-04H2, /L1-CDF
LOOPGR 39-58-7-3-01	/RPS, EPS, /PPR, /SRV, RPSL, HPI, OPR-RV, OPR-CF, /L1-CDF
LOOPGR 39-24-1-01	/RPS, EPS, /PPR, /SRV, /RPSL, /RCI01, EXT, /DEP01, FWS, OPR-02H, DGR-02H, CWG-02H, /DE-OPRGR-04H2, /L1-CDF
LOOPGR 39-57-1-01	/RPS, EPS, /PPR, /SRV, /RPSL, RCI01, HCI01, OPR-01H, DGR-01H, CWG-01H, /DE-OPRGR-03H1, /L1-CDF

MS1 Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cutset	Description
1	6.923E-5	15.99	LOOPGR :39-58-6-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.000E-3		CWG-XHE-XL-NR02H	OPERATOR FAILS TO ESTABLISH CONOWINGO TIE LINE SETUP IN 2 HOURS
	8.018E-1		EPS-XHE-XL-NR02H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 2 HOURS
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	1.000E-1		RRS-MDP-LK-SEALS	RECIRCULATION PUMP SEALS FAIL
		EndState	->CD	
2	6.230E-5	14.39	LOOPGR :39-30-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		ADS-XHE-XM-MDEPLT	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	2.000E-3		CWG-XHE-XL-NR02H	OPERATOR FAILS TO ESTABLISH CONOWINGO TIE LINE SETUP IN 2 HOURS
	8.018E-1		EPS-XHE-XL-NR02H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 2 HOURS
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	3.000E-1		RCI-XHE-XO-ERRLT	OPERATOR ACTIONS TO EXTEND RCIC OPERATION DURING SBO FAIL
		EndState	->CD	
3	4.999E-5	11.55	LOOPGR :39-58-7-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	5.000E-4		HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
	9.999E-1		OPR-CF	OPR BEFORE CONTAINMENT FAILURE
	9.999E-1		OPR-RV	OPR BEFORE REACTOR VESSEL FAILURE
	1.000E-1		RRS-MDP-LK-SEALS	RECIRCULATION PUMP SEALS FAIL
		EndState	->CD	
4	1.800E-5	4.16	LOOPGR :39-58-7-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	9.999E-1		OPR-CF	OPR BEFORE CONTAINMENT FAILURE
	9.999E-1		OPR-RV	OPR BEFORE REACTOR VESSEL FAILURE

#	Prob/Freq	Total %	Cutset	Description
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	1.000E-1		RRS-MDP-LK-SEALS	RECIRCULATION PUMP SEALS FAIL
		EndState	->CD	
5	1.558E-5	3.6	LOOPGR :39-30-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		ADS-XHE-XM-MDEPLT	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	7.500E-2		CDS-XHE-XM-RFLLT	OPERATOR FAILS TO REFILL THE CONDENSATE STORATE TANK
	2.000E-3		CWG-XHE-XL-NR02H	OPERATOR FAILS TO ESTABLISH CONOWINGO TIE LINE SETUP IN 2 HOURS
	8.018E-1		EPS-XHE-XL-NR02H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 2 HOURS
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
		EndState	->CD	
6	1.461E-5	3.38	LOOPGR :39-58-7-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	9.999E-1		OPR-CF	OPR BEFORE CONTAINMENT FAILURE
	9.999E-1		OPR-RV	OPR BEFORE REACTOR VESSEL FAILURE
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
	5.000E-1		RCI-XHE-XL-RSTRT	OPERATOR FAILS TO RECOVER RCIC FAILURE TO RESTART
	1.000E-1		RRS-MDP-LK-SEALS	RECIRCULATION PUMP SEALS FAIL
		EndState	->CD	
7	1.454E-5	3.36	LOOPGR :39-24-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.000E-3		CWG-XHE-XL-NR02H	OPERATOR FAILS TO ESTABLISH CONOWINGO TIE LINE SETUP IN 2 HOURS
	7.000E-1		/DEP01	MANUAL REACTOR DEPRESS
	8.018E-1		EPS-XHE-XL-NR02H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 2 HOURS
	1.000E-1		FWS-XHE-XM-ERRLT	OPERATOR FAILS TO ALIGN FIREWATER
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	3.000E-1		RCI-XHE-XO-ERRLT	OPERATOR ACTIONS TO EXTEND RCIC OPERATION DURING SBO FAIL

#	Prob/Freq	Total %	Cutset	Description
		EndState	->CD	
8	1.437E-5	3.32	LOOPGR :39-58-7-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.437E-1		HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
	9.999E-1		OPR-CF	OPR BEFORE CONTAINMENT FAILURE
	9.999E-1		OPR-RV	OPR BEFORE REACTOR VESSEL FAILURE
	1.000E-3		RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
	1.000E-1		RRS-MDP-LK-SEALS	RECIRCULATION PUMP SEALS FAIL
		EndState	->CD	
9	1.359E-5	3.14	LOOPGR :39-57-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.000E-2		CWG-XHE-XL-NR01H	OPERATOR FAILS TO ESTABLISH CONOWINGO TIE LINE SETUP IN 1 HOUR
	9.172E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	1.000E-3		OPR-XHE-XM-CSTFIL	OPERATOR FAILS TO REFILL THE CST
		EndState	->CD	
10	1.359E-5	3.14	LOOPGR :39-57-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.000E-2		CWG-XHE-XL-NR01H	OPERATOR FAILS TO ESTABLISH CONOWINGO TIE LINE SETUP IN 1 HOUR
	9.172E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	1.000E-3		OPR-XHE-XM-CSTFIL	OPERATOR FAILS TO REFILL THE CST
		EndState	->CD	
11	1.359E-5	3.14	LOOPGR :39-57-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.000E-2		CWG-XHE-XL-NR01H	OPERATOR FAILS TO ESTABLISH CONOWINGO TIE LINE SETUP IN 1 HOUR
	9.172E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	1.000E-3		OPR-XHE-XM-CSTFIL	OPERATOR FAILS TO REFILL THE CST
		EndState	->CD	

#	Prob/Freq	Total %	Cutset	Description
12	1.260E-5	2.91	LOOPGR :39-58-7-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	9.999E-1		OPR-CF	OPR BEFORE CONTAINMENT FAILURE
	9.999E-1		OPR-RV	OPR BEFORE REACTOR VESSEL FAILURE
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
	1.000E-1		RRS-MDP-LK-SEALS	RECIRCULATION PUMP SEALS FAIL
		EndState	->CD	
13	9.742E-6	2.25	LOOPGR :39-58-7-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	9.999E-1		OPR-CF	OPR BEFORE CONTAINMENT FAILURE
	9.999E-1		OPR-RV	OPR BEFORE REACTOR VESSEL FAILURE
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
	5.000E-1		RCI-XHE-XL-RSTRT	OPERATOR FAILS TO RECOVER RCIC FAILURE TO RESTART
	1.000E-1		RRS-MDP-LK-SEALS	RECIRCULATION PUMP SEALS FAIL
		EndState	->CD	
14	8.398E-6	1.94	LOOPGR :39-58-7-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	9.999E-1		OPR-CF	OPR BEFORE CONTAINMENT FAILURE
	9.999E-1		OPR-RV	OPR BEFORE REACTOR VESSEL FAILURE
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START
	1.000E-1		RRS-MDP-LK-SEALS	RECIRCULATION PUMP SEALS FAIL
		EndState	->CD	
15	7.381E-6	1.71	LOOPGR :39-58-7-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.500E-1		HCI-MOV-CC-IVFRO	HPCI INJECTION VALVE FAILS TO REOPEN
	1.500E-1		HCI-MULTIPLE-INJECT	PROBABILITY OF MULTIPLE HPCI INJECTIONS
	8.000E-1		HCI-XHE-XL-INJEC	OPERATOR FAILS TO RECOVER HPCI INJECTION VALVE
	9.999E-1		OPR-CF	OPR BEFORE CONTAINMENT FAILURE

#	Prob/Freq	Total %	Cutset	Description
	9.999E-1		OPR-RV	OPR BEFORE REACTOR VESSEL FAILURE
	4.102E-3		RCI-TDP-FR-TRAIN	RCIC PUMP FAILS TO RUN GIVEN THAT IT STARTED
	1.000E-1		RRS-MDP-LK-SEALS	RECIRCULATION PUMP SEALS FAIL
		EndState	->CD	
16	6.999E-6	1.62	LOOPGR :39-58-7-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	9.999E-1		OPR-CF	OPR BEFORE CONTAINMENT FAILURE
	9.999E-1		OPR-RV	OPR BEFORE REACTOR VESSEL FAILURE
	1.000E-2		RCI-TDP-TM-TRAIN	RCIC PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	1.000E-1		RRS-MDP-LK-SEALS	RECIRCULATION PUMP SEALS FAIL
		EndState	->CD	
17	5.683E-6	1.31	LOOPGR :39-58-7-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	9.999E-1		OPR-CF	OPR BEFORE CONTAINMENT FAILURE
	9.999E-1		OPR-RV	OPR BEFORE REACTOR VESSEL FAILURE
	2.030E-1		RCI-RESTART	RESTART OF RCIC IS REQUIRED
	8.000E-2		RCI-TDP-FS-RSTRT	RCIC FAILS TO RESTART GIVEN START AND SHORT-TERM RUN
	5.000E-1		RCI-XHE-XL-RSTRT	OPERATOR FAILS TO RECOVER RCIC FAILURE TO RESTART
	1.000E-1		RRS-MDP-LK-SEALS	RECIRCULATION PUMP SEALS FAIL
		EndState	->CD	
18	4.921E-6	1.14	LOOPGR :39-58-7-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.200E-2		HCI-TDP-TM-TRAIN	HPCI PUMP TRAIN IS UNAVAILABLE BECAUSE OF MAINTENANCE
	9.999E-1		OPR-CF	OPR BEFORE CONTAINMENT FAILURE
	9.999E-1		OPR-RV	OPR BEFORE REACTOR VESSEL FAILURE
	4.102E-3		RCI-TDP-FR-TRAIN	RCIC PUMP FAILS TO RUN GIVEN THAT IT STARTED
	1.000E-1		RRS-MDP-LK-SEALS	RECIRCULATION PUMP SEALS FAIL
		EndState	->CD	
19	4.899E-6	1.13	LOOPGR :39-58-7-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	7.000E-3		HCI-TDP-FS-TRAIN	HPCI PUMP FAILS TO START
	9.999E-1		OPR-CF	OPR BEFORE CONTAINMENT FAILURE
	9.999E-1		OPR-RV	OPR BEFORE REACTOR VESSEL FAILURE
	7.000E-3		RCI-TDP-FS-TRAIN	RCIC PUMP FAILS TO START

#	Prob/Freq	Total %	Cutset	Description
	1.000E-1		RRS-MDP-LK-SEALS	RECIRCULATION PUMP SEALS FAIL
		EndState	->CD	

C.1.19 Peach Bottom MS4 Sequence and Cutset Report

MS4 Dominant Sequence

LOMFW 61-01	/RPS, /OEP, /PPR, /SRV, HPI, DEP, /L1-CDF

MS4 Cutset

#	Prob/Freq	Total %	Cutset	Description
1	1.000E+0	100	LOMFW :61-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	1.000E+0		<TRUE>	SYSTEM GENERATED FAILURE EVENT
		EndState	->CD	

C.1.20 Peach Bottom MS3 (Case 1) Sequence and Cutset Report

MS3 (Case 1) op 90 Percent Dominant Sequences

IORV 40-10-01	RPS, /PPR1, RRS, /L1-CDF
IORV 40-05-01	RPS, /PPR1, /RRS, /PCS, SLC, /L1-CDF
IORV 40-04-01	RPS, /PPR1, /RRS, /PCS, /SLC, NX, /L1-CDF
IORV 40-07-01	RPS, /PPR1, /RRS, PCS, /SLC, /NX1, TAF, /L1-CDF
IORV 40-09-01	RPS, /PPR1, /RRS, PCS, SLC, /L1-CDF

MS3 (Case 1) Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cutset	Description
1	2.500E-3	27.87	IORV :40-10-01	
	1.000E+0		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	2.500E-3		RRS-CRB-CC-PUMP2	RECIRC PUMP 2 FIELD BREAKER FAILS TO OPEN
		EndState	->CD	
2	2.500E-3	27.87	IORV :40-10-01	
	1.000E+0		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	2.500E-3		RRS-CRB-CC-PUMP1	RECIRC PUMP 1 FIELD BREAKER FAILS TO OPEN
		EndState	->CD	
3	2.000E-3	22.3	IORV :40-05-01	
	1.000E+0		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	2.000E-3		SLC-XHE-XM-ERROR	OPERATOR FAILS TO START/CONTROL SLC
		EndState	->CD	
4	1.000E-3	11.15	IORV :40-04-01	
	1.000E+0		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	1.000E-3		OPR-XHE-XM-INHIB	OPERATOR FAILS TO INHIBIT ADS
		EndState	->CD	
5	6.680E-4	7.45	IORV :40-07-01	
	1.000E+0		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	4.000E-3		OPR-XHE-CTRL-TAF	OPERATOR FAILS TO CONTROL LEVEL TO TAF

#	Prob/Freq	Total %	Cutset	Description
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
		EndState	->CD	
6	3.340E-4	3.72	IORV :40-09-01	
	1.000E+0		IE-IORV	INADVERTENT OPEN RELIEF VALVE (IORV)
	1.670E-1		PCS-SYS-FC-SLOCA	PCS IS UNAVAILABLE DURING IORV OR SLOCA
	2.000E-3		SLC-XHE-XM-ERROR	OPERATOR FAILS TO START/CONTROL SLC
		EndState	->CD	

C.1.21 Peach Bottom MS3 (Case 2) Sequence and Cutset Report

MS3 (Case 2) Top 90 Percent Dominant Sequences

TRANS 67-10-01	RPS, /PPR1, RRS, /L1-CDF
TRANS 67-05-01	RPS, /PPR1, /RRS, /PCS, SLC, /L1-CDF
TRANS 67-04-01	RPS, /PPR1, /RRS, /PCS, /SLC, NX, /L1-CDF

MS3 (Case 2) Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cutset	Description
1	2.500E-3	31.34	TRANS :67-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.500E-3		RRS-CRB-CC-PUMP2	RECIRC PUMP 2 FIELD BREAKER FAILS TO OPEN
		EndState	->CD	
2	2.500E-3	31.34	TRANS :67-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.500E-3		RRS-CRB-CC-PUMP1	RECIRC PUMP 1 FIELD BREAKER FAILS TO OPEN
		EndState	->CD	
3	2.000E-3	25.07	TRANS :67-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.000E-3		SLC-XHE-XM-ERROR	OPERATOR FAILS TO START/CONTROL SLC
		EndState	->CD	
4	1.000E-3	12.54	TRANS :67-04-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.000E-3		OPR-XHE-XM-INHIB	OPERATOR FAILS TO INHIBIT ADS
		EndState	->CD	

C.1.22 Peach Bottom MS5 Sequence and Cutset Report

MS5 Top 90 Percent Dominant Sequences

LOCHS 43-01	/RPS, /OEP, /PPR, /SRV, HPI, /DEP, CDS, /LPI, RHR, PCSR, /CVS, LI06, /L1-CDF
LOCHS 53-01	/RPS, /OEP, /PPR, /SRV, HPI, DEP, /L1-CDF
LOCHS 52-01	/RPS, /OEP, /PPR, /SRV, HPI, /DEP, CDS, LPI, VA, /L1-CDF
LOCHS 49-01	/RPS, /OEP, /PPR, /SRV, HPI, /DEP, CDS, LPI, /VA, RHR, PCSR, /CVS, LI05CV, /L1-CDF

MS5 Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cutset	Description
1	1.000E-3	21.36	LOCHS :43-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.000E-3		HSW-MOV-CC-F174	HPSW/RHR CROSS-TIE VAVLE FAILS TO OPEN
		EndState	->CD	
2	1.000E-3	21.36	LOCHS :43-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.000E-3		HSW-MOV-CC-F176	HPSW/RHR CROSS-TIE VAVLE FAILS TO OPEN
		EndState	->CD	
3	1.000E-3	21.36	LOCHS :43-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.000E-3		LCI-MOV-CC-F025B	INJECTION VALVE 10-25B FAILS TO OPEN
		EndState	->CD	
4	5.000E-4	10.68	LOCHS :53-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
		EndState	->CD	
5	5.000E-4	10.68	LOCHS :52-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
		EndState	->CD	
6	5.000E-4	10.68	LOCHS :43-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-4		OPR-XHE-XM-LI06	OPERATOR FAILS TO START/CONTROL LATE INJECTION
		EndState	->CD	
7	1.900E-4	4.06	LOCHS :49-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.900E-4		ESF-ASL-MC-LEVEL	ECCS LEVEL SENSORS MISCALIBRATED
		EndState	->CD	

C.1.23 Peach Bottom MS6 (Case 1) Sequence and Cutset Report

MS6 (Case 1) Dominant Sequence

MANSD 62-01	/RPS,/OEP,PCS,HPI,DEP,/L1-CDF

MS6 (Case 1) Cutset

#	Prob/Freq	Total %	Cutset	Description
1	1.000E+0	100	INT-MANSD :62-01	
	1.000E+0		IE-MANSD	MANUAL SHUTDOWN
	1.000E+0		<TRUE>	SYSTEM GENERATED FAILURE EVENT
		EndState	->CD	

C.1.24 Peach Bottom MS6 (Case 2) Sequence and Cutset Report

MS6 (Case 2) Dominant Sequence

MANSD 62-01	/RPS,/OEP,PCS,HPI,DEP,/L1-CDF

MS6 (Case 2) Cutset

#	Prob/Freq	Total %	Cutset	Description
1	1.000E+0	100	INT-MANSD :62-01	
	1.000E+0		IE-MANSD	MANUAL SHUTDOWN
	1.000E+0		<TRUE>	SYSTEM GENERATED FAILURE EVENT
		EndState	->CD	

C.1.25 Peach Bottom MS6 (Case 3) Sequence and Cutset Report

MS6 (Case 3) Dominant Sequence

MANSD 62-01	/RPS,/OEP,PCS,HPI,DEP,/L1-CDF

MS6 (Case 3) Cutset

#	Prob/Freq	Total %	Cutset	Description
1	1.000E+0	100	INT-MANSD :62-01	
	1.000E+0		IE-MANSD	MANUAL SHUTDOWN
	1.000E+0		<TRUE>	SYSTEM GENERATED FAILURE EVENT
		EndState	->CD	

C.1.26 Peach Bottom MG1 Sequence and Cutset Report

MG1 Top 90 Percent Dominant Sequences

LOOPGR 39-58-6-1-01	/RPS, EPS, /PPR, /SRV, RPSL, /HPI, OPR-02H, DGR-02H, CWG-02H, /DE-OPRGR-04H2, /L1-CDF
LOOPGR 39-30-1-01	/RPS, EPS, /PPR, /SRV, /RPSL, /RCI01, EXT, DEP01, OPR-02H, DGR-02H, CWG-02H, /DE-OPRGR-04H2, /L1-CDF

MG1 Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cutset	Description
1	1.000E-1	50.14	LOOPGR :39-58-6-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.000E-1		RRS-MDP-LK-SEALS	RECIRCULATION PUMP SEALS FAIL
		EndState	->CD	
2	9.000E-2	45.13	LOOPGR :39-30-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		ADS-XHE-XM-MDEPLT	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	3.000E-1		RCI-XHE-XO-ERRLT	OPERATOR ACTIONS TO EXTEND RCIC OPERATION DURING SBO FAIL

#	Prob/Freq	Total %	Cutset	Description
		EndState	->CD	
3	2.250E-2	11.28	LOOPGR :39-30-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		ADS-XHE-XM-MDEPLT	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
	7.500E-2		CDS-XHE-XM-RFLLT	OPERATOR FAILS TO REFILL THE CONDENSATE STORATE TANK
		EndState	->CD	

C.1.27 Peach Bottom MG3 Sequence and Cutset Report

MG3 Dominant Sequence

LOMFW 66-11-01	RPS, /OEP, PPR1, /L1-CDF

MG3 Cutset

#	Prob/Freq	Total %	Cutset	Description
1	1.000E+0	100	LOMFW :66-11-01	
	1.000E+0		IE-LOMFW	LOSS OF FEEDWATER
	1.000E+0		<TRUE>	SYSTEM GENERATED FAILURE EVENT
		EndState	->CD	

C.2 Surry Sequence and Cutset Reports

C.2.1 Surry SU1.1 Cutset Sequence and Report

SU1.1 Dominant Sequences

LOOPGR 16	/RPS-L, /EPS, AFW-L, FAB-L
LOOPGR 02-06	/RPS-L, /EPS, /AFW-L, /PORV-L, LOSC-L, /RSD, /BP1, BP2, OPR-02H, HPI-L

SU1.1 Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cutset	Description
1	3.360E-6	31.71	LOOPGR :16	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
2	4.800E-7	4.53	LOOPGR :16	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.000E-4		AFW-SYS-LK-SGCKVS	STEAM LEAKAGE THRU CKVS 27.58 & 89 (PSA)
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT

#	Prob/Freq	Total %	Cutset	Description
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
3	3.584E-7	3.38	LOOPGR :02-06	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.118E-2		EPS-DGN-FR-DG1	DIESEL GENERATOR 1 FAILS TO RUN
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	1.960E-1		OEP-XHE-XX-NR02HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (2HR-GR AVAIL)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	5.000E-1		SWS-101A-OPEN	PROBABILITY OF 1-SW-MOV-101A ALIGNED OPEN
	2.000E-3		SWS-XHE-XM-ISOL	FAILURE TO VERIFY/ISOLATE SWS/CW INLET MOVs (AP-12, STEP 11)
		EndState	->CD	
4	3.584E-7	3.38	LOOPGR :02-06	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.118E-2		EPS-DGN-FR-DG1	DIESEL GENERATOR 1 FAILS TO RUN
	1.000E-3		MCW-MOV-OO-100C	CONDENSER OUTLET 1-CW-MOV-100CD FAILS OPEN
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	1.960E-1		OEP-XHE-XX-NR02HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (2HR-GR AVAIL)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
5	3.584E-7	3.38	LOOPGR :02-06	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.118E-2		EPS-DGN-FR-DG1	DIESEL GENERATOR 1 FAILS TO RUN
	1.000E-3		MCW-MOV-OO-100A	CONDENSER OUTLET 1-CW-MOV-100A FAILS OPEN
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	1.960E-1		OEP-XHE-XX-NR02HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (2HR-GR AVAIL)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
6	3.584E-7	3.38	LOOPGR :02-06	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.118E-2		EPS-DGN-FR-DG1	DIESEL GENERATOR 1 FAILS TO RUN
	1.000E-3		MCW-MOV-OO-106B	CONDENSER INLET MOV1-CW-MOV-106B FAILS OPEN
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	1.960E-1		OEP-XHE-XX-NR02HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (2HR-GR AVAIL)

#	Prob/Freq	Total %	Cutset	Description
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
7	3.584E-7	3.38	LOOPGR :02-06	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.118E-2		EPS-DGN-FR-DG1	DIESEL GENERATOR 1 FAILS TO RUN
	1.000E-3		MCW-MOV-OO-106D	CONDENSER INLET MOV1-CW-MOV-106D FAILS OPEN
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	1.960E-1		OEP-XHE-XX-NR02HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (2HR-GR AVAIL)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
8	3.108E-7	2.93	LOOPGR :02-06	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.500E-2		CPC-MDP-TM-SWP10A	CPC SWS MDP 1-SW-P-10A UNAVAILABLE DUE TO TEST & MAINT
	1.200E-2		EPS-DGN-TM-DG2	DIESEL GENERATOR 2 UNAVAILABLE DUE TO T & M
	2.000E-2		EPS-XHE-XM-SBO1J	OPERATOR FAILS TO ALIGN SBO DIESEL TO BUS 1J
	1.000E+0		IAS-SYS-FC-CONDPOLISH	INSUFFICIENT AIR FROM CONDENSATE POLISHING CMPRESSRS
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
9	1.865E-7	1.76	LOOPGR :02-06	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.500E-2		CPC-MDP-TM-SWP10A	CPC SWS MDP 1-SW-P-10A UNAVAILABLE DUE TO TEST & MAINT
	1.200E-2		EPS-DGN-TM-DG2	DIESEL GENERATOR 2 UNAVAILABLE DUE TO T & M
	1.200E-2		EPS-DGN-TM-SBO	SBO DIESEL GENERATOR UNAVAILABLE DUE TO T & M
	1.000E+0		IAS-SYS-FC-CONDPOLISH	INSUFFICIENT AIR FROM CONDENSATE POLISHING CMPRESSRS
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
10	1.792E-7	1.69	LOOPGR :02-06	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.118E-2		EPS-DGN-FR-DG1	DIESEL GENERATOR 1 FAILS TO RUN
	5.000E-4		MCW-XHE-XM-LVL	LEVEL INSTRUMENTS 1-CW-LS-102 / 103 CCF MISCALIBRATED (PSA)

#	Prob/Freq	Total %	Cutset	Description
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	1.960E-1		OEP-XHE-XX-NR02HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (2HR-GR AVAIL)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
11	1.295E-7	1.22	LOOPGR :02-06	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.500E-2		CPC-MDP-TM-SWP10A	CPC SWS MDP 1-SW-P-10A UNAVAILABLE DUE TO TEST & MAINT
	5.000E-3		EPS-DGN-FS-DG2	DIESEL GENERATOR 2 FAILS TO START
	2.000E-2		EPS-XHE-XM-SBO1J	OPERATOR FAILS TO ALIGN SBO DIESEL TO BUS 1J
	1.000E+0		IAS-SYS-FC-CONDPOLISH	INSUFFICIENT AIR FROM CONDENSATE POLISHING CMPRESSRS
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
12	1.075E-7	1.01	LOOPGR :02-06	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.500E-2		CPC-MDP-TM-SWP10A	CPC SWS MDP 1-SW-P-10A UNAVAILABLE DUE TO TEST & MAINT
	2.118E-2		EPS-DGN-FR-DG3	DIESEL GENERATOR 3 FAILS TO RUN
	2.000E-2		EPS-XHE-XM-SBO1J	OPERATOR FAILS TO ALIGN SBO DIESEL TO BUS 1J
	1.000E+0		IAS-SYS-FC-CONDPOLISH	INSUFFICIENT AIR FROM CONDENSATE POLISHING CMPRESSRS
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	1.960E-1		OEP-XHE-XX-NR02HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (2HR-GR AVAIL)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
13	1.075E-7	1.01	LOOPGR :02-06	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.500E-2		CPC-MDP-TM-SWP10A	CPC SWS MDP 1-SW-P-10A UNAVAILABLE DUE TO TEST & MAINT
	2.118E-2		EPS-DGN-FR-DG2	DIESEL GENERATOR 2 FAILS TO RUN
	2.000E-2		EPS-XHE-XM-SBO1J	OPERATOR FAILS TO ALIGN SBO DIESEL TO BUS 1J
	1.000E+0		IAS-SYS-FC-CONDPOLISH	INSUFFICIENT AIR FROM CONDENSATE POLISHING CMPRESSRS
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	1.960E-1		OEP-XHE-XX-NR02HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (2HR-GR AVAIL)

#	Prob/Freq	Total %	Cutset	Description
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	

C.2.2 Surry SU4.1 (Case 1) Sequence and Cutset Report

SU4.1 (Case 1) Top 5 Dominant Sequences

LOMFW 16	/RPS, AFW, FAB
LOOPGR 16	/RPS-L, /EPS, AFW-L, FAB-L
TRANS 27	/RPS, AFW, MFW, FAB
LOOPSC 16	/RPS-L, /EPS, AFW-L, FAB-L
LOIAS 27	/RPS, AFW, MFW, FAB

SU4.1 (Case 1) Top 50 Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	3.360E-7	11.89	LOMFW :16	
	1.000E-1		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
2	2.092E-7	7.4	ISL-RHR :3	
	2.092E-6		IE-ISL-RHR	RHR pipe ruptures
	1.000E+0		ISL-PSF-RP-RHR	RHR letdown pipe ruptures
	1.000E-1		ZV-ISL-REC-RHR	ISLOCA RUPTURE IS NOT RECOVERABLE
		EndState	->CD	
3	1.142E-7	4.04	SGTR :12	
	4.000E-3		IE-SGTR	STEAM GENERATOR TUBE RUPTURE
	3.000E-1		HPI-XHE-XM-RWSTR1	OPERATOR FAILS TO REFILL THE RWST
	2.380E-2		OPR-XHE-XE-SGTR	OPERATOR FAILS TO DIAGNOSE SGTR AND 1-E-3 SGTR STEP 3 ISOLATE RUPTURED SG
	4.000E-3		OPR-XHE-XM-ECA312	OPERATOR FAILS TO IMPLEMENT SGTR PROCEDURE ECA 3.1/3.2
		EndState	->CD	
4	1.134E-7	4.01	LOACB-1J :28	
	4.500E-3		IE-LOACB-1J	LOSS OF 4160 VAC BUS 1J
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	1.000E+0		DCP-BAT-LP-1BATB4HR	BATTERY 1B 1-EPD-B-1B FAILURE AT 4 HOURS

#	Prob/Freq	Total %	Cut Set	Description
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
		EndState	->CD	
5	1.000E-7	3.54	XLOCA :2	
	1.000E-7		IE-XLOCA	EXCESSIVE LOCA INITIATING EVENT
	1.000E+0		RPVRM	REACTOR VESSEL RUPTURE
		EndState	->CD	
6	9.600E-8	3.4	SGTR :09	
	4.000E-3		IE-SGTR	STEAM GENERATOR TUBE RUPTURE
	3.000E-1		HPI-XHE-XM-RWSTR1	OPERATOR FAILS TO REFILL THE RWST
	2.000E-2		OPR-XHE-XM-DEPRCS	OPERATOR FAILS TO COOLDOWN AND DEPRESSURIZE REACTOR
	4.000E-3		OPR-XHE-XM-ECA312	OPERATOR FAILS TO IMPLEMENT SGTR PROCEDURE ECA 3.1/3.2
		EndState	->CD	
7	6.250E-8	2.21	LOOPGR :16	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
8	6.025E-8	2.13	LOOPGR :02-06	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	5.000E-4		MCW-XHE-XM-LVL	LEVEL INSTRUMENTS 1-CW-LS-102 / 103 CCF MISCALIBRATED (PSA)
	3.560E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	9.100E-2		SWS-XHE-XM-MKUP	OPERATOR FAILS TO START THE BACKUP SWS PUMPS
		EndState	->CD	
9	6.020E-8	2.13	ISL-RHR :4	
	2.092E-6		IE-ISL-RHR	RHR pipe ruptures
	1.000E+0		ISL-PSF-RP-RHR	RHR letdown pipe ruptures
	2.878E-2		ISL-XHE-XD-DIAG	OPERATORS FAIL TO DIAGNOSE ISLOCA
		EndState	->CD	
10	4.800E-8	1.7	LOMFW :16	
	1.000E-1		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.000E-4		AFW-SYS-LK-SGCKVS	STEAM LEAKAGE THRU CKVS 27.58 & 89 (PSA)

#	Prob/Freq	Total %	Cut Set	Description
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
11	3.494E-8	1.24	LOOPSC :16	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
12	3.360E-8	1.19	LOIAS :27	
	1.000E-2		IE-LOIAS	LOSS OF INSTRUMENT AIR
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
	1.000E+0		IAS-SYS-FC-CONDPOLISH	INSUFFICIENT AIR FROM CONDENSATE POLISHING CMPRESSRS
		EndState	->CD	
13	3.240E-8	1.15	SLOCA :03	
	6.000E-4		IE-SLOCA	SMALL LOCA
	5.400E-5		CSR-XHE-XR-FLANGE	TEST FLANGES LEFT BLANKED AFTER 1-PT-17.6 (VALUE FROM PSA)
		EndState	->CD	
14	3.000E-8	1.06	SLOCA :03	
	6.000E-4		IE-SLOCA	SMALL LOCA
	5.000E-5		LPR-SMP-PG-SL	CONTAINMENT RECIRCULATION SUMP PLUGS - Small LOCA
		EndState	->CD	
15	2.856E-8	1.01	SGTR :12	
	4.000E-3		IE-SGTR	STEAM GENERATOR TUBE RUPTURE
	1.000E-3		AFW-XHE-XM-CSTRFL	OPERATOR FAILS TO REFILL THE CST (ALT AFW SUCTN)
	3.000E-1		HPI-XHE-XM-RWSTR1	OPERATOR FAILS TO REFILL THE RWST
	2.380E-2		OPR-XHE-XE-SGTR	OPERATOR FAILS TO DIAGNOSE SGTR AND 1-E-3 SGTR STEP 3 ISOLATE RUPTURED SG
		EndState	->CD	
16	2.576E-8	0.91	TRANS :28-20	
	8.000E-1		IE-TRANS	GENERAL PLANT TRANSIENT

#	Prob/Freq	Total %	Cut Set	Description
	2.000E-2		CVC-XHE-XM-BOR	OPERATOR FAILS TO INITIATE EMERGENCY BORATION
	1.610E-6		RPS-BME-CF-RTBAB	CCF OF RTB-A AND RTB-B (MECHANICAL)
		EndState	->CD	
17	2.400E-8	0.85	SGTR :09	
	4.000E-3		IE-SGTR	STEAM GENERATOR TUBE RUPTURE
	1.000E-3		AFW-XHE-XM-CSTRFL	OPERATOR FAILS TO REFILL THE CST (ALT AFW SUCTN)
	3.000E-1		HPI-XHE-XM-RWSTR1	OPERATOR FAILS TO REFILL THE RWST
	2.000E-2		OPR-XHE-XM-DEPRCS	OPERATOR FAILS TO COOLDOWN AND DEPRESSURIZE REACTOR
		EndState	->CD	
18	2.286E-8	0.81	LOOPWR :02-06	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	5.000E-4		MCW-XHE-XM-LVL	LEVEL INSTRUMENTS 1-CW-LS-102 / 103 CCF MISCALIBRATED (PSA)
	5.202E-1		OEP-XHE-XL-NR02HWR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (WEATHER-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	9.100E-2		SWS-XHE-XM-MKUP	OPERATOR FAILS TO START THE BACKUP SWS PUMPS
		EndState	->CD	
19	2.149E-8	0.76	TRANS :28-20	
	8.000E-1		IE-TRANS	GENERAL PLANT TRANSIENT
	2.000E-2		CVC-XHE-XM-BOR	OPERATOR FAILS TO INITIATE EMERGENCY BORATION
	9.950E-1		/RPS-CCP-TM-CHA	CH-A IN T&M
	2.700E-6		RPS-TXX-CF-6OF8	CCF 6 BISTABLES IN 3 OF 4 CHANNELS
	5.000E-1		RPS-XHE-XE-NSGNL	OPERATOR FAILS TO RESPOND WITH NO RPS SIGNAL PRESENT
		EndState	->CD	
20	2.009E-8	0.71	ISL-LPI :3	
	2.009E-6		IE-ISL-LPI	ISLOCA IE 2-CKV LPI interface
	1.000E-1		ISL-PSF-RP-LPI	LP injection pipe ruptures
	1.000E-1		ZV-ISL-REC-LPI	ISLOCA rupture is not recoverable
		EndState	->CD	
21	1.936E-8	0.68	TRANS :28-20	
	8.000E-1		IE-TRANS	GENERAL PLANT TRANSIENT
	2.000E-2		CVC-XHE-XM-BOR	OPERATOR FAILS TO INITIATE EMERGENCY BORATION
	1.210E-6		RPS-ROD-CF-RCCAS	CCF 10 OR MORE RCCAS FAIL TO DROP
		EndState	->CD	

#	Prob/Freq	Total %	Cut Set	Description
22	1.875E-8	0.66	SLOCA :06	
	6.000E-4		IE-SLOCA	SMALL LOCA
	1.250E-4		CSR-XHE-XM-MISCALIB	RWST LEVEL CHANNELS 1-CS-LC-100A/B/C/D MISCALIBRATED
	2.500E-1		HPR-XHE-XM-RECIRC	1-ES-1.3 TRANSFER TO COLD LEG RECIRCULATION
		EndState	->CD	
23	1.838E-8	0.65	LOOPSC :02-06	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	5.000E-4		MCW-XHE-XM-LVL	LEVEL INSTRUMENTS 1-CW-LS-102 / 103 CCF MISCALIBRATED (PSA)
	1.942E-1		OEP-XHE-XL-NR02HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (SWITCHYARD)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	9.100E-2		SWS-XHE-XM-MKUP	OPERATOR FAILS TO START THE BACKUP SWS PUMPS
		EndState	->CD	
24	1.803E-8	0.64	TRANS :28-22	
	8.000E-1		IE-TRANS	GENERAL PLANT TRANSIENT
	1.400E-2		RCS-PHN-MODPOOR	MODERATOR TEMP COEFFICIENT NOT ENOUGH NEGATIVE
	1.610E-6		RPS-BME-CF-RTBAB	CCF OF RTB-A AND RTB-B (MECHANICAL)
		EndState	->CD	
25	1.623E-8	0.57	LOOPWR :16	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
26	1.620E-8	0.57	LOACB-1J :28	
	4.500E-3		IE-LOACB-1J	LOSS OF 4160 VAC BUS 1J
	1.000E-4		AFW-SYS-LK-SGCKVS	STEAM LEAKAGE THRU CKVS 27.58 & 89 (PSA)
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	1.000E+0		DCP-BAT-LP-1BATB4HR	BATTERY 1B 1-EPD-B-1B FAILURE AT 4 HOURS
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
		EndState	->CD	
27	1.610E-8	0.57	LOIAS :28	
	1.000E-2		IE-LOIAS	LOSS OF INSTRUMENT AIR

#	Prob/Freq	Total %	Cut Set	Description
	1.610E-6		RPS-BME-CF-RTBAB	CCF OF RTB-A AND RTB-B (MECHANICAL)
		EndState	->CD	
28	1.589E-8	0.56	LOOPGR :02-06	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.200E-2		EPS-DGN-TM-DG1	DIESEL GENERATOR 1 UNAVAILABLE DUE TO T & M
	3.560E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	5.000E-1		SWS-101A-OPEN	PROBABILITY OF 1-SW-MOV-101A ALIGNED OPEN
	2.000E-3		SWS-XHE-XM-ISOL	FAILURE TO VERIFY/ISOLATE SWS/CW INLET MOVs (AP-12, STEP 11)
		EndState	->CD	
29	1.589E-8	0.56	LOOPGR :02-06	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.200E-2		EPS-DGN-TM-DG1	DIESEL GENERATOR 1 UNAVAILABLE DUE TO T & M
	1.000E-3		MCW-MOV-OO-106D	CONDENSER INLET MOV1-CW-MOV-106D FAILS OPEN
	3.560E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
30	1.589E-8	0.56	LOOPGR :02-06	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.200E-2		EPS-DGN-TM-DG1	DIESEL GENERATOR 1 UNAVAILABLE DUE TO T & M
	1.000E-3		MCW-MOV-OO-100C	CONDENSER OUTLET 1-CW-MOV-100CD FAILS OPEN
	3.560E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
31	1.589E-8	0.56	LOOPGR :02-06	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.200E-2		EPS-DGN-TM-DG1	DIESEL GENERATOR 1 UNAVAILABLE DUE TO T & M

#	Prob/Freq	Total %	Cut Set	Description
	1.000E-3		MCW-MOV-OO-106B	CONDENSER INLET MOV1-CW-MOV-106B FAILS OPEN
	3.560E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
32	1.589E-8	0.56	LOOPGR :02-06	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.200E-2		EPS-DGN-TM-DG1	DIESEL GENERATOR 1 UNAVAILABLE DUE TO T & M
	1.000E-3		MCW-MOV-OO-100A	CONDENSER OUTLET 1-CW-MOV-100A FAILS OPEN
	3.560E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
33	1.512E-8	0.53	LOACB-1J :28	
	4.500E-3		IE-LOACB-1J	LOSS OF 4160 VAC BUS 1J
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
34	1.504E-8	0.53	TRANS :28-22	
	8.000E-1		IE-TRANS	GENERAL PLANT TRANSIENT
	1.400E-2		RCS-PHN-MODPOOR	MODERATOR TEMP COEFFICIENT NOT ENOUGH NEGATIVE
	9.950E-1		/RPS-CCP-TM-CHA	CH-A IN T&M
	2.700E-6		RPS-TXX-CF-6OF8	CCF 6 BISTABLES IN 3 OF 4 CHANNELS
	5.000E-1		RPS-XHE-XE-NSGNL	OPERATOR FAILS TO RESPOND WITH NO RPS SIGNAL PRESENT
		EndState	->CD	
35	1.457E-8	0.52	TRANS :28-20	
	8.000E-1		IE-TRANS	GENERAL PLANT TRANSIENT
	2.000E-2		CVC-XHE-XM-BOR	OPERATOR FAILS TO INITIATE EMERGENCY BORATION
	9.950E-1		/RPS-CCP-TM-CHA	CH-A IN T&M
	1.830E-6		RPS-CCX-CF-6OF8	CCF 6 ANALOG PROCESS LOGIC MODULES IN 3 OF 4 CHANNELS
	5.000E-1		RPS-XHE-XE-NSGNL	OPERATOR FAILS TO RESPOND WITH NO RPS SIGNAL PRESENT
		EndState	->CD	

#	Prob/Freq	Total %	Cut Set	Description
36	1.427E-8	0.5	LOOPGR :02-06	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.000E+0		DCP-BAT-LP-1BATA4HR	BATTERY 1A 1-EPD-B-1A FAILURE AT 4 HOURS
	1.200E-2		EPS-DGN-TM-DG1	DIESEL GENERATOR 1 UNAVAILABLE DUE TO T & M
	8.980E-4		MCW-LGC-FC-LOGICB	LOGIC TRAIN B NON-ESSENTL SW ISOLLOSS OF FUNCTION (PSA)
	3.560E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
37	1.355E-8	0.48	TRANS :28-22	
	8.000E-1		IE-TRANS	GENERAL PLANT TRANSIENT
	1.400E-2		RCS-PHN-MODPOOR	MODERATOR TEMP COEFFICIENT NOT ENOUGH NEGATIVE
	1.210E-6		RPS-ROD-CF-RCCAS	CCF 10 OR MORE RCCAS FAIL TO DROP
		EndState	->CD	
38	1.343E-8	0.48	LOIAS :28	
	1.000E-2		IE-LOIAS	LOSS OF INSTRUMENT AIR
	9.950E-1		/RPS-CCP-TM-CHA	CH-A IN T&M
	2.700E-6		RPS-TXX-CF-6OF8	CCF 6 BISTABLES IN 3 OF 4 CHANNELS
	5.000E-1		RPS-XHE-XE-NSGNL	OPERATOR FAILS TO RESPOND WITH NO RPS SIGNAL PRESENT
		EndState	->CD	
39	1.254E-8	0.44	MLOCA :06	
	2.000E-4		IE-MLOCA	MEDIUM LOCA
	6.270E-5		LPI-MDP-CF-FSAB	COMMON CAUSE FAILURE OF LPR MDPs TO START
		EndState	->CD	
40	1.210E-8	0.43	LOIAS :28	
	1.000E-2		IE-LOIAS	LOSS OF INSTRUMENT AIR
	1.210E-6		RPS-ROD-CF-RCCAS	CCF 10 OR MORE RCCAS FAIL TO DROP
		EndState	->CD	
41	1.142E-8	0.4	LOCW :19	
	4.000E-4		IE-LOCW	LOSS OF CIRCULATING WATER
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	3.400E-1		MCW-XHE-XL-NOREC	OPERATOR FAILS TO RECOVER CIRC WATER
		EndState	->CD	
42	1.094E-8	0.39	SGTR :16	
	4.000E-3		IE-SGTR	STEAM GENERATOR TUBE

#	Prob/Freq	Total %	Cut Set	Description
				RUPTURE
	2.280E-5		HPI-MOV-CF-CH1115BD	COMMON CAUSE FAILURE OF SUCTION MOVs 1-CH-MOV-1115B & D
	1.200E-1		OPR-XHE-XM-DEPRCS2	POST LOCA COOLDOWN AND DEPRESSURIZATION
		EndState	->CD	
43	1.080E-8	0.38	MLOCA :05	
	2.000E-4		IE-MLOCA	MEDIUM LOCA
	5.400E-5		CSR-XHE-XR-FLANGE	TEST FLANGES LEFT BLANKED AFTER 1-PT-17.6 (VALUE FROM PSA)
		EndState	->CD	
44	1.020E-8	0.36	TRANS :28-22	
	8.000E-1		IE-TRANS	GENERAL PLANT TRANSIENT
	1.400E-2		RCS-PHN-MODPOOR	MODERATOR TEMP COEFFICIENT NOT ENOUGH NEGATIVE
	9.950E-1		/RPS-CCP-TM-CHA	CH-A IN T&M
	1.830E-6		RPS-CCX-CF-6OF8	CCF 6 ANALOG PROCESS LOGIC MODULES IN 3 OF 4 CHANNELS
	5.000E-1		RPS-XHE-XE-NSGNL	OPERATOR FAILS TO RESPOND WITH NO RPS SIGNAL PRESENT
		EndState	->CD	
45	1.000E-8	0.35	MLOCA :06	
	2.000E-4		IE-MLOCA	MEDIUM LOCA
	5.000E-5		LPR-SMP-PG-ML	CONTAINMENT RECIRCULATION SUMP PLUGS - Medium LOCA
		EndState	->CD	
46	9.926E-9	0.35	LOOPGR :16	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	1.000E+0		DCP-BAT-LP-1BATA4HR	BATTERY 1A 1-EPD-B-1A FAILURE AT 4 HOURS
	2.118E-2		EPS-DGN-FR-DG1	DIESEL GENERATOR 1 FAILS TO RUN
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
		EndState	->CD	
47	9.104E-9	0.32	LOIAS :28	
	1.000E-2		IE-LOIAS	LOSS OF INSTRUMENT AIR
	9.950E-1		/RPS-CCP-TM-CHA	CH-A IN T&M
	1.830E-6		RPS-CCX-CF-6OF8	CCF 6 ANALOG PROCESS LOGIC MODULES IN 3 OF 4 CHANNELS
	5.000E-1		RPS-XHE-XE-NSGNL	OPERATOR FAILS TO RESPOND WITH NO RPS SIGNAL PRESENT
		EndState	->CD	
48	8.928E-9	0.32	LOOPGR :16	

#	Prob/Freq	Total %	Cut Set	Description
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.000E-4		AFW-SYS-LK-SGCKVS	STEAM LEAKAGE THRU CKVS 27.58 & 89 (PSA)
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
49	8.367E-9	0.3	ISL-RHR :3	
	2.092E-6		IE-ISL-RHR	RHR pipe ruptures
	1.000E+0		ISL-PSF-RP-RHR	RHR letdown pipe ruptures
	4.000E-3		ISL-XHE-XE-REC	OPERATORS FAIL TO RECOVER/ISOLATE ISLOCA RUPTURE
		EndState	->CD	
50	8.000E-9	0.28	SGTR :03	
	4.000E-3		IE-SGTR	STEAM GENERATOR TUBE RUPTURE
	1.000E-3		AFW-XHE-XM-CSTRFL	OPERATOR FAILS TO REFILL THE CST (ALT AFW SUCTN)
	2.000E-3		RHR-XHE-XM-ERROR	OPERATOR FAILS TO ACTUATE THE RHR SYSTEM
		EndState	->CD	

C.2.3 Surry SU4.1 (Case 2) Sequence and Cutset Report

SU4.1 (Case 2) Top 5 Dominant Sequences

LOMFW 16	/RPS, AFW, FAB
TRANS 27	/RPS, AFW, MFW, FAB
LOOPSC 16	/RPS-L, /EPS, AFW-L, FAB-L
LOIAS 27	/RPS, AFW, MFW, FAB
LOOPWR 16	/RPS-L, /EPS, AFW-L, FAB-L

SU4.1 (Case 2) Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	3.072E-5	51.47	LOMFW :16	
	1.000E-1		IE-LOMFW	LOSS OF MAIN FEEDWATER
	7.896E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
2	5.714E-6	9.57	LOOPGR :16	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	7.896E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS

#	Prob/Freq	Total %	Cut Set	Description
				CLOSED
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
3	4.915E-6	8.24	TRANS :27	
	8.000E-1		IE-TRANS	GENERAL PLANT TRANSIENT
	7.896E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	2.000E-2		CDS-XHE-XM-LVL	Operator Fails to Maintain Hotwell Level - (Added for loss of indicators)
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
4	4.389E-6	7.35	LOMFW :16	
	1.000E-1		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.000E-4		AFW-SYS-LK-SGCKVS	STEAM LEAKAGE THRU CKVS 27.58 & 89 (PSA)
	7.896E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
5	3.195E-6	5.35	LOOPSC :16	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	7.896E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
6	3.072E-6	5.15	LOIAS :27	
	1.000E-2		IE-LOIAS	LOSS OF INSTRUMENT AIR
	7.896E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
	1.000E+0		IAS-SYS-FC-CONDPOLISH	INSUFFICIENT AIR FROM CONDENSATE POLISHING CMPRESSRS
7	1.484E-6	2.49	LOOPWR :16	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	7.896E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
8	1.382E-6	2.32	LOACB-1J :28	
	4.500E-3		IE-LOACB-1J	LOSS OF 4160 VAC BUS 1J
	7.896E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS

#	Prob/Freq	Total %	Cut Set	Description
				CLOSED
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
9	8.163E-7	1.37	LOOPGR :16	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.000E-4		AFW-SYS-LK-SGCKVS	STEAM LEAKAGE THRU CKVS 27.58 & 89 (PSA)
	7.896E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
10	7.462E-7	1.25	LOACB-1J :28	
	4.500E-3		IE-LOACB-1J	LOSS OF 4160 VAC BUS 1J
	7.896E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	1.000E+0		DCP-BAT-LP-1BATB4HR	BATTERY 1B 1-EPD-B-1B FAILURE AT 4 HOURS
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
11	7.022E-7	1.18	TRANS :27	
	8.000E-1		IE-TRANS	GENERAL PLANT TRANSIENT
	1.000E-4		AFW-SYS-LK-SGCKVS	STEAM LEAKAGE THRU CKVS 27.58 & 89 (PSA)
	7.896E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	2.000E-2		CDS-XHE-XM-LVL	Operator Fails to Maintain Hotwell Level - (Added for loss of indicators)
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
12	6.359E-7	1.07	LOOPPC :16	
	2.070E-3		IE-LOOPPC	LOSS OF OFFSITE POWER INITIATOR (PLANT-CENTERED)
	7.896E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
13	5.266E-7	0.88	LOMFW :16	
	1.000E-1		IE-LOMFW	LOSS OF MAIN FEEDWATER
	7.896E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	1.200E-5		CDS-CKV-CC-CN151	ECST M/U CHK VALVE 1-CN-151 FAILS CLOSED
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
14	4.915E-7	0.82	LOCHS :16	
	8.000E-2		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	7.896E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	2.000E-2		CDS-XHE-XM-LVL	Operator Fails to Maintain Hotwell Level - (Added for loss of indicators)

#	Prob/Freq	Total %	Cut Set	Description
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
15	4.564E-7	0.76	LOOPSC :16	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	1.000E-4		AFW-SYS-LK-SGCKVS	STEAM LEAKAGE THRU CKVS 27.58 & 89 (PSA)
	7.896E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
16	4.389E-7	0.74	LOIAS :27	
	1.000E-2		IE-LOIAS	LOSS OF INSTRUMENT AIR
	1.000E-4		AFW-SYS-LK-SGCKVS	STEAM LEAKAGE THRU CKVS 27.58 & 89 (PSA)
	7.896E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
	1.000E+0		IAS-SYS-FC-CONDPOLISH	INSUFFICIENT AIR FROM CONDENSATE POLISHING CMPRESSRS

C.2.4 Surry SU6.1 Sequence and Cutset Report

SU6.1 Top 90 Percent Dominant Sequences

SLOCA 06	/RPS, /AFW, /HPI, /SSC, RHR, HPR, LPR
SLOCA 28	/RPS, AFW, FAB
SLOCA 03	/RPS, /AFW, /HPI, /SSC, RHR, /HPR, CSR
SLOCA 06	/RPS, /AFW, /HPI, /SSC, RHR, HPR, LPR
SLOCA 15	/RPS, /AFW, HPI, SSC1

SU6.1 Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cutset	Description
1	6.270E-6	17.16	SLOCA :06	
	1.000E+0		IE-SLOCA	SMALL LOCA
	1.000E-1		HPI-XHE-XL-RWST2	OPERATOR FAILS TO ALIGN HPI SUCTION TO THE U2 RWST
	6.270E-5		LPI-MDP-CF-FSAB	COMMON CAUSE FAILURE OF LPR MDPs TO START
2	3.360E-6	9.19	SLOCA :28	
	1.000E+0		IE-SLOCA	SMALL LOCA
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
3	2.688E-6	7.36	SLOCA :03	
	1.000E+0		IE-SLOCA	SMALL LOCA

#	Prob/Freq	Total %	Cutset	Description
	2.688E-6		SWS-MOV-CF-104ALL	COMMON CAUSE FAILURE OF CSR/SWS MOV 104A/B/C/D
4	2.688E-6	7.36	SLOCA :03	
	1.000E+0		IE-SLOCA	SMALL LOCA
	2.688E-6		SWS-MOV-CF-105ALL	COMMON CAUSE FAILURE OF CSR/SWS MOV 105A/B/C/D
5	2.688E-6	7.36	SLOCA :03	
	1.000E+0		IE-SLOCA	SMALL LOCA
	2.688E-6		SWS-MOV-CF-103ALL	CCF OF SWS DISCHARGE MOVs 103A/B/C/D
6	2.280E-6	6.24	SLOCA :06	
	1.000E+0		IE-SLOCA	SMALL LOCA
	1.000E-1		HPI-XHE-XL-RWST2	OPERATOR FAILS TO ALIGN HPI SUCTION TO THE U2 RWST
	2.280E-5		LPR-MOV-CF-SI1860AB	COMMON CAUSE FAILURE OF SUMP ISOL VALVES 1-SI-MOC-1860A & B
7	1.200E-6	3.28	SLOCA :06	
	1.000E+0		IE-SLOCA	SMALL LOCA
	1.000E-1		HPI-XHE-XL-RWST2	OPERATOR FAILS TO ALIGN HPI SUCTION TO THE U2 RWST
	1.500E-3		LPI-MDP-FS-1B	LPR MDP TRAIN 1B FAILS TO START
	8.000E-3		LPI-MDP-TM-SIP1A	LPI MDP TRAIN 1-SI-P-1A UNAVAILABLE DUE TO T & M
8	1.200E-6	3.28	SLOCA :06	
	1.000E+0		IE-SLOCA	SMALL LOCA
	1.000E-1		HPI-XHE-XL-RWST2	OPERATOR FAILS TO ALIGN HPI SUCTION TO THE U2 RWST
	1.500E-3		LPI-MDP-FS-SIP1A	LPI MDP TRAIN 1-SI-P-1A FAILURES
	8.000E-3		LPI-MDP-TM-SIP1B	LPI MDP TRAIN 1B UNAVAILABLE DUE TO T & M
9	1.043E-6	2.86	SLOCA :06	
	1.000E+0		IE-SLOCA	SMALL LOCA
	1.000E-1		HPI-XHE-XL-RWST2	OPERATOR FAILS TO ALIGN HPI SUCTION TO THE U2 RWST
	1.043E-5		LPI-MDP-CF-FRAB	COMMON CAUSE FAILURE OF LPR MDPs TO RUN
10	9.302E-7	2.55	SLOCA :15	
	1.000E+0		IE-SLOCA	SMALL LOCA
	2.280E-5		HPI-MOV-CF-CH1115BD	COMMON CAUSE FAILURE OF SUCTION MOVs 1-CH-MOV-1115B & D
	3.400E-1		HPI-XHE-XM-U2XTIE	OPERATOR FAILS TO CROSSTIE UNIT 2 CHARGING TO UNIT 1
	1.200E-1		OPR-XHE-XM-DEPRCS2	POST LOCA COOLDOWN AND DEPRESSURIZATION
11	8.458E-7	2.31	SLOCA :15	
	1.000E+0		IE-SLOCA	SMALL LOCA
	7.048E-6		HPI-MOV-CF-CH1867842	CCF OF HHSI DISCH MOV'S CH-MOV-1867C/D/1842 TO OPEN
	1.200E-1		OPR-XHE-XM-DEPRCS2	POST LOCA COOLDOWN AND DEPRESSURIZATION
12	8.000E-7	2.19	SLOCA :06	
	1.000E+0		IE-SLOCA	SMALL LOCA
	1.000E-1		HPI-XHE-XL-RWST2	OPERATOR FAILS TO ALIGN HPI SUCTION TO THE U2 RWST

#	Prob/Freq	Total %	Cutset	Description
	8.000E-3		LPI-MDP-TM-SIP1A	LPI MDP TRAIN 1-SI-P-1A UNAVAILABLE DUE TO T & M
	1.000E-3		LPI-XHE-XR-SIP1B	OPERATOR FAILS TO RESTORE LPI MDP 1-SI-P-1B AFTER T & M
13	8.000E-7	2.19	SLOCA :06	
	1.000E+0		IE-SLOCA	SMALL LOCA
	1.000E-1		HPI-XHE-XL-RWST2	OPERATOR FAILS TO ALIGN HPI SUCTION TO THE U2 RWST
	8.000E-3		LPI-MDP-TM-SIP1B	LPI MDP TRAIN 1B UNAVAILABLE DUE TO T & M
	1.000E-3		LPI-XHE-XR-SIP1A	OPERATOR FAILS TO RESTORE LPI MDP 1-SI-P-1A AFTER T & M
14	8.000E-7	2.19	SLOCA :06	
	1.000E+0		IE-SLOCA	SMALL LOCA
	1.000E-1		HPI-XHE-XL-RWST2	OPERATOR FAILS TO ALIGN HPI SUCTION TO THE U2 RWST
	8.000E-3		LPI-MDP-TM-SIP1B	LPI MDP TRAIN 1B UNAVAILABLE DUE TO T & M
	1.000E-3		LPR-MOV-OO-SI1862A	LPR/RWST ISOL MOV 1-SI-MOV-1862A FAILS
15	8.000E-7	2.19	SLOCA :06	
	1.000E+0		IE-SLOCA	SMALL LOCA
	1.000E-1		HPI-XHE-XL-RWST2	OPERATOR FAILS TO ALIGN HPI SUCTION TO THE U2 RWST
	8.000E-3		LPI-MDP-TM-SIP1A	LPI MDP TRAIN 1-SI-P-1A UNAVAILABLE DUE TO T & M
	1.000E-3		LPR-MOV-OO-SI1862B	LPR/RWST ISOL MOV 1-SI-MOV-1862B FAILS
16	8.000E-7	2.19	SLOCA :06	
	1.000E+0		IE-SLOCA	SMALL LOCA
	1.000E-1		HPI-XHE-XL-RWST2	OPERATOR FAILS TO ALIGN HPI SUCTION TO THE U2 RWST
	8.000E-3		LPI-MDP-TM-SIP1A	LPI MDP TRAIN 1-SI-P-1A UNAVAILABLE DUE TO T & M
	1.000E-3		LPR-MOV-CC-SI1860B	FAILURE OF CONTAINMENT SUMP MOV 1-SI-MOV-1860B
17	8.000E-7	2.19	SLOCA :06	
	1.000E+0		IE-SLOCA	SMALL LOCA
	1.000E-1		HPI-XHE-XL-RWST2	OPERATOR FAILS TO ALIGN HPI SUCTION TO THE U2 RWST
	8.000E-3		LPI-MDP-TM-SIP1B	LPI MDP TRAIN 1B UNAVAILABLE DUE TO T & M
	1.000E-3		LPR-MOV-CC-SI1860A	FAILURE OF CONTAINMENT SUMP MOV 1-SI-MOV-1860A
18	7.570E-7	2.07	SLOCA :06	
	1.000E+0		IE-SLOCA	SMALL LOCA
	1.000E-1		HPI-XHE-XL-RWST2	OPERATOR FAILS TO ALIGN HPI SUCTION TO THE U2 RWST
	7.570E-6		LPR-MOV-CF-SI1862AB	COMMON CAUSE FAILURE OF LPR RWST ISOL MOVs 1-SI-MOV-1862A & B
19	4.800E-7	1.31	SLOCA :28	
	1.000E+0		IE-SLOCA	SMALL LOCA
	1.000E-4		AFW-SYS-LK-SGCKVS	STEAM LEAKAGE THRU CKVS 27.58 & 89 (PSA)
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
20	4.303E-7	1.18	SLOCA :06	

#	Prob/Freq	Total %	Cutset	Description
	1.000E+0		IE-SLOCA	SMALL LOCA
	1.000E-1		HPI-XHE-XL-RWST2	OPERATOR FAILS TO ALIGN HPI SUCTION TO THE U2 RWST
	5.379E-4		LPI-MDP-FR-SIP1B	LPI MDP TRAIN 1-SI-P-1B FAILS TO RUN
	8.000E-3		LPI-MDP-TM-SIP1A	LPI MDP TRAIN 1-SI-P-1A UNAVAILABLE DUE TO T & M
21	4.303E-7	1.18	SLOCA :06	
	1.000E+0		IE-SLOCA	SMALL LOCA
	1.000E-1		HPI-XHE-XL-RWST2	OPERATOR FAILS TO ALIGN HPI SUCTION TO THE U2 RWST
	5.379E-4		LPI-MDP-FR-SIP1A	LPI MDP TRAIN 1-SI-P-1A FAILS TO RUN
	8.000E-3		LPI-MDP-TM-SIP1B	LPI MDP TRAIN 1B UNAVAILABLE DUE TO T & M
22	3.811E-7	1.04	SLOCA :15	
	1.000E+0		IE-SLOCA	SMALL LOCA
	3.176E-6		CPC-STR-CF-DSSALL	CCF OF CPC STRAINERS 1-DS-S-1A/1B/2A/2B
	1.200E-1		OPR-XHE-XM-DEPRCS2	POST LOCA COOLDOWN AND DEPRESSURIZATION

C.2.5 Surry HU3.1 Sequence and Cutset Report

HU3.1 Top 5 Dominant Sequences

LOMFW 16	/RPS, AFW, FAB
ISL-RHR 3	ISL-RPT-RHR,/ISL-DIAG,ISL-REC-RHR
LOOPGR 02-06	/RPS L, /EPS, /AFW L, /PORV L, LOSC L, /RSD, /BP1, BP2, OPR 02H, HPI L
LOACB-1J 28	/RPS,AFW,MFW,FAB
XLOCA 2	RPVRM

HU3.1 Top 50 Cutsets

#	Prob/Freq	Total %	Cutset	Description
1	3.360E-7	9.43	LOMFW :16	
	1.000E-1		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
2	2.092E-7	5.87	ISL-RHR :3	
	2.092E-6		IE-ISL-RHR	RHR pipe ruptures
	1.000E+0		ISL-PSF-RP-RHR	RHR letdown pipe ruptures
	1.000E-1		ZV-ISL-REC-RHR	ISLOCA RUPTURE IS NOT RECOVERABLE
		EndState	->CD	
3	1.589E-7	4.46	LOOPGR :02-06	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.200E-2		EPS-DGN-TM-DG1	DIESEL GENERATOR 1 UNAVAILABLE DUE TO T & M
	3.560E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	5.000E-1		SWS-101A-OPEN	PROBABILITY OF 1-SW-MOV-101A ALIGNED OPEN

	2.000E-2		SWS-XHE-XM-ISOL	FAILURE TO VERIFY/ISOLATE SWS/CW INLET MOVs (AP-12, STEP 11)
		EndState	->CD	
4	1.134E-7	3.18	LOACB-1J :28	
	4.500E-3		IE-LOACB-1J	LOSS OF 4160 VAC BUS 1J
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	1.000E+0		DCP-BAT-LP-1BATB4HR	BATTERY 1B 1-EPD-B-1B FAILURE AT 4 HOURS
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
		EndState	->CD	
5	1.000E-7	2.81	XLOCA :2	
	1.000E-7		IE-XLOCA	EXCESSIVE LOCA INITIATING EVENT
	1.000E+0		RPVRM	REACTOR VESSEL RUPTURE
		EndState	->CD	
6	9.600E-8	2.69	SGTR :09	
	4.000E-3		IE-SGTR	STEAM GENERATOR TUBE RUPTURE
	3.000E-1		HPI-XHE-XM-RWSTR1	OPERATOR FAILS TO REFILL THE RWST
	2.000E-2		OPR-XHE-XM-DEPRCS	OPERATOR FAILS TO COOLDOWN AND DEPRESSURIZE REACTOR
	4.000E-3		OPR-XHE-XM-ECA312	OPERATOR FAILS TO IMPLEMENT SGTR PROCEDURE ECA 3.1/3.2
		EndState	->CD	
7	9.432E-8	2.65	LOOPSC :02-06	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	1.200E-2		EPS-DGN-TM-DG1	DIESEL GENERATOR 1 UNAVAILABLE DUE TO T & M
	3.779E-1		OEP-XHE-XL-NR02HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (SWITCHYARD)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	5.000E-1		SWS-101A-OPEN	PROBABILITY OF 1-SW-MOV-101A ALIGNED OPEN
	2.000E-2		SWS-XHE-XM-ISOL	FAILURE TO VERIFY/ISOLATE SWS/CW INLET MOVs (AP-12, STEP 11)
		EndState	->CD	
8	8.367E-8	2.35	ISL-RHR :4	
	2.092E-6		IE-ISL-RHR	RHR pipe ruptures
	1.000E+0		ISL-PSF-RP-RHR	RHR letdown pipe ruptures
	4.000E-2		ISL-XHE-XD-DIAG	OPERATORS FAIL TO DIAGNOSE ISLOCA
		EndState	->CD	
9	6.621E-8	1.86	LOOPGR :02-06	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	5.000E-3		EPS-DGN-FS-DG1	DIESEL GENERATOR 1 FAILS TO START
	3.560E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	5.000E-1		SWS-101A-OPEN	PROBABILITY OF 1-SW-MOV-101A ALIGNED OPEN
	2.000E-2		SWS-XHE-XM-ISOL	FAILURE TO VERIFY/ISOLATE SWS/CW INLET MOVs (AP-12, STEP 11)
		EndState	->CD	
10	6.250E-8	1.75	LOOPGR :16	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED

	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
11	6.030E-8	1.69	LOOPWR :02-06	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	1.200E-2		EPS-DGN-TM-DG1	DIESEL GENERATOR 1 UNAVAILABLE DUE TO T & M
	5.202E-1		OEP-XHE-XL-NR02HWR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (WEATHER-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	5.000E-1		SWS-101A-OPEN	PROBABILITY OF 1-SW-MOV-101A ALIGNED OPEN
	2.000E-2		SWS-XHE-XM-ISOL	FAILURE TO VERIFY/ISOLATE SWS/CW INLET MOVs (AP-12, STEP 11)
		EndState	->CD	
12	5.760E-8	1.62	SGTR :12	
	4.000E-3		IE-SGTR	STEAM GENERATOR TUBE RUPTURE
	3.000E-1		HPI-XHE-XM-RWSTR1	OPERATOR FAILS TO REFILL THE RWST
	1.200E-2		OPR-XHE-XE-SGTR	OPERATOR FAILS TO DIAGNOSE SGTR AND 1-E-3 SGTR STEP 3 ISOLATE RUPTURED SG
	4.000E-3		OPR-XHE-XM-ECA312	OPERATOR FAILS TO IMPLEMENT SGTR PROCEDURE ECA 3.1/3.2
		EndState	->CD	
13	5.496E-8	1.54	LOOPGR :02-06	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.118E-2		EPS-DGN-FR-DG1	DIESEL GENERATOR 1 FAILS TO RUN
	3.560E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	1.960E-1		OEP-XHE-XX-NR02HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (2HR-GR AVAIL)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	5.000E-1		SWS-101A-OPEN	PROBABILITY OF 1-SW-MOV-101A ALIGNED OPEN
	2.000E-2		SWS-XHE-XM-ISOL	FAILURE TO VERIFY/ISOLATE SWS/CW INLET MOVs (AP-12, STEP 11)
		EndState	->CD	
14	4.884E-8	1.37	LOOPWR :02-06	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	2.118E-2		EPS-DGN-FR-DG1	DIESEL GENERATOR 1 FAILS TO RUN
	5.202E-1		OEP-XHE-XL-NR02HWR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (WEATHER-RELATED)
	4.590E-1		OEP-XHE-XX-NR02HWR1	CONVOLUTION FACTOR FOR 1FTR-OPR (2HR-WR AVAIL)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	5.000E-1		SWS-101A-OPEN	PROBABILITY OF 1-SW-MOV-101A ALIGNED OPEN
	2.000E-2		SWS-XHE-XM-ISOL	FAILURE TO VERIFY/ISOLATE SWS/CW INLET MOVs (AP-12, STEP 11)
		EndState	->CD	
15	4.800E-8	1.35	LOMFW :16	
	1.000E-1		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.000E-4		AFW-SYS-LK-SGCKVS	STEAM LEAKAGE THRU CKVS 27.58 & 89 (PSA)
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	

16	3.973E-8	1.11	LOOPGR :02-06	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-3		EPS-SEQ-FO-DG1	DG1 SEQUENCENCER FAILS
	3.560E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	5.000E-1		SWS-101A-OPEN	PROBABILITY OF 1-SW-MOV-101A ALIGNED OPEN
	2.000E-2		SWS-XHE-XM-ISOL	FAILURE TO VERIFY/ISOLATE SWS/CW INLET MOVs (AP-12, STEP 11)
		EndState	->CD	
17	3.930E-8	1.1	LOOPSC :02-06	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	5.000E-3		EPS-DGN-FS-DG1	DIESEL GENERATOR 1 FAILS TO START
	3.779E-1		OEP-XHE-XL-NR02HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (SWITCHYARD)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	5.000E-1		SWS-101A-OPEN	PROBABILITY OF 1-SW-MOV-101A ALIGNED OPEN
	2.000E-2		SWS-XHE-XM-ISOL	FAILURE TO VERIFY/ISOLATE SWS/CW INLET MOVs (AP-12, STEP 11)
		EndState	->CD	
18	3.494E-8	0.98	LOOPSC :16	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
19	3.360E-8	0.94	LOIAS :27	
	1.000E-2		IE-LOIAS	LOSS OF INSTRUMENT AIR
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
	1.000E+0		IAS-SYS-FC-CONDPOLISH	INSUFFICIENT AIR FROM CONDENSATE POLISHING CMPRESSRS
		EndState	->CD	
20	3.240E-8	0.91	SLOCA :03	
	6.000E-4		IE-SLOCA	SMALL LOCA
	5.400E-5		CSR-XHE-XR-FLANGE	TEST FLANGES LEFT BLANKED AFTER 1-PT-17.6 (VALUE FROM PSA)
		EndState	->CD	
21	3.179E-8	0.89	LOOPSC :02-06	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	2.118E-2		EPS-DGN-FR-DG1	DIESEL GENERATOR 1 FAILS TO RUN
	3.779E-1		OEP-XHE-XL-NR02HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (SWITCHYARD)
	1.910E-1		OEP-XHE-XX-NR02HSC1	CONVOLUTION FACTOR FOR 1FTR-OPR (2HR-SC AVAIL)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	5.000E-1		SWS-101A-OPEN	PROBABILITY OF 1-SW-MOV-101A ALIGNED OPEN

	2.000E-2		SWS-XHE-XM-ISOL	FAILURE TO VERIFY/ISOLATE SWS/CW INLET MOVs (AP-12, STEP 11)
		EndState	->CD	
22	3.000E-8	0.84	SLOCA :03	
	6.000E-4		IE-SLOCA	SMALL LOCA
	5.000E-5		LPR-SMP-PG-SL	CONTAINMENT RECIRCULATION SUMP PLUGS - Small LOCA
		EndState	->CD	
23	2.576E-8	0.72	TRANS :28-20	
	8.000E-1		IE-TRANS	GENERAL PLANT TRANSIENT
	2.000E-2		CVC-XHE-XM-BOR	OPERATOR FAILS TO INITIATE EMERGENCY BORATION
	1.610E-6		RPS-BME-CF-RTBAB	CCF OF RTB-A AND RTB-B (MECHANICAL)
		EndState	->CD	
24	2.512E-8	0.7	LOOPWR :02-06	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	5.000E-3		EPS-DGN-FS-DG1	DIESEL GENERATOR 1 FAILS TO START
	5.202E-1		OEP-XHE-XL-NR02HWR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (WEATHER-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	5.000E-1		SWS-101A-OPEN	PROBABILITY OF 1-SW-MOV-101A ALIGNED OPEN
	2.000E-2		SWS-XHE-XM-ISOL	FAILURE TO VERIFY/ISOLATE SWS/CW INLET MOVs (AP-12, STEP 11)
		EndState	->CD	
25	2.400E-8	0.67	SGTR :09	
	4.000E-3		IE-SGTR	STEAM GENERATOR TUBE RUPTURE
	1.000E-3		AFW-XHE-XM-CSTRFL	OPERATOR FAILS TO REFILL THE CST (ALT AFW SUCTN)
	3.000E-1		HPI-XHE-XM-RWSTR1	OPERATOR FAILS TO REFILL THE RWST
	2.000E-2		OPR-XHE-XM-DEPRCS	OPERATOR FAILS TO COOLDOWN AND DEPRESSURIZE REACTOR
		EndState	->CD	
26	2.358E-8	0.66	LOOPSC :02-06	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	3.000E-3		EPS-SEQ-FO-DG1	DG1 SEQUENCENCER FAILS
	3.779E-1		OEP-XHE-XL-NR02HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (SWITCHYARD)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	5.000E-1		SWS-101A-OPEN	PROBABILITY OF 1-SW-MOV-101A ALIGNED OPEN
	2.000E-2		SWS-XHE-XM-ISOL	FAILURE TO VERIFY/ISOLATE SWS/CW INLET MOVs (AP-12, STEP 11)
		EndState	->CD	
27	2.149E-8	0.6	TRANS :28-20	
	8.000E-1		IE-TRANS	GENERAL PLANT TRANSIENT
	2.000E-2		CVC-XHE-XM-BOR	OPERATOR FAILS TO INITIATE EMERGENCY BORATION
	9.950E-1		/RPS-CCP-TM-CHA	CH-A IN T&M
	2.700E-6		RPS-TXX-CF-6OF8	CCF 6 BISTABLES IN 3 OF 4 CHANNELS
	5.000E-1		RPS-XHE-XE-NSGNL	OPERATOR FAILS TO RESPOND WITH NO RPS SIGNAL PRESENT
		EndState	->CD	
28	2.009E-8	0.56	ISL-LPI :3	
	2.009E-6		IE-ISL-LPI	ISLOCA IE 2-CKV LPI interface
	1.000E-1		ISL-PSF-RP-LPI	LP injection pipe ruptures
	1.000E-1		ZV-ISL-REC-LPI	ISLOCA rupture is not recoverable
		EndState	->CD	

29	1.936E-8	0.54	TRANS :28-20	
	8.000E-1		IE-TRANS	GENERAL PLANT TRANSIENT
	2.000E-2		CVC-XHE-XM-BOR	OPERATOR FAILS TO INITIATE EMERGENCY BORATION
	1.210E-6		RPS-ROD-CF-RCCAS	CCF 10 OR MORE RCCAS FAIL TO DROP
		EndState	->CD	
30	1.875E-8	0.53	SLOCA :06	
	6.000E-4		IE-SLOCA	SMALL LOCA
	1.250E-4		CSR-XHE-XM-MISCALIB	RWST LEVEL CHANNELS 1-CS-LC-100A/B/C/D MISCALIBRATED
	2.500E-1		HPR-XHE-XM-RECIRC	1-ES-1.3 TRANSFER TO COLD LEG RECIRCULATION
		EndState	->CD	
31	1.803E-8	0.51	TRANS :28-22	
	8.000E-1		IE-TRANS	GENERAL PLANT TRANSIENT
	1.400E-2		RCS-PHN-MODPOOR	MODERATOR TEMP COEFFICIENT NOT ENOUGH NEGATIVE
	1.610E-6		RPS-BME-CF-RTBAB	CCF OF RTB-A AND RTB-B (MECHANICAL)
		EndState	->CD	
32	1.623E-8	0.46	LOOPWR :16	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
33	1.620E-8	0.45	LOACB-1J :28	
	4.500E-3		IE-LOACB-1J	LOSS OF 4160 VAC BUS 1J
	1.000E-4		AFW-SYS-LK-SGCKVS	STEAM LEAKAGE THRU CKVS 27.58 & 89 (PSA)
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	1.000E+0		DCP-BAT-LP-1BATB4HR	BATTERY 1B 1-EPD-B-1B FAILURE AT 4 HOURS
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
		EndState	->CD	
34	1.610E-8	0.45	LOIAS :28	
	1.000E-2		IE-LOIAS	LOSS OF INSTRUMENT AIR
	1.610E-6		RPS-BME-CF-RTBAB	CCF OF RTB-A AND RTB-B (MECHANICAL)
		EndState	->CD	
35	1.589E-8	0.45	LOOPGR :02-06	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.200E-2		EPS-DGN-TM-DG1	DIESEL GENERATOR 1 UNAVAILABLE DUE TO T & M
	1.000E-3		MCW-MOV-OO-106D	CONDENSER INLET MOV1-CW-MOV-106D FAILS OPEN
	3.560E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
36	1.589E-8	0.45	LOOPGR :02-06	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.200E-2		EPS-DGN-TM-DG1	DIESEL GENERATOR 1 UNAVAILABLE DUE TO T & M
	1.000E-3		MCW-MOV-OO-100C	CONDENSER OUTLET 1-CW-MOV-100CD FAILS OPEN

	3.560E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
37	1.589E-8	0.45	LOOPGR :02-06	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.200E-2		EPS-DGN-TM-DG1	DIESEL GENERATOR 1 UNAVAILABLE DUE TO T & M
	1.000E-3		MCW-MOV-OO-106B	CONDENSER INLET MOV1-CW-MOV-106B FAILS OPEN
	3.560E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
38	1.589E-8	0.45	LOOPGR :02-06	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.200E-2		EPS-DGN-TM-DG1	DIESEL GENERATOR 1 UNAVAILABLE DUE TO T & M
	1.000E-3		MCW-MOV-OO-100A	CONDENSER OUTLET 1-CW-MOV-100A FAILS OPEN
	3.560E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
39	1.512E-8	0.42	LOACB-1J :28	
	4.500E-3		IE-LOACB-1J	LOSS OF 4160 VAC BUS 1J
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
40	1.507E-8	0.42	LOOPWR :02-06	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	3.000E-3		EPS-SEQ-FO-DG1	DG1 SEQUENCENCER FAILS
	5.202E-1		OEP-XHE-XL-NR02HWR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (WEATHER-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	5.000E-1		SWS-101A-OPEN	PROBABILITY OF 1-SW-MOV-101A ALIGNED OPEN
	2.000E-2		SWS-XHE-XM-ISOL	FAILURE TO VERIFY/ISOLATE SWS/CW INLET MOVs (AP-12, STEP 11)
		EndState	->CD	
41	1.504E-8	0.42	TRANS :28-22	
	8.000E-1		IE-TRANS	GENERAL PLANT TRANSIENT
	1.400E-2		RCS-PHN-MODPOOR	MODERATOR TEMP COEFFICIENT NOT ENOUGH NEGATIVE
	9.950E-1		/RPS-CCP-TM-CHA	CH-A IN T&M
	2.700E-6		RPS-TXX-CF-6OF8	CCF 6 BISTABLES IN 3 OF 4 CHANNELS
	5.000E-1		RPS-XHE-XE-NSGNL	OPERATOR FAILS TO RESPOND WITH NO RPS SIGNAL PRESENT
		EndState	->CD	
42	1.457E-8	0.41	TRANS :28-20	
	8.000E-1		IE-TRANS	GENERAL PLANT TRANSIENT

	2.000E-2		CVC-XHE-XM-BOR	OPERATOR FAILS TO INITIATE EMERGENCY BORATION
	9.950E-1		/RPS-CCP-TM-CHA	CH-A IN T&M
	1.830E-6		RPS-CCX-CF-6OF8	CCF 6 ANALOG PROCESS LOGIC MODULES IN 3 OF 4 CHANNELS
	5.000E-1		RPS-XHE-XE-NSGNL	OPERATOR FAILS TO RESPOND WITH NO RPS SIGNAL PRESENT
		EndState	->CD	
43	1.440E-8	0.4	SGTR :12	
	4.000E-3		IE-SGTR	STEAM GENERATOR TUBE RUPTURE
	1.000E-3		AFW-XHE-XM-CSTRFL	OPERATOR FAILS TO REFILL THE CST (ALT AFW SUCTN)
	3.000E-1		HPI-XHE-XM-RWSTR1	OPERATOR FAILS TO REFILL THE RWST
	1.200E-2		OPR-XHE-XE-SGTR	OPERATOR FAILS TO DIAGNOSE SGTR AND 1-E-3 SGTR STEP 3 ISOLATE RUPTURED SG
		EndState	->CD	
44	1.427E-8	0.4	LOOPGR :02-06	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.000E+0		DCP-BAT-LP-1BATA4HR	BATTERY 1A 1-EPD-B-1A FAILURE AT 4 HOURS
	1.200E-2		EPS-DGN-TM-DG1	DIESEL GENERATOR 1 UNAVAILABLE DUE TO T & M
	8.980E-4		MCW-LGC-FC-LOGICB	LOGIC TRAIN B NON-ESSENTL SW ISOLLOSS OF FUNCTION (PSA)
	3.560E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
45	1.355E-8	0.38	TRANS :28-22	
	8.000E-1		IE-TRANS	GENERAL PLANT TRANSIENT
	1.400E-2		RCS-PHN-MODPOOR	MODERATOR TEMP COEFFICIENT NOT ENOUGH NEGATIVE
	1.210E-6		RPS-ROD-CF-RCCAS	CCF 10 OR MORE RCCAS FAIL TO DROP
		EndState	->CD	
46	1.343E-8	0.38	LOIAS :28	
	1.000E-2		IE-LOIAS	LOSS OF INSTRUMENT AIR
	9.950E-1		/RPS-CCP-TM-CHA	CH-A IN T&M
	2.700E-6		RPS-TXX-CF-6OF8	CCF 6 BISTABLES IN 3 OF 4 CHANNELS
	5.000E-1		RPS-XHE-XE-NSGNL	OPERATOR FAILS TO RESPOND WITH NO RPS SIGNAL PRESENT
		EndState	->CD	
47	1.324E-8	0.37	LOOPGR :02-06	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.560E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	5.000E-1		SWS-101A-OPEN	PROBABILITY OF 1-SW-MOV-101A ALIGNED OPEN
	1.000E-3		SWS-MOV-OO-101A	BEARING COOLING MOV 101A FAILS TO ISOLATE
	2.000E-2		SWS-XHE-XM-ISOL	FAILURE TO VERIFY/ISOLATE SWS/CW INLET MOVs (AP-12, STEP 11)
		EndState	->CD	
48	1.324E-8	0.37	LOOPGR :02-06	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	5.000E-4		MCW-XHE-XM-LVL	LEVEL INSTRUMENTS 1-CW-LS-102 / 103 CCF MISCALIBRATED (PSA)

	3.560E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-2		SWS-XHE-XM-MKUP	OPERATOR FAILS TO START THE BACKUP SWS PUMPS
		EndState	->CD	
49	1.324E-8	0.37	LOOPGR :02-06	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.560E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	5.000E-1		SWS-101B-OPEN	PROBABILITY OF 1-SW-MOV-101B ALIGNED OPEN
	1.000E-3		SWS-MOV-OO-101B	BEARING COOLING MOV 101B FAILS TO ISOLATE
	2.000E-2		SWS-XHE-XM-ISOL	FAILURE TO VERIFY/ISOLATE SWS/CW INLET MOVs (AP-12, STEP 11)
		EndState	->CD	
50	1.324E-8	0.37	LOOPGR :02-06	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.560E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	5.000E-1		SWS-201B-OPEN	PROBABILITY OF 1-SW-MOV-201B ALIGNED OPEN
	1.000E-3		SWS-MOV-OO-201B	UNIT 2 BEARING COOLING MOV 201B FAILS TO ISOLATE
	2.000E-2		SWS-XHE-XM-ISOL	FAILURE TO VERIFY/ISOLATE SWS/CW INLET MOVs (AP-12, STEP 11)
		EndState	->CD	

C.2.6 Surry SA1.1 Sequence and Cutset Report

SA1.1 Top 90 Percent Dominant Sequences

LOOPGR 02-06	/RPS-L, /EPS, /AFW-L, /PORV-L, LOSC-L, /RSD, /BP1, BP2, OPR-02H, HPI-L
LOOPGR 17-06	/RPS-L, EPS, /AFW-B, /PORV-B, /RSD, /BP1, BP2, OPR-04H, DGR-04H
LOOPGR 02-11	/RPS-L, /EPS, /AFW-L, /PORV-L, LOSC-L, /RSD, BP1, /BP2, OPR-02H, HPI-L

SA1.1 Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cutset	Description
1	1.295E-3	60.07	LOOPGR :02-06	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.500E-2		CPC-MDP-TM-SWP10A	CPC SWS MDP 1-SW-P-10A UNAVAILABLE DUE TO TEST & MAINT
	1.000E+0		IAS-SYS-FC-CONDPOLISH	INSUFFICIENT AIR FROM CONDENSATE POLISHING CMPRESSRS
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	

#	Prob/Freq	Total %	Cutset	Description
2	1.727E-4	8.01	LOOPGR :02-06	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.000E-3		CPC-MDP-FS-SWP10A	CPC SWS TRAIN 1-SW-P-10A FAILURES TO START
	1.000E+0		IAS-SYS-FC-CONDPOLISH	INSUFFICIENT AIR FROM CONDENSATE POLISHING CMPRESSRS
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
3	1.029E-4	4.77	LOOPGR :17-06	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.118E-2		EPS-DGN-FR-DG1	DIESEL GENERATOR 1 FAILS TO RUN
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	2.340E-1		OEP-XHE-XX-NR04HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (4HR-GR AVAIL)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
4	8.634E-5	4	LOOPGR :02-06	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.000E-3		MCW-MOV-OO-100B	CONDENSER OUTLET 1-CW-MOV-100BD FAILS OPEN
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
5	8.634E-5	4	LOOPGR :02-06	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.000E-3		MCW-MOV-OO-106A	CONDENSER INLET MOV1-CW-MOV-106A FAILS OPEN
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
6	8.634E-5	4	LOOPGR :02-06	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.000E-3		MCW-MOV-OO-106C	CONDENSER INLET MOV1-CW-MOV-106C FAILS OPEN
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS

#	Prob/Freq	Total %	Cutset	Description
		EndState	->CD	
7	8.634E-5	4	LOOPGR :02-06	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	5.000E-1		SWS-101B-OPEN	PROBABILITY OF 1-SW-MOV-101B ALIGNED OPEN
	2.000E-3		SWS-XHE-XM-ISOL	FAILURE TO VERIFY/ISOLATE SWS/CW INLET MOVs (AP-12, STEP 11)
		EndState	->CD	
8	8.634E-5	4	LOOPGR :02-06	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.000E-3		MCW-MOV-OO-100D	CONDENSER OUTLET 1-CW-MOV-100D FAILS OPEN
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
9	6.475E-5	3	LOOPGR :02-11	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.500E-2		CPC-MDP-TM-SWP10A	CPC SWS MDP 1-SW-P-10A UNAVAILABLE DUE TO TEST & MAINT
	1.000E+0		IAS-SYS-FC-CONDPOLISH	INSUFFICIENT AIR FROM CONDENSATE POLISHING CMPRESSRS
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
10	4.317E-5	2	LOOPGR :02-06	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	5.000E-4		MCW-XHE-XM-LVL	LEVEL INSTRUMENTS 1-CW-LS-102 / 103 CCF MISCALIBRATED (PSA)
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	

C.2.7 Surry SA2.1 (Case 1) Sequence and Cutset Report

SA2.1 (Case 1) Top 90 Percent Dominant Sequences

LOMFW 11	/RPS, /AFW, PORV, HPI
LOMFW 16	/RPS, AFW, FAB
LOMFW 10	/RPS, /AFW, PORV, /HPI, SSC, CSR
LOMFW 07	/RPS, /AFW, PORV, /HPI, /SSC, RHR, CSR

SA2.1 (Case 1) Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cutset	Description
1	7.752E-6	18.26	LOMFW :11	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	2.280E-5		HPI-MOV-CF-CH1115BD	COMMON CAUSE FAILURE OF SUCTION MOVs 1-CH-MOV-1115B & D
	3.400E-1		HPI-XHE-XM-U2XTIE	OPERATOR FAILS TO CROSSTIE UNIT 2 CHARGING TO UNIT 1
		EndState	->CD	
2	7.048E-6	16.6	LOMFW :11	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	7.048E-6		HPI-MOV-CF-CH1867842	CCF OF HHSI DISCH MOV'S CH-MOV-1867C/D/1842 TO OPEN
		EndState	->CD	
3	3.360E-6	7.91	LOMFW :16	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
4	3.176E-6	7.48	LOMFW :11	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	3.176E-6		CPC-STR-CF-DSSALL	CCF OF CPC STRAINERS 1-DS-S-1A/1B/2A/2B
		EndState	->CD	
5	2.574E-6	6.06	LOMFW :11	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	7.570E-6		HPI-MOV-CF-CH1115CE	COMMON CAUSE FAILURE OF VCT MOVs 1-CH-MOV-1115C & E
	3.400E-1		HPI-XHE-XM-U2XTIE	OPERATOR FAILS TO CROSSTIE UNIT 2 CHARGING TO UNIT 1
		EndState	->CD	
6	2.520E-6	5.93	LOMFW :11	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.500E-2		CPC-MDP-TM-SWP10A	CPC SWS MDP 1-SW-P-10A UNAVAILABLE DUE TO TEST & MAINT
	1.680E-4		CPC-STR-PG-1DSS2B	FAILURE OF CPC STRAINER 1-DS-S-2B
		EndState	->CD	
7	2.520E-6	5.93	LOMFW :11	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER

#	Prob/Freq	Total %	Cutset	Description
	1.500E-2		CPC-MDP-TM-SWP10B	CPC SWS TRAIN 1-SW-P-10B UNAVAILABLE DUE TO T & M
	1.680E-4		CPC-STR-PG-1DSS2A	FAILURE OF CPC STRAINER 1-DS-S-2A
		EndState	->CD	
8	1.632E-6	3.84	LOMFW :11	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	4.800E-6		CVC-HCV-OC-CH1186	HAND CONTROL VALVE 1-CH-HCV-1186 SPURIOUSLY CLOSES (PSA)
	3.400E-1		HPI-XHE-XM-U2XTIE	OPERATOR FAILS TO CROSSTIE UNIT 2 CHARGING TO UNIT 1
		EndState	->CD	
9	1.164E-6	2.74	LOMFW :11	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	5.000E-1		CPC-MDP-10A-RUNNING	CPC MDP-10A IS RUNNING
	2.328E-6		CPC-MDP-CF-SWSFR	COMMON CAUSE FAILURE OF CPC SWS PUMPS TO RUN
		EndState	->CD	
10	1.164E-6	2.74	LOMFW :11	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	5.000E-1		CPC-MDP-10B-RUNNING	CPC MDP-10B IS RUNNING
	2.328E-6		CPC-MDP-CF-SWSFR	COMMON CAUSE FAILURE OF CPC SWS PUMPS TO RUN
		EndState	->CD	
11	1.158E-6	2.73	LOMFW :11	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	3.405E-6		HPI-MDP-CF-RUN	CCF OF HPI PUMPS TO RUN
	3.400E-1		HPI-XHE-XM-U2XTIE	OPERATOR FAILS TO CROSSTIE UNIT 2 CHARGING TO UNIT 1
		EndState	->CD	
12	1.080E-6	2.54	LOMFW :10	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	5.400E-5		CSR-XHE-XR-FLANGE	TEST FLANGES LEFT BLANKED AFTER 1-PT-17.6 (VALUE FROM PSA)
	2.000E-2		OPR-XHE-XM-DEPRCS	OPERATOR FAILS TO COOLDOWN AND DEPRESSURIZE REACTOR
		EndState	->CD	
13	1.000E-6	2.35	LOMFW :10	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	5.000E-5		LPR-SMP-PG-NL	CONTAINMENT RECIRCULATION SUMP PLUGS - Non LOCA
	2.000E-2		OPR-XHE-XM-DEPRCS	OPERATOR FAILS TO COOLDOWN AND DEPRESSURIZE REACTOR
		EndState	->CD	
14	8.999E-7	2.12	LOMFW :11	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	5.000E-1		CPC-MDP-10A-RUNNING	CPC MDP-10A IS RUNNING
	1.200E-4		CPC-MDP-FR-SWP10A	CPC SWS TRAIN 1-SW-P-10A FAILURES TO RUN
	1.500E-2		CPC-MDP-TM-SWP10B	CPC SWS TRAIN 1-SW-P-10B UNAVAILABLE DUE TO T & M
		EndState	->CD	
15	8.999E-7	2.12	LOMFW :11	

#	Prob/Freq	Total %	Cutset	Description
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	5.000E-1		CPC-MDP-10B-RUNNING	CPC MDP-10B IS RUNNING
	1.200E-4		CPC-MDP-FR-SWP10B	CPC SWS TRAIN 1-SW-P-10B FAILURES TO RUN
	1.500E-2		CPC-MDP-TM-SWP10A	CPC SWS MDP 1-SW-P-10A UNAVAILABLE DUE TO TEST & MAINT
		EndState	->CD	
16	6.250E-7	1.47	LOMFW :10	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.250E-4		CSR-XHE-XM-MISCALIB	RWST LEVEL CHANNELS 1-CS-LC-100A/B/C/D MISCALIBRATED
	2.500E-1		HPR-XHE-XM-RECIRC	1-ES-1.3 TRANSFER TO COLD LEG RECIRCULATION
	2.000E-2		OPR-XHE-XM-DEPRCS	OPERATOR FAILS TO COOLDOWN AND DEPRESSURIZE REACTOR
		EndState	->CD	
17	4.992E-7	1.18	LOMFW :07	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	4.992E-7		DCP-BAT-CF-1AB	COMMON CAUSE FAILURE OF UNIT 1 BATTERIES
		EndState	->CD	
18	4.800E-7	1.13	LOMFW :16	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.000E-4		AFW-SYS-LK-SGCKVS	STEAM LEAKAGE THRU CKVS 27.58 & 89 (PSA)
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	

C.2.8 Surry SA2.1 (Case 2) Sequence and Cutset Report

SA2.1 (Case 2) Top 90 Percent Dominant Sequences

TRANS 02-02-15	/RPS, /AFW, /PORV, LOSC, /RCPT, /RSD, /BP1, BP2, HPI, SSC1
TRANS 26	/RPS, AFW, MFW, /FAB, SSCR, CSR
TRANS 27	/RPS, AFW, MFW, FAB
TRANS 02-04-16	/RPS, /AFW, /PORV, LOSC, /RCPT, /RSD, BP1, BP2, HPI, ACC
TRANS 02-02-15	/RPS, /AFW, /PORV, LOSC, /RCPT, /RSD, /BP1, BP2, HPI, SSC1

SA2.1 (Case 2) Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	6.138E-10	12.7	C :02-02-15	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.131E-7		CCW-HTX-CF-ALL	CCW HEAT EXCHANGERS FAIL FROM COMMON CAUSE
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	1.200E-1		OPR-XHE-XM-DEPRCS2	POST LOCA COOLDOWN AND DEPRESSURIZATION

#	Prob/Freq	Total %	Cut Set	Description
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
2	4.287E-10	8.87	TRANS :02-02-15	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-1		CCW-MDP-B-RUNNING	CCW MDP-B IS RUNNING
	2.977E-7		CCW-MDP-CF-FTRALL	COMMON CAUSE FAILURE OF CCW MPDs TO RUN
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	1.200E-1		OPR-XHE-XM-DEPRCS2	POST LOCA COOLDOWN AND DEPRESSURIZATION
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
3	4.287E-10	8.87	TRANS :02-02-15	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-1		CCW-MDP-A-RUNNING	CCW MDP-A IS RUNNING
	2.977E-7		CCW-MDP-CF-FTRALL	COMMON CAUSE FAILURE OF CCW MPDs TO RUN
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	1.200E-1		OPR-XHE-XM-DEPRCS2	POST LOCA COOLDOWN AND DEPRESSURIZATION
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
4	4.193E-10	8.67	TRANS :26	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	7.000E-3		AFW-TDP-FS-1P2	AFW TURBINE DRIVEN PUMP 1-FW-P-2 FAILS TO START
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	4.992E-7		DCP-BAT-CF-1AB	COMMON CAUSE FAILURE OF UNIT 1 BATTERIES
		EndState	->CD	
5	2.995E-10	6.2	TRANS :26	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-3		AFW-TDP-TM-1P2	AFW TDP 1-FW-P-2 UNAVAILABLE DUE TO TEST AND MAINTENANCE
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	4.992E-7		DCP-BAT-CF-1AB	COMMON CAUSE FAILURE OF UNIT 1 BATTERIES
		EndState	->CD	
6	2.457E-10	5.08	TRANS :26	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	4.102E-3		AFW-TDP-FR-1P2	AFW TURBINE DRIVEN PUMP 1-FW-P-2 FAILS TO RUN

#	Prob/Freq	Total %	Cut Set	Description
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	4.992E-7		DCP-BAT-CF-1AB	COMMON CAUSE FAILURE OF UNIT 1 BATTERIES
		EndState	->CD	
7	2.419E-10	5	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.600E-6		ACP-BAC-LP-1J	DIVISION 1J AC POWER 4160V BUS 1J FAILS
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	1.000E+0		DCP-BAT-LP-1BATB4HR	BATTERY 1B 1-EPD-B-1B FAILURE AT 4 HOURS
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
		EndState	->CD	
8	2.419E-10	5	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.600E-6		ACP-BAC-LP-1H	DIVISION 1H AC POWER 4160V BUS 1H FAILS
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	1.000E+0		DCP-BAT-LP-1BATA4HR	BATTERY 1A 1-EPD-B-1A FAILURE AT 4 HOURS
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
		EndState	->CD	
9	1.613E-10	3.34	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	4.800E-5		DCP-BAT-LP-BATTA	FAILURE OF UNIT 1 TRAIN A 125V DC BATTERY
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
10	1.613E-10	3.34	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	4.800E-5		DCP-BAT-LP-BATTB	FAILURE OF UNIT 1 TRAIN B 125V DC BATTERY
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
11	1.382E-10	2.86	TRANS :02-02-15	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT

#	Prob/Freq	Total %	Cut Set	Description
	4.800E-8		CCW-TNK-FC-1CCTK1	UNIT 1 CCW SURGE TANK IS UNAVAILABLE
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	1.200E-1		OPR-XHE-XM-DEPRCS2	POST LOCA COOLDOWN AND DEPRESSURIZATION
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
12	1.059E-10	2.19	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	3.151E-5		CDS-MDP-CF-START	CONDENSATE TRAINS A,B,C COMMON CAUSE FAIL TO START
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
13	6.394E-11	1.32	TRANS :02-04-16	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.131E-7		CCW-HTX-CF-ALL	CCW HEAT EXCHANGERS FAIL FROM COMMON CAUSE
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
14	6.304E-11	1.3	TRANS :02-02-15	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	1.200E-1		OPR-XHE-XM-DEPRCS2	POST LOCA COOLDOWN AND DEPRESSURIZATION
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.189E-8		SWS-MOV-CF-102AB	SWS MOVs 102A/B FAIL FROM COMMON CAUSE
		EndState	->CD	

C.2.9 Surry SA4.1 (Case 1) Sequence and Cutset Report

SA4.1 (Case 1) Top 5 Dominant Sequences

LOCHS 02-02-15	/RPS,/AFW,/PORV,LOSC,/RCPT,/RSD,/BP1,BP2,HPI,SSC1
LOCHS 02-14-16	/RPS,/AFW,/PORV,LOSC,RCPT,HPI,ACC
LOCHS 15	/RPS,AFW,MFW,/FAB,CSR
LOCHS 16	/RPS, AFW, MFW, FAB
LOCHS 05	/RPS,/AFW,PORV,/HPI,CSR

SA4.1 (Case 1) Top 50 Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	6.138E-10	6.7	LOCHS :02-02-15	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	2.131E-7		CCW-HTX-CF-ALL	CCW HEAT EXCHANGERS FAIL FROM COMMON CAUSE
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	1.200E-1		OPR-XHE-XM-DEPRCS2	POST LOCA COOLDOWN AND DEPRESSURIZATION
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
2	5.115E-10	5.59	LOCHS :02-14-16	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	2.131E-7		CCW-HTX-CF-ALL	CCW HEAT EXCHANGERS FAIL FROM COMMON CAUSE
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	2.000E-2		OPR-XHE-XM-TRIP	OPERATOR FAILS TO TRIP THE REACTOR COOLANT PUMPS
3	4.287E-10	4.68	LOCHS :02-02-15	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-1		CCW-MDP-B-RUNNING	CCW MDP-B IS RUNNING
	2.977E-7		CCW-MDP-CF-FTRALL	COMMON CAUSE FAILURE OF CCW MPDs TO RUN
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	1.200E-1		OPR-XHE-XM-DEPRCS2	POST LOCA COOLDOWN AND DEPRESSURIZATION
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
4	4.287E-10	4.68	LOCHS :02-02-15	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-1		CCW-MDP-A-RUNNING	CCW MDP-A IS RUNNING
	2.977E-7		CCW-MDP-CF-FTRALL	COMMON CAUSE FAILURE OF CCW MPDs TO RUN
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	1.200E-1		OPR-XHE-XM-DEPRCS2	POST LOCA COOLDOWN AND DEPRESSURIZATION

#	Prob/Freq	Total %	Cut Set	Description
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
5	4.193E-10	4.58	LOCHS :15	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	7.000E-3		AFW-TDP-FS-1P2	AFW TURBINE DRIVEN PUMP 1-FW-P-2 FAILS TO START
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	4.992E-7		DCP-BAT-CF-1AB	COMMON CAUSE FAILURE OF UNIT 1 BATTERIES
6	3.572E-10	3.9	LOCHS :02-14-16	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-1		CCW-MDP-B-RUNNING	CCW MDP-B IS RUNNING
	2.977E-7		CCW-MDP-CF-FTRALL	COMMON CAUSE FAILURE OF CCW MPDs TO RUN
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	2.000E-2		OPR-XHE-XM-TRIP	OPERATOR FAILS TO TRIP THE REACTOR COOLANT PUMPS
7	3.572E-10	3.9	LOCHS :02-14-16	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-1		CCW-MDP-A-RUNNING	CCW MDP-A IS RUNNING
	2.977E-7		CCW-MDP-CF-FTRALL	COMMON CAUSE FAILURE OF CCW MPDs TO RUN
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	2.000E-2		OPR-XHE-XM-TRIP	OPERATOR FAILS TO TRIP THE REACTOR COOLANT PUMPS
8	2.995E-10	3.27	LOCHS :15	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-3		AFW-TDP-TM-1P2	AFW TDP 1-FW-P-2 UNAVAILABLE DUE TO TEST AND MAINTENANCE
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	4.992E-7		DCP-BAT-CF-1AB	COMMON CAUSE FAILURE OF UNIT 1 BATTERIES
9	2.809E-10	3.07	LOCHS :16	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
	8.360E-5		MFW-MDP-CF-START	FEEDWATER PUMPS FAILS FROM COMMON CAUSE TO START
10	2.457E-10	2.68	LOCHS :15	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	4.102E-3		AFW-TDP-FR-1P2	AFW TURBINE DRIVEN PUMP 1-FW-P-2 FAILS TO RUN

#	Prob/Freq	Total %	Cut Set	Description
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	4.992E-7		DCP-BAT-CF-1AB	COMMON CAUSE FAILURE OF UNIT 1 BATTERIES
11	2.419E-10	2.64	LOCHS :16	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	9.600E-6		ACP-BAC-LP-1H	DIVISION 1H AC POWER 4160V BUS 1H FAILS
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	1.000E+0		DCP-BAT-LP-1BATA4HR	BATTERY 1A 1-EPD-B-1A FAILURE AT 4 HOURS
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
12	2.419E-10	2.64	LOCHS :16	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	9.600E-6		ACP-BAC-LP-1J	DIVISION 1J AC POWER 4160V BUS 1J FAILS
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	1.000E+0		DCP-BAT-LP-1BATB4HR	BATTERY 1B 1-EPD-B-1B FAILURE AT 4 HOURS
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
13	2.304E-10	2.52	LOCHS :16	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	4.800E-8		CDS-TNK-FC-CNTK2	CONDENSATE STORAGE TANK IS UNAVAILABLE
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
14	2.304E-10	2.52	LOCHS :16	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	4.800E-8		CDS-TNK-FC-CNTK1	EMERGENCY CONDENSATE STORAGE TANK IS UNAVAILABLE
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
15	1.944E-10	2.12	LOCHS :05	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.400E-5		CSR-XHE-XR-FLANGE	TEST FLANGES LEFT BLANKED AFTER 1-PT-17.6 (VALUE FROM PSA)
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING

#	Prob/Freq	Total %	Cut Set	Description
	4.000E-2		PPR-SRV-CO-TRAN	PORVs/SRVs OPEN DURING TRANSIENT
	1.000E-3		PPR-SRV-OO-155-1B	FAILURE OF SRV155-1B TO RECLOSE
16	1.944E-10	2.12	LOCHS :05	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.400E-5		CSR-XHE-XR-FLANGE	TEST FLANGES LEFT BLANKED AFTER 1-PT-17.6 (VALUE FROM PSA)
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
	4.000E-2		PPR-SRV-CO-TRAN	PORVs/SRVs OPEN DURING TRANSIENT
	1.000E-3		PPR-SRV-OO-155-1C	FAILURE OF SRV 155-1C TO RECLOSE
17	1.944E-10	2.12	LOCHS :05	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.400E-5		CSR-XHE-XR-FLANGE	TEST FLANGES LEFT BLANKED AFTER 1-PT-17.6 (VALUE FROM PSA)
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
	4.000E-2		PPR-SRV-CO-TRAN	PORVs/SRVs OPEN DURING TRANSIENT
	1.000E-3		PPR-SRV-OO-155-1A	FAILURE OF SRV 155-1A TO RECLOSE
18	1.800E-10	1.97	LOCHS :05	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-5		LPR-SMP-PG-NL	CONTAINMENT RECIRCULATION SUMP PLUGS - Non LOCA
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
	4.000E-2		PPR-SRV-CO-TRAN	PORVs/SRVs OPEN DURING TRANSIENT
	1.000E-3		PPR-SRV-OO-155-1B	FAILURE OF SRV155-1B TO RECLOSE
19	1.800E-10	1.97	LOCHS :05	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-5		LPR-SMP-PG-NL	CONTAINMENT RECIRCULATION SUMP PLUGS - Non LOCA
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
	4.000E-2		PPR-SRV-CO-TRAN	PORVs/SRVs OPEN DURING TRANSIENT
	1.000E-3		PPR-SRV-OO-155-1C	FAILURE OF SRV 155-1C TO RECLOSE
20	1.800E-10	1.97	LOCHS :05	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-5		LPR-SMP-PG-NL	CONTAINMENT RECIRCULATION SUMP PLUGS - Non LOCA
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING

#	Prob/Freq	Total %	Cut Set	Description
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
	4.000E-2		PPR-SRV-CO-TRAN	PORVs/SRVs OPEN DURING TRANSIENT
	1.000E-3		PPR-SRV-OO-155-1A	FAILURE OF SRV 155-1A TO RECLOSE
21	1.613E-10	1.76	LOCHS :16	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	4.800E-5		DCP-BAT-LP-BATTA	FAILURE OF UNIT 1 TRAIN A 125V DC BATTERY
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
22	1.613E-10	1.76	LOCHS :16	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	4.800E-5		DCP-BAT-LP-BATTB	FAILURE OF UNIT 1 TRAIN B 125V DC BATTERY
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
23	1.382E-10	1.51	LOCHS :02-02-15	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	4.800E-8		CCW-TNK-FC-1CCTK1	UNIT 1 CCW SURGE TANK IS UNAVAILABLE
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	1.200E-1		OPR-XHE-XM-DEPRCS2	POST LOCA COOLDOWN AND DEPRESSURIZATION
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
24	1.152E-10	1.26	LOCHS :02-14-16	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	4.800E-8		CCW-TNK-FC-1CCTK1	UNIT 1 CCW SURGE TANK IS UNAVAILABLE
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	2.000E-2		OPR-XHE-XM-TRIP	OPERATOR FAILS TO TRIP THE REACTOR COOLANT PUMPS
25	1.125E-10	1.23	LOCHS :05	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.250E-4		CSR-XHE-XM-MISCALIB	RWST LEVEL CHANNELS 1-CS-LC-100A/B/C/D MISCALIBRATED
	2.500E-1		HPR-XHE-XM-RECIRC	1-ES-1.3 TRANSFER TO COLD LEG RECIRCULATION
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING

#	Prob/Freq	Total %	Cut Set	Description
	4.000E-2		PPR-SRV-CO-TRAN	PORVs/SRVs OPEN DURING TRANSIENT
	1.000E-3		PPR-SRV-OO-155-1C	FAILURE OF SRV 155-1C TO RECLOSE
26	1.125E-10	1.23	LOCHS :05	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.250E-4		CSR-XHE-XM-MISCALIB	RWST LEVEL CHANNELS 1-CS-LC-100A/B/C/D MISCALIBRATED
	2.500E-1		HPR-XHE-XM-RECIRC	1-ES-1.3 TRANSFER TO COLD LEG RECIRCULATION
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
	4.000E-2		PPR-SRV-CO-TRAN	PORVs/SRVs OPEN DURING TRANSIENT
	1.000E-3		PPR-SRV-OO-155-1B	FAILURE OF SRV155-1B TO RECLOSE
27	1.125E-10	1.23	LOCHS :05	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.250E-4		CSR-XHE-XM-MISCALIB	RWST LEVEL CHANNELS 1-CS-LC-100A/B/C/D MISCALIBRATED
	2.500E-1		HPR-XHE-XM-RECIRC	1-ES-1.3 TRANSFER TO COLD LEG RECIRCULATION
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
	4.000E-2		PPR-SRV-CO-TRAN	PORVs/SRVs OPEN DURING TRANSIENT
	1.000E-3		PPR-SRV-OO-155-1A	FAILURE OF SRV 155-1A TO RECLOSE
28	1.059E-10	1.16	LOCHS :16	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	3.151E-5		CDS-MDP-CF-START	CONDENSATE TRAINS A,B,C COMMON CAUSE FAIL TO START
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
29	8.830E-11	0.96	LOCHS :16	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	2.628E-5		CDS-AOV-CF-102AB	HOTWELL LEVEL CONTROL VALVES FAIL FROM COMMON CAUSE
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
30	6.394E-11	0.7	LOCHS :02-04-16	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	2.131E-7		CCW-HTX-CF-ALL	CCW HEAT EXCHANGERS FAIL FROM COMMON CAUSE

#	Prob/Freq	Total %	Cut Set	Description
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
31	4.466E-11	0.49	LOCHS :02-04-16	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-1		CCW-MDP-B-RUNNING	CCW MDP-B IS RUNNING
	2.977E-7		CCW-MDP-CF-FTRALL	COMMON CAUSE FAILURE OF CCW MPDs TO RUN
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
32	4.466E-11	0.49	LOCHS :02-04-16	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.000E-1		CCW-MDP-A-RUNNING	CCW MDP-A IS RUNNING
	2.977E-7		CCW-MDP-CF-FTRALL	COMMON CAUSE FAILURE OF CCW MPDs TO RUN
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
33	4.193E-11	0.46	LOCHS :15	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	4.992E-7		DCP-BAT-CF-1AB	COMMON CAUSE FAILURE OF UNIT 1 BATTERIES
34	4.013E-11	0.44	LOCHS :16	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.000E-4		AFW-SYS-LK-SGCKVS	STEAM LEAKAGE THRU CKVS 27.58 & 89 (PSA)
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
	8.360E-5		MFW-MDP-CF-START	FEEDWATER PUMPS FAILS FROM COMMON CAUSE TO START
35	3.974E-11	0.43	LOCHS :05	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	4.416E-5		CSR-LIC-CF-100ABCD	RWST LEVEL CHANNEL 1CS-LIC-100A LOSS OF FUNCTION (PSA)

#	Prob/Freq	Total %	Cut Set	Description
	2.500E-1		HPR-XHE-XM-RECIRC	1-ES-1.3 TRANSFER TO COLD LEG RECIRCULATION
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
	4.000E-2		PPR-SRV-CO-TRAN	PORVs/SRVs OPEN DURING TRANSIENT
	1.000E-3		PPR-SRV-OO-155-1C	FAILURE OF SRV 155-1C TO RECLOSE
36	3.974E-11	0.43	LOCHS :05	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	4.416E-5		CSR-LIC-CF-100ABCD	RWST LEVEL CHANNEL 1CS-LIC-100A LOSS OF FUNCTION (PSA)
	2.500E-1		HPR-XHE-XM-RECIRC	1-ES-1.3 TRANSFER TO COLD LEG RECIRCULATION
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
	4.000E-2		PPR-SRV-CO-TRAN	PORVs/SRVs OPEN DURING TRANSIENT
	1.000E-3		PPR-SRV-OO-155-1B	FAILURE OF SRV155-1B TO RECLOSE
37	3.974E-11	0.43	LOCHS :05	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	4.416E-5		CSR-LIC-CF-100ABCD	RWST LEVEL CHANNEL 1CS-LIC-100A LOSS OF FUNCTION (PSA)
	2.500E-1		HPR-XHE-XM-RECIRC	1-ES-1.3 TRANSFER TO COLD LEG RECIRCULATION
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
	4.000E-2		PPR-SRV-CO-TRAN	PORVs/SRVs OPEN DURING TRANSIENT
	1.000E-3		PPR-SRV-OO-155-1A	FAILURE OF SRV 155-1A TO RECLOSE
38	3.600E-11	0.39	LOCHS :04	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.000E-3		HPR-MOV-OO-CH1115D	RWST ISOLATION MOV 1-CH-LCV-1115D FAILS TO CLOSE
	1.000E-2		HPR-XHE-XM-CH1115D	UNDEVELOPED EVENT TO MANUALLY CLOSE 1-CH-LCV-1115D OR ALT ALIGN
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
	4.000E-2		PPR-SRV-CO-TRAN	PORVs/SRVs OPEN DURING TRANSIENT
	1.000E-3		PPR-SRV-OO-155-1A	FAILURE OF SRV 155-1A TO RECLOSE
39	3.600E-11	0.39	LOCHS :04	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.000E-3		HPR-MOV-OO-CH1115D	RWST ISOLATION MOV 1-CH-LCV-1115D FAILS TO CLOSE

#	Prob/Freq	Total %	Cut Set	Description
	1.000E-2		HPR-XHE-XM-CH1115D	UNDEVELOPED EVENT TO MANUALLY CLOSE 1-CH-LCV-1115D OR ALT ALIGN
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
	4.000E-2		PPR-SRV-CO-TRAN	PORVs/SRVs OPEN DURING TRANSIENT
	1.000E-3		PPR-SRV-OO-155-1C	FAILURE OF SRV 155-1C TO RECLOSE
40	3.600E-11	0.39	LOCHS :04	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.000E-3		HPR-MOV-OO-CH1115D	RWST ISOLATION MOV 1-CH-LCV-1115D FAILS TO CLOSE
	1.000E-2		HPR-XHE-XM-CH1115D	UNDEVELOPED EVENT TO MANUALLY CLOSE 1-CH-LCV-1115D OR ALT ALIGN
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
	4.000E-2		PPR-SRV-CO-TRAN	PORVs/SRVs OPEN DURING TRANSIENT
	1.000E-3		PPR-SRV-OO-155-1B	FAILURE OF SRV155-1B TO RECLOSE
41	3.600E-11	0.39	LOCHS :04	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.000E-3		HPR-MOV-OO-CH1115B	RWST ISOLATION MOV 1-CH-LCV-1115B FAILS TO CLOSE
	1.000E-2		HPR-XHE-XM-CH1115B	UNDEVELOPED EVENT TO MANUALLY CLOSE 1-CH-LCV-1115B OR ALT ALIGN
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
	4.000E-2		PPR-SRV-CO-TRAN	PORVs/SRVs OPEN DURING TRANSIENT
	1.000E-3		PPR-SRV-OO-155-1A	FAILURE OF SRV 155-1A TO RECLOSE
42	3.600E-11	0.39	LOCHS :04	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.000E-3		HPR-MOV-OO-CH1115B	RWST ISOLATION MOV 1-CH-LCV-1115B FAILS TO CLOSE
	1.000E-2		HPR-XHE-XM-CH1115B	UNDEVELOPED EVENT TO MANUALLY CLOSE 1-CH-LCV-1115B OR ALT ALIGN
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
	4.000E-2		PPR-SRV-CO-TRAN	PORVs/SRVs OPEN DURING TRANSIENT
	1.000E-3		PPR-SRV-OO-155-1C	FAILURE OF SRV 155-1C TO RECLOSE
43	3.600E-11	0.39	LOCHS :04	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.000E-3		HPR-MOV-OO-CH1115B	RWST ISOLATION MOV 1-CH-LCV-1115B FAILS TO CLOSE

#	Prob/Freq	Total %	Cut Set	Description
	1.000E-2		HPR-XHE-XM-CH1115B	UNDEVELOPED EVENT TO MANUALLY CLOSE 1-CH-LCV-1115B OR ALT ALIGN
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
	4.000E-2		PPR-SRV-CO-TRAN	PORVs/SRVs OPEN DURING TRANSIENT
	1.000E-3		PPR-SRV-OO-155-1B	FAILURE OF SRV155-1B TO RECLOSE
44	3.580E-11	0.39	LOCHS :02-02-15	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	2.131E-7		CCW-HTX-CF-ALL	CCW HEAT EXCHANGERS FAIL FROM COMMON CAUSE
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	7.000E-3		MSS-ADV-CC-101C	FAILURE OF STEAM GENERATOR C ADV 1-MS-SV-101C
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
45	3.580E-11	0.39	LOCHS :02-02-15	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	2.131E-7		CCW-HTX-CF-ALL	CCW HEAT EXCHANGERS FAIL FROM COMMON CAUSE
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	7.000E-3		MSS-ADV-CC-101B	FAILURE OF STEAM GENERATOR B ADV 1-MS-SV-101B
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
46	3.580E-11	0.39	LOCHS :02-02-15	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	2.131E-7		CCW-HTX-CF-ALL	CCW HEAT EXCHANGERS FAIL FROM COMMON CAUSE
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	7.000E-3		MSS-ADV-CC-101A	FAILURE OF STEAM GENERATOR A ADV 1-MS-SV-101A
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
47	3.456E-11	0.38	LOCHS :16	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	9.600E-6		ACP-BAC-LP-1J	DIVISION 1J AC POWER 4160V BUS 1J FAILS
	1.000E-4		AFW-SYS-LK-SGCKVS	STEAM LEAKAGE THRU CKVS 27.58 & 89 (PSA)
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	1.000E+0		DCP-BAT-LP-1BATB4HR	BATTERY 1B 1-EPD-B-1B FAILURE AT 4 HOURS

#	Prob/Freq	Total %	Cut Set	Description
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
48	3.456E-11	0.38	LOCHS :16	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	9.600E-6		ACP-BAC-LP-1H	DIVISION 1H AC POWER 4160V BUS 1H FAILS
	1.000E-4		AFW-SYS-LK-SGCKVS	STEAM LEAKAGE THRU CKVS 27.58 & 89 (PSA)
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	1.000E+0		DCP-BAT-LP-1BATA4HR	BATTERY 1A 1-EPD-B-1A FAILURE AT 4 HOURS
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
49	3.226E-11	0.35	LOCHS :16	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	9.600E-6		ACP-BAC-LP-1H	DIVISION 1H AC POWER 4160V BUS 1H FAILS
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
50	3.226E-11	0.35	LOCHS :16	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	9.600E-6		ACP-BAC-LP-1J	DIVISION 1J AC POWER 4160V BUS 1J FAILS
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING

C.2.10 Surry SA4.1 (Case 2) Sequence and Cutset Report

SA4.1 (Case 2) Top 90 Percent Dominant Sequence

LOCHS 16	/RPS, AFW, MFW, FAB

SA4.1 (Case 2) Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	6.144E-6	87.5	LOCHS :16	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	7.896E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	2.000E-2		CDS-XHE-XM-LVL	Operator Fails to Maintain Hotwell Level - (Added for loss of indicators)
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED

	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
2	8.777E-7	12.5	LOCHS :16	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.000E-4		AFW-SYS-LK-SGCKVS	STEAM LEAKAGE THRU CKVS 27.58 & 89 (PSA)
	7.896E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	2.000E-2		CDS-XHE-XM-LVL	Operator Fails to Maintain Hotwell Level - (Added for loss of indicators)
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	

C.2.11 Surry SA4.1 (Case 3) Sequence and Cutset Report

SA4.1 (Case 3) Top 90 Percent Dominant Sequence

LOMFW 16	/RPS, AFW, FAB

SA4.1 (Case 3) Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	3.360E-6	87.5	LOMFW :16	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
2	4.800E-7	12.5	LOMFW :16	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.000E-4		AFW-SYS-LK-SGCKVS	STEAM LEAKAGE THRU CKVS 27.58 & 89 (PSA)
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	

C.2.12 Surry SA4.1 (Case 4) Sequence and Cutset Report

SA4.1 (Case 4) Top 90 Percent Dominant Sequence

LOMFW 16	/RPS, AFW, FAB

SA4.1 (Case 4) Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	3.072E-4	87.5	LOMFW :16	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	7.896E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
2	4.389E-5	12.5	LOMFW :16	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.000E-4		AFW-SYS-LK-SGCKVS	STEAM LEAKAGE THRU CKVS 27.58 & 89 (PSA)
	7.896E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	

C.2.13 Surry SA4.1 (Case 5) Sequence and Cutset Report

SA4.1 (Case 5) Top 5 Dominant Sequences

TRANS 02-02-15	/RPS,/AFW,/PORV,LOCS,/RCPT,/RSD,/BP1,BP2,HPI,SSC1
TRANS 02-14-16	/RPS,/AFW,/PORV,LOSC,RCPT,HPI,ACC
TRANS 26	/RPS,AFW,MFW,/FAB,SSCR,CSR
TRANS 27	/RPS,AFW,MFW,/FAB

SA4.1 (Case 5) Top 50 Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	6.138E-10	10.34	TRANS :02-02-15	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.131E-7		CCW-HTX-CF-ALL	CCW HEAT EXCHANGERS FAIL FROM COMMON CAUSE
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	1.200E-1		OPR-XHE-XM-DEPRCS2	POST LOCA COOLDOWN AND DEPRESSURIZATION
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS

#	Prob/Freq	Total %	Cut Set	Description
		EndState	->CD	
2	5.115E-10	8.62	TRANS :02-14-16	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.131E-7		CCW-HTX-CF-ALL	CCW HEAT EXCHANGERS FAIL FROM COMMON CAUSE
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	2.000E-2		OPR-XHE-XM-TRIP	OPERATOR FAILS TO TRIP THE REACTOR COOLANT PUMPS
		EndState	->CD	
3	4.287E-10	7.22	TRANS :02-02-15	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-1		CCW-MDP-B-RUNNING	CCW MDP-B IS RUNNING
	2.977E-7		CCW-MDP-CF-FTRALL	COMMON CAUSE FAILURE OF CCW MPDs TO RUN
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	1.200E-1		OPR-XHE-XM-DEPRCS2	POST LOCA COOLDOWN AND DEPRESSURIZATION
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
4	4.287E-10	7.22	TRANS :02-02-15	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-1		CCW-MDP-A-RUNNING	CCW MDP-A IS RUNNING
	2.977E-7		CCW-MDP-CF-FTRALL	COMMON CAUSE FAILURE OF CCW MPDs TO RUN
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	1.200E-1		OPR-XHE-XM-DEPRCS2	POST LOCA COOLDOWN AND DEPRESSURIZATION
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
5	4.193E-10	7.06	TRANS :26	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	7.000E-3		AFW-TDP-FS-1P2	AFW TURBINE DRIVEN PUMP 1-FW-P-2 FAILS TO START
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	4.992E-7		DCP-BAT-CF-1AB	COMMON CAUSE FAILURE OF UNIT 1 BATTERIES
		EndState	->CD	
6	3.572E-10	6.02	TRANS :02-14-16	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-1		CCW-MDP-B-RUNNING	CCW MDP-B IS RUNNING
	2.977E-7		CCW-MDP-CF-FTRALL	COMMON CAUSE FAILURE OF CCW MPDs TO RUN

#	Prob/Freq	Total %	Cut Set	Description
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	2.000E-2		OPR-XHE-XM-TRIP	OPERATOR FAILS TO TRIP THE REACTOR COOLANT PUMPS
		EndState	->CD	
7	3.572E-10	6.02	TRANS :02-14-16	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-1		CCW-MDP-A-RUNNING	CCW MDP-A IS RUNNING
	2.977E-7		CCW-MDP-CF-FTRALL	COMMON CAUSE FAILURE OF CCW MPDs TO RUN
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	2.000E-2		OPR-XHE-XM-TRIP	OPERATOR FAILS TO TRIP THE REACTOR COOLANT PUMPS
		EndState	->CD	
8	2.995E-10	5.05	TRANS :26	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-3		AFW-TDP-TM-1P2	AFW TDP 1-FW-P-2 UNAVAILABLE DUE TO TEST AND MAINTENANCE
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	4.992E-7		DCP-BAT-CF-1AB	COMMON CAUSE FAILURE OF UNIT 1 BATTERIES
		EndState	->CD	
9	2.457E-10	4.14	TRANS :26	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	4.102E-3		AFW-TDP-FR-1P2	AFW TURBINE DRIVEN PUMP 1-FW-P-2 FAILS TO RUN
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	4.992E-7		DCP-BAT-CF-1AB	COMMON CAUSE FAILURE OF UNIT 1 BATTERIES
		EndState	->CD	
10	2.419E-10	4.08	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.600E-6		ACP-BAC-LP-1J	DIVISION 1J AC POWER 4160V BUS 1J FAILS
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	1.000E+0		DCP-BAT-LP-1BATB4HR	BATTERY 1B 1-EPD-B-1B FAILURE AT 4 HOURS
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
		EndState	->CD	
11	2.419E-10	4.08	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.600E-6		ACP-BAC-LP-1H	DIVISION 1H AC POWER 4160V BUS 1H FAILS

#	Prob/Freq	Total %	Cut Set	Description
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	1.000E+0		DCP-BAT-LP-1BATA4HR	BATTERY 1A 1-EPD-B-1A FAILURE AT 4 HOURS
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
		EndState	->CD	
12	1.613E-10	2.72	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	4.800E-5		DCP-BAT-LP-BATTA	FAILURE OF UNIT 1 TRAIN A 125V DC BATTERY
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
13	1.613E-10	2.72	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	4.800E-5		DCP-BAT-LP-BATTB	FAILURE OF UNIT 1 TRAIN B 125V DC BATTERY
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
14	1.382E-10	2.33	TRANS :02-02-15	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	4.800E-8		CCW-TNK-FC-1CCTK1	UNIT 1 CCW SURGE TANK IS UNAVAILABLE
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	1.200E-1		OPR-XHE-XM-DEPRCS2	POST LOCA COOLDOWN AND DEPRESSURIZATION
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
15	1.152E-10	1.94	TRANS :02-14-16	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	4.800E-8		CCW-TNK-FC-1CCTK1	UNIT 1 CCW SURGE TANK IS UNAVAILABLE
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	2.000E-2		OPR-XHE-XM-TRIP	OPERATOR FAILS TO TRIP THE REACTOR COOLANT PUMPS
		EndState	->CD	

#	Prob/Freq	Total %	Cut Set	Description
16	1.059E-10	1.78	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	3.151E-5		CDS-MDP-CF-START	CONDENSATE TRAINS A,B,C COMMON CAUSE FAIL TO START
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
17	6.394E-11	1.08	TRANS :02-04-16	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.131E-7		CCW-HTX-CF-ALL	CCW HEAT EXCHANGERS FAIL FROM COMMON CAUSE
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
18	4.466E-11	0.75	TRANS :02-04-16	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-1		CCW-MDP-B-RUNNING	CCW MDP-B IS RUNNING
	2.977E-7		CCW-MDP-CF-FTRALL	COMMON CAUSE FAILURE OF CCW MPDs TO RUN
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
19	4.466E-11	0.75	TRANS :02-04-16	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-1		CCW-MDP-A-RUNNING	CCW MDP-A IS RUNNING
	2.977E-7		CCW-MDP-CF-FTRALL	COMMON CAUSE FAILURE OF CCW MPDs TO RUN
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
20	4.193E-11	0.71	TRANS :26	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT

#	Prob/Freq	Total %	Cut Set	Description
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	4.992E-7		DCP-BAT-CF-1AB	COMMON CAUSE FAILURE OF UNIT 1 BATTERIES
		EndState	->CD	
21	3.456E-11	0.58	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.600E-6		ACP-BAC-LP-1H	DIVISION 1H AC POWER 4160V BUS 1H FAILS
	1.000E-4		AFW-SYS-LK-SGCKVS	STEAM LEAKAGE THRU CKVS 27.58 & 89 (PSA)
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	1.000E+0		DCP-BAT-LP-1BATA4HR	BATTERY 1A 1-EPD-B-1A FAILURE AT 4 HOURS
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
		EndState	->CD	
22	3.456E-11	0.58	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.600E-6		ACP-BAC-LP-1J	DIVISION 1J AC POWER 4160V BUS 1J FAILS
	1.000E-4		AFW-SYS-LK-SGCKVS	STEAM LEAKAGE THRU CKVS 27.58 & 89 (PSA)
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	1.000E+0		DCP-BAT-LP-1BATB4HR	BATTERY 1B 1-EPD-B-1B FAILURE AT 4 HOURS
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
		EndState	->CD	
23	3.226E-11	0.54	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.600E-6		ACP-BAC-LP-1H	DIVISION 1H AC POWER 4160V BUS 1H FAILS
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
24	3.226E-11	0.54	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.600E-6		ACP-BAC-LP-1J	DIVISION 1J AC POWER 4160V BUS 1J FAILS
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED

#	Prob/Freq	Total %	Cut Set	Description
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
25	3.226E-11	0.54	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	9.600E-6		DCP-BDC-LP-1B	FAILURE OF 125V DC BUS 1B
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
26	3.226E-11	0.54	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	9.600E-6		DCP-BDC-LP-1A	FAILURE OF 125V DC BUS 1A
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
27	3.069E-11	0.52	TRANS :02-03-15	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.131E-7		CCW-HTX-CF-ALL	CCW HEAT EXCHANGERS FAIL FROM COMMON CAUSE
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	1.200E-1		OPR-XHE-XM-DEPRCS2	POST LOCA COOLDOWN AND DEPRESSURIZATION
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
28	2.791E-11	0.47	TRANS :11	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.280E-5		HPI-MOV-CF-CH1115BD	COMMON CAUSE FAILURE OF SUCTION MOVs 1-CH-MOV-1115B & D
	3.400E-1		HPI-XHE-XM-U2XTIE	OPERATOR FAILS TO CROSSTIE UNIT 2 CHARGING TO UNIT 1
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
	4.000E-2		PPR-SRV-CO-TRAN	PORVs/SRVs OPEN DURING TRANSIENT
	1.000E-3		PPR-SRV-OO-155-1A	FAILURE OF SRV 155-1A TO

#	Prob/Freq	Total %	Cut Set	Description
				RECLOSE
		EndState	->CD	
29	2.791E-11	0.47	TRANS :11	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.280E-5		HPI-MOV-CF-CH1115BD	COMMON CAUSE FAILURE OF SUCTION MOVs 1-CH-MOV-1115B & D
	3.400E-1		HPI-XHE-XM-U2XTIE	OPERATOR FAILS TO CROSSTIE UNIT 2 CHARGING TO UNIT 1
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
	4.000E-2		PPR-SRV-CO-TRAN	PORVs/SRVs OPEN DURING TRANSIENT
	1.000E-3		PPR-SRV-OO-155-1C	FAILURE OF SRV 155-1C TO RECLOSE
		EndState	->CD	
30	2.791E-11	0.47	TRANS :11	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.280E-5		HPI-MOV-CF-CH1115BD	COMMON CAUSE FAILURE OF SUCTION MOVs 1-CH-MOV-1115B & D
	3.400E-1		HPI-XHE-XM-U2XTIE	OPERATOR FAILS TO CROSSTIE UNIT 2 CHARGING TO UNIT 1
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
	4.000E-2		PPR-SRV-CO-TRAN	PORVs/SRVs OPEN DURING TRANSIENT
	1.000E-3		PPR-SRV-OO-155-1B	FAILURE OF SRV155-1B TO RECLOSE
		EndState	->CD	
31	2.537E-11	0.43	TRANS :11	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	7.048E-6		HPI-MOV-CF-CH1867842	CCF OF HHSI DISCH MOV'S CH-MOV-1867C/D/1842 TO OPEN
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
	4.000E-2		PPR-SRV-CO-TRAN	PORVs/SRVs OPEN DURING TRANSIENT
	1.000E-3		PPR-SRV-OO-155-1B	FAILURE OF SRV155-1B TO RECLOSE
		EndState	->CD	
32	2.537E-11	0.43	TRANS :11	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	7.048E-6		HPI-MOV-CF-CH1867842	CCF OF HHSI DISCH MOV'S CH-MOV-1867C/D/1842 TO OPEN

#	Prob/Freq	Total %	Cut Set	Description
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
	4.000E-2		PPR-SRV-CO-TRAN	PORVs/SRVs OPEN DURING TRANSIENT
	1.000E-3		PPR-SRV-OO-155-1C	FAILURE OF SRV 155-1C TO RECLOSE
		EndState	->CD	
33	2.537E-11	0.43	TRANS :11	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	7.048E-6		HPI-MOV-CF-CH1867842	CCF OF HHSI DISCH MOV'S CH-MOV-1867C/D/1842 TO OPEN
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
	4.000E-2		PPR-SRV-CO-TRAN	PORVs/SRVs OPEN DURING TRANSIENT
	1.000E-3		PPR-SRV-OO-155-1A	FAILURE OF SRV 155-1A TO RECLOSE
		EndState	->CD	
34	2.317E-11	0.39	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	3.000E-2		AFW-XHE-XM-CNTRL1	OPERATOR FAILS TO CONTROL AFW TDP FLOW GIVEN SBO AND LOSS OF INST. AIR
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	1.000E-3		CHW-XHE-XE-BCKUP	OPERATOR FAILS TO ALIGN BACKUP CHILLED WATER SUPPLY
	1.000E+0		DCP-BAT-LP-1BATA4HR	BATTERY 1A 1-EPD-B-1A FAILURE AT 4 HOURS
	1.000E+0		DCP-BAT-LP-1BATB4HR	BATTERY 1B 1-EPD-B-1B FAILURE AT 4 HOURS
	6.435E-6		SWS-STR-CF-ALL	CCF OF SERVICE WATER PUMP STRAINERS - ESGR
		EndState	->CD	
35	2.317E-11	0.39	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	3.000E-2		AFW-XHE-XM-CNTRL1	OPERATOR FAILS TO CONTROL AFW TDP FLOW GIVEN SBO AND LOSS OF INST. AIR
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	1.000E-3		CHW-XHE-XE-BCKUP	OPERATOR FAILS TO ALIGN BACKUP CHILLED WATER SUPPLY
	1.000E+0		DCP-BAT-LP-1BATA4HR	BATTERY 1A 1-EPD-B-1A FAILURE AT 4 HOURS
	1.000E+0		DCP-BAT-LP-1BATB4HR	BATTERY 1B 1-EPD-B-1B FAILURE AT 4 HOURS
	6.435E-6		ESR-STR-CF-VSP2ABC	CCF OF MDP 1-VS-P-2A/B/c STRAINERS

#	Prob/Freq	Total %	Cut Set	Description
		EndState	->CD	
36	2.304E-11	0.39	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.000E-4		AFW-SYS-LK-SGCKVS	STEAM LEAKAGE THRU CKVS 27.58 & 89 (PSA)
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	4.800E-5		DCP-BAT-LP-BATTA	FAILURE OF UNIT 1 TRAIN A 125V DC BATTERY
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
37	2.304E-11	0.39	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.000E-4		AFW-SYS-LK-SGCKVS	STEAM LEAKAGE THRU CKVS 27.58 & 89 (PSA)
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	4.800E-5		DCP-BAT-LP-BATTB	FAILURE OF UNIT 1 TRAIN B 125V DC BATTERY
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
38	2.143E-11	0.36	TRANS :02-03-15	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-1		CCW-MDP-B-RUNNING	CCW MDP-B IS RUNNING
	2.977E-7		CCW-MDP-CF-FTRALL	COMMON CAUSE FAILURE OF CCW MPDs TO RUN
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	1.200E-1		OPR-XHE-XM-DEPRCS2	POST LOCA COOLDOWN AND DEPRESSURIZATION
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
39	2.143E-11	0.36	TRANS :02-03-15	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-1		CCW-MDP-A-RUNNING	CCW MDP-A IS RUNNING
	2.977E-7		CCW-MDP-CF-FTRALL	COMMON CAUSE FAILURE OF CCW MPDs TO RUN
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	1.200E-1		OPR-XHE-XM-DEPRCS2	POST LOCA COOLDOWN AND DEPRESSURIZATION
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS

#	Prob/Freq	Total %	Cut Set	Description
		EndState	->CD	
40	1.677E-11	0.28	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	7.000E-3		AFW-TDP-FS-1P2	AFW TURBINE DRIVEN PUMP 1-FW-P-2 FAILS TO START
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	4.992E-7		DCP-BAT-CF-1AB	COMMON CAUSE FAILURE OF UNIT 1 BATTERIES
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
41	1.622E-11	0.27	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	3.000E-2		AFW-XHE-XM-CNTRL1	OPERATOR FAILS TO CONTROL AFW TDP FLOW GIVEN SBO AND LOSS OF INST. AIR
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CHW-XVM-CC-VS251	FAILURE OF MANUAL VALVE 1-VS-251 TO OPEN
	1.000E+0		DCP-BAT-LP-1BATA4HR	BATTERY 1A 1-EPD-B-1A FAILURE AT 4 HOURS
	1.000E+0		DCP-BAT-LP-1BATB4HR	BATTERY 1B 1-EPD-B-1B FAILURE AT 4 HOURS
	6.435E-6		SWS-STR-CF-ALL	CCF OF SERVICE WATER PUMP STRAINERS - ESGR
		EndState	->CD	
42	1.622E-11	0.27	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	3.000E-2		AFW-XHE-XM-CNTRL1	OPERATOR FAILS TO CONTROL AFW TDP FLOW GIVEN SBO AND LOSS OF INST. AIR
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CHW-XVM-CC-VS247	FAILURE OF MANUAL VALVE 1-VS-247 TO OPEN
	1.000E+0		DCP-BAT-LP-1BATA4HR	BATTERY 1A 1-EPD-B-1A FAILURE AT 4 HOURS
	1.000E+0		DCP-BAT-LP-1BATB4HR	BATTERY 1B 1-EPD-B-1B FAILURE AT 4 HOURS
	6.435E-6		SWS-STR-CF-ALL	CCF OF SERVICE WATER PUMP STRAINERS - ESGR
		EndState	->CD	
43	1.622E-11	0.27	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	3.000E-2		AFW-XHE-XM-CNTRL1	OPERATOR FAILS TO CONTROL AFW TDP FLOW GIVEN SBO AND LOSS OF INST. AIR
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CHW-XVM-CC-VS251	FAILURE OF MANUAL VALVE 1-VS-251 TO OPEN

#	Prob/Freq	Total %	Cut Set	Description
	1.000E+0		DCP-BAT-LP-1BATA4HR	BATTERY 1A 1-EPD-B-1A FAILURE AT 4 HOURS
	1.000E+0		DCP-BAT-LP-1BATB4HR	BATTERY 1B 1-EPD-B-1B FAILURE AT 4 HOURS
	6.435E-6		ESR-STR-CF-VSP2ABC	CCF OF MDP 1-VS-P-2A/B/c STRAINERS
		EndState	->CD	
44	1.622E-11	0.27	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	3.000E-2		AFW-XHE-XM-CNTRL1	OPERATOR FAILS TO CONTROL AFW TDP FLOW GIVEN SBO AND LOSS OF INST. AIR
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CHW-XVM-CC-VS247	FAILURE OF MANUAL VALVE 1-VS-247 TO OPEN
	1.000E+0		DCP-BAT-LP-1BATA4HR	BATTERY 1A 1-EPD-B-1A FAILURE AT 4 HOURS
	1.000E+0		DCP-BAT-LP-1BATB4HR	BATTERY 1B 1-EPD-B-1B FAILURE AT 4 HOURS
	6.435E-6		ESR-STR-CF-VSP2ABC	CCF OF MDP 1-VS-P-2A/B/c STRAINERS
		EndState	->CD	
45	1.513E-11	0.25	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.000E-4		AFW-SYS-LK-SGCKVS	STEAM LEAKAGE THRU CKVS 27.58 & 89 (PSA)
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	3.151E-5		CDS-MDP-CF-START	CONDENSATE TRAINS A,B,C COMMON CAUSE FAIL TO START
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
46	1.440E-11	0.24	TRANS :02-04-16	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	4.800E-8		CCW-TNK-FC-1CCTK1	UNIT 1 CCW SURGE TANK IS UNAVAILABLE
	1.200E-1		HPI-XHE-XM-RWST	OPERATOR FAILS TO ALIGN CHARGING SUCTION TO RWST ON LOSS OF CCW
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
47	1.210E-11	0.2	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.600E-6		ACP-BAC-LP-1J	DIVISION 1J AC POWER 4160V BUS 1J FAILS
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS

#	Prob/Freq	Total %	Cut Set	Description
				CLOSED
	1.500E-2		CPC-MDP-TM-SWP10A	CPC SWS MDP 1-SW-P-10A UNAVAILABLE DUE TO TEST & MAINT
		EndState	->CD	
48	1.210E-11	0.2	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.600E-6		ACP-BAC-LP-1H	DIVISION 1H AC POWER 4160V BUS 1H FAILS
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	1.500E-2		CPC-MDP-TM-SWP10B	CPC SWS TRAIN 1-SW-P-10B UNAVAILABLE DUE TO T & M
		EndState	->CD	
49	1.198E-11	0.2	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.000E-3		AFW-TDP-TM-1P2	AFW TDP 1-FW-P-2 UNAVAILABLE DUE TO TEST AND MAINTENANCE
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	4.992E-7		DCP-BAT-CF-1AB	COMMON CAUSE FAILURE OF UNIT 1 BATTERIES
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
50	1.153E-11	0.19	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.160E-5		ACP-TFM-FC-RST1C	RSS TRANSFORMER C 1-EP-RST-1C LOSS OF FUNCTION
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	1.000E+0		DCP-BAT-LP-1BATA4HR	BATTERY 1A 1-EPD-B-1A FAILURE AT 4 HOURS
	2.118E-2		EPS-DGN-FR-DG1	DIESEL GENERATOR 1 FAILS TO RUN
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
		EndState	->CD	

C.2.14 Surry SA4.1 (Case 6) Sequence and Cutset Report

SA4.1 (Case 6) Top 90 Percent Dominant Sequence

TRANS 27	/RPS,AFW,MFW,FAB

SA4.1 (Case 6) Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	6.144E-6	87.5	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	7.896E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	2.000E-2		CDS-XHE-XM-LVL	Operator Fails to Maintain Hotwell Level - (Added for loss of indicators)
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
2	8.777E-7	12.5	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.000E-4		AFW-SYS-LK-SGCKVS	STEAM LEAKAGE THRU CKVS 27.58 & 89 (PSA)
	7.896E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	2.000E-2		CDS-XHE-XM-LVL	Operator Fails to Maintain Hotwell Level - (Added for loss of indicators)
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	

C.2.15 Surry HA3.1 (Case 1) Sequence and Cutset Report

HA3.1 Top 5 Dominant Sequence

LOOPGR 02-06	/RPS-L,/EPS,/AFW-L,/PORV-L,LOSC-L,/RSD,/BP1,BP2,OPR-02H,HPI-L
LOOPWR 02-06	/RPS-L,/EPS,/AFW-L,/PORV-L,LOSC-L,/RSD,/BP1,BP2,OPR-02H,HPI-L
LOOPSC 02-06	/RPS-L,/EPS,/AFW-L,/PORV-L,LOSC-L,/RSD,/BP1,BP2,OPR-02H,HPI-L
LOMFW 16	/RPS, AFW, FAB
LOOPSC 16	/RPS-L,/EPS,AFW-L,FAB-L

HA3.1 (Case 1) Top 50 Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	1.324E-6	5.26	LOOPGR :02-06	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.000E-3		MCW-MOV-OO-106B	CONDENSER INLET MOV1-CW-MOV-106B FAILS OPEN
	3.560E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
2	1.324E-6	5.26	LOOPGR :02-06	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.000E-3		MCW-MOV-OO-100A	CONDENSER OUTLET 1-CW-MOV-100A FAILS OPEN
	3.560E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
3	1.324E-6	5.26	LOOPGR :02-06	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.000E-3		MCW-MOV-OO-100C	CONDENSER OUTLET 1-CW-MOV-100CD FAILS OPEN
	3.560E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
4	1.324E-6	5.26	LOOPGR :02-06	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.560E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	5.000E-1		SWS-101A-OPEN	PROBABILITY OF 1-SW-MOV-101A ALIGNED OPEN
	2.000E-3		SWS-XHE-XM-ISOL	FAILURE TO VERIFY/ISOLATE SWS/CW INLET MOVs (AP-12, STEP 11)
		EndState	->CD	
5	1.324E-6	5.26	LOOPGR :02-06	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)

#	Prob/Freq	Total %	Cut Set	Description
	1.000E-3		MCW-MOV-OO-106D	CONDENSER INLET MOV1-CW-MOV-106D FAILS OPEN
	3.560E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
6	1.189E-6	4.72	LOOPGR :02-06	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.000E+0		DCP-BAT-LP-1BATA4HR	BATTERY 1A 1-EPD-B-1A FAILURE AT 4 HOURS
	8.980E-4		MCW-LGC-FC-LOGICB	LOGIC TRAIN B NON-ESSENTL SW ISOLLOSS OF FUNCTION (PSA)
	3.560E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
7	6.621E-7	2.63	LOOPGR :02-06	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	5.000E-4		MCW-XHE-XM-LVL	LEVEL INSTRUMENTS 1-CW-LS-102 / 103 CCF MISCALIBRATED (PSA)
	3.560E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
8	5.025E-7	2	LOOPWR :02-06	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	1.000E-3		MCW-MOV-OO-106B	CONDENSER INLET MOV1-CW-MOV-106B FAILS OPEN
	5.202E-1		OEP-XHE-XL-NR02HWR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (WEATHER-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
9	5.025E-7	2	LOOPWR :02-06	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	1.000E-3		MCW-MOV-OO-100A	CONDENSER OUTLET 1-CW-MOV-100A FAILS OPEN
	5.202E-1		OEP-XHE-XL-NR02HWR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (WEATHER-RELATED)

#	Prob/Freq	Total %	Cut Set	Description
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
10	5.025E-7	2	LOOPWR :02-06	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	1.000E-3		MCW-MOV-OO-100C	CONDENSER OUTLET 1-CW-MOV-100CD FAILS OPEN
	5.202E-1		OEP-XHE-XL-NR02HWR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (WEATHER-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
11	5.025E-7	2	LOOPWR :02-06	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	1.000E-3		MCW-MOV-OO-106D	CONDENSER INLET MOV1-CW-MOV-106D FAILS OPEN
	5.202E-1		OEP-XHE-XL-NR02HWR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (WEATHER-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
12	5.025E-7	2	LOOPWR :02-06	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	5.202E-1		OEP-XHE-XL-NR02HWR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (WEATHER-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	5.000E-1		SWS-101A-OPEN	PROBABILITY OF 1-SW-MOV-101A ALIGNED OPEN
	2.000E-3		SWS-XHE-XM-ISOL	FAILURE TO VERIFY/ISOLATE SWS/CW INLET MOVs (AP-12, STEP 11)
		EndState	->CD	
13	4.687E-7	1.86	LOOPGR :16	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	1.000E+0		DCP-BAT-LP-1BATA4HR	BATTERY 1A 1-EPD-B-1A FAILURE AT 4 HOURS
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
		EndState	->CD	

#	Prob/Freq	Total %	Cut Set	Description
14	4.512E-7	1.79	LOOPWR :02-06	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	1.000E+0		DCP-BAT-LP-1BATA4HR	BATTERY 1A 1-EPD-B-1A FAILURE AT 4 HOURS
	8.980E-4		MCW-LGC-FC-LOGICB	LOGIC TRAIN B NON-ESSENTL SW ISOLLOSS OF FUNCTION (PSA)
	5.202E-1		OEP-XHE-XL-NR02HWR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (WEATHER-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
15	4.038E-7	1.6	LOOPSC :02-06	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	1.000E-3		MCW-MOV-OO-106B	CONDENSER INLET MOV1-CW-MOV-106B FAILS OPEN
	1.942E-1		OEP-XHE-XL-NR02HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (SWITCHYARD)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
16	4.038E-7	1.6	LOOPSC :02-06	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	1.000E-3		MCW-MOV-OO-100A	CONDENSER OUTLET 1-CW-MOV-100A FAILS OPEN
	1.942E-1		OEP-XHE-XL-NR02HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (SWITCHYARD)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
17	4.038E-7	1.6	LOOPSC :02-06	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	1.000E-3		MCW-MOV-OO-100C	CONDENSER OUTLET 1-CW-MOV-100CD FAILS OPEN
	1.942E-1		OEP-XHE-XL-NR02HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (SWITCHYARD)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
18	4.038E-7	1.6	LOOPSC :02-06	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	1.942E-1		OEP-XHE-XL-NR02HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (SWITCHYARD)

#	Prob/Freq	Total %	Cut Set	Description
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	5.000E-1		SWS-101A-OPEN	PROBABILITY OF 1-SW-MOV-101A ALIGNED OPEN
	2.000E-3		SWS-XHE-XM-ISOL	FAILURE TO VERIFY/ISOLATE SWS/CW INLET MOVs (AP-12, STEP 11)
		EndState	->CD	
19	4.038E-7	1.6	LOOPSC :02-06	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	1.000E-3		MCW-MOV-OO-106D	CONDENSER INLET MOV1-CW-MOV-106D FAILS OPEN
	1.942E-1		OEP-XHE-XL-NR02HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (SWITCHYARD)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
20	3.627E-7	1.44	LOOPSC :02-06	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	1.000E+0		DCP-BAT-LP-1BATA4HR	BATTERY 1A 1-EPD-B-1A FAILURE AT 4 HOURS
	8.980E-4		MCW-LGC-FC-LOGICB	LOGIC TRAIN B NON-ESSENTL SW ISOLLOSS OF FUNCTION (PSA)
	1.942E-1		OEP-XHE-XL-NR02HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (SWITCHYARD)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
21	3.360E-7	1.33	LOMFW :16	
	1.000E-1		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
22	2.621E-7	1.04	LOOPSC :16	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	1.000E+0		DCP-BAT-LP-1BATA4HR	BATTERY 1A 1-EPD-B-1A FAILURE AT 4 HOURS
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING

#	Prob/Freq	Total %	Cut Set	Description
		EndState	->CD	
23	2.512E-7	1	LOOPWR :02-06	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	5.000E-4		MCW-XHE-XM-LVL	LEVEL INSTRUMENTS 1-CW-LS-102 / 103 CCF MISCALIBRATED (PSA)
	5.202E-1		OEP-XHE-XL-NR02HWR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (WEATHER-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
24	2.019E-7	0.8	LOOPSC :02-06	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	5.000E-4		MCW-XHE-XM-LVL	LEVEL INSTRUMENTS 1-CW-LS-102 / 103 CCF MISCALIBRATED (PSA)
	1.942E-1		OEP-XHE-XL-NR02HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (SWITCHYARD)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
25	1.637E-7	0.65	LOOPGR :17-45	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.000E-1		AFW-TDP-FC-SBO	TURBINE-DRIVEN AFW FAILS AFTER BATTERYDEPLETION IN SBO (PSA value)
	1.000E+0		DCP-BAT-LP-1BATA4HR	BATTERY 1A 1-EPD-B-1A FAILURE AT 4 HOURS
	1.000E+0		DCP-BAT-LP-1BATB4HR	BATTERY 1B 1-EPD-B-1B FAILURE AT 4 HOURS
	1.200E-2		EPS-DGN-TM-DG2	DIESEL GENERATOR 2 UNAVAILABLE DUE TO T & M
	1.200E-2		EPS-DGN-TM-SBO	SBO DIESEL GENERATOR UNAVAILABLE DUE TO T & M
	6.110E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
		EndState	->CD	
26	1.271E-7	0.5	LOOPGR :02-06	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.000E+0		DCP-BAT-LP-1BATA4HR	BATTERY 1A 1-EPD-B-1A FAILURE AT 4 HOURS
	9.600E-5		MCW-ASL-FC-103	LEVEL INSTRUMENT 1-CW-LS-13 LOSS OF FUNCTION (PSA)
	3.560E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)

#	Prob/Freq	Total %	Cut Set	Description
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
27	1.217E-7	0.48	LOOPWR :16	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	1.000E+0		DCP-BAT-LP-1BATA4HR	BATTERY 1A 1-EPD-B-1A FAILURE AT 4 HOURS
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
		EndState	->CD	
28	1.134E-7	0.45	LOACB-1J :28	
	4.500E-3		IE-LOACB-1J	LOSS OF 4160 VAC BUS 1J
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	1.000E+0		DCP-BAT-LP-1BATB4HR	BATTERY 1B 1-EPD-B-1B FAILURE AT 4 HOURS
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
		EndState	->CD	
29	1.024E-7	0.41	LOOPGR :17-06	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.200E-2		EPS-DGN-TM-DG3	DIESEL GENERATOR 3 UNAVAILABLE DUE TO T & M
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	2.000E-2		EPS-XHE-XM-SBO1J	OPERATOR FAILS TO ALIGN SBO DIESEL TO BUS 1J
	1.537E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
30	1.024E-7	0.41	LOOPGR :17-06	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.200E-2		EPS-DGN-TM-DG2	DIESEL GENERATOR 2 UNAVAILABLE DUE TO T & M
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	2.000E-2		EPS-XHE-XM-SBO1J	OPERATOR FAILS TO ALIGN SBO DIESEL TO BUS 1J

#	Prob/Freq	Total %	Cut Set	Description
	1.537E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
31	1.000E-7	0.4	XLOCA :2	
	1.000E-7		IE-XLOCA	EXCESSIVE LOCA INITIATING EVENT
	1.000E+0		RPVRM	REACTOR VESSEL RUPTURE
		EndState	->CD	
32	9.600E-8	0.38	SGTR :09	
	4.000E-3		IE-SGTR	STEAM GENERATOR TUBE RUPTURE
	3.000E-1		HPI-XHE-XM-RWSTR1	OPERATOR FAILS TO REFILL THE RWST
	2.000E-2		OPR-XHE-XM-DEPRCS	OPERATOR FAILS TO COOLDOWN AND DEPRESSURIZE REACTOR
	4.000E-3		OPR-XHE-XM-ECA312	OPERATOR FAILS TO IMPLEMENT SGTR PROCEDURE ECA 3.1/3.2
		EndState	->CD	
33	7.989E-8	0.32	LOOPGR :17-03-10	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	1.000E+0		DCP-BAT-LP-1BATA4HR	BATTERY 1A 1-EPD-B-1A FAILURE AT 4 HOURS
	1.000E+0		DCP-BAT-LP-1BATB4HR	BATTERY 1B 1-EPD-B-1B FAILURE AT 4 HOURS
	1.200E-2		EPS-DGN-TM-DG3	DIESEL GENERATOR 3 UNAVAILABLE DUE TO T & M
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	2.000E-2		EPS-XHE-XM-SBO1J	OPERATOR FAILS TO ALIGN SBO DIESEL TO BUS 1J
	1.537E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
34	7.989E-8	0.32	LOOPGR :17-03-10	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	1.000E+0		DCP-BAT-LP-1BATA4HR	BATTERY 1A 1-EPD-B-1A FAILURE AT 4 HOURS
	1.000E+0		DCP-BAT-LP-1BATB4HR	BATTERY 1B 1-EPD-B-1B FAILURE AT 4 HOURS

#	Prob/Freq	Total %	Cut Set	Description
	1.200E-2		EPS-DGN-TM-DG2	DIESEL GENERATOR 2 UNAVAILABLE DUE TO T & M
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	2.000E-2		EPS-XHE-XM-SBO1J	OPERATOR FAILS TO ALIGN SBO DIESEL TO BUS 1J
	1.537E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
35	6.885E-8	0.27	LOOPGR :02-06	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.500E-2		CPC-MDP-TM-SWP10B	CPC SWS TRAIN 1-SW-P-10B UNAVAILABLE DUE TO T & M
	5.887E-2		IAS-MDC-FR-1C1	Instrument Air Compressor 1-IA-C-1 Fails to Run
	5.887E-2		IAS-MDC-FR-2C1	Instrument Air Compressor 2-IA-C-1 Fails to Run
	1.000E+0		IAS-SYS-FC-CONDPOLISH	INSUFFICIENT AIR FROM CONDENSATE POLISHING CMPRESSRS
	3.560E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
36	6.819E-8	0.27	LOOPGR :17-45	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.000E-1		AFW-TDP-FC-SBO	TURBINE-DRIVEN AFW FAILS AFTER BATTERYDEPLETION IN SBO (PSA value)
	1.000E+0		DCP-BAT-LP-1BATA4HR	BATTERY 1A 1-EPD-B-1A FAILURE AT 4 HOURS
	1.000E+0		DCP-BAT-LP-1BATB4HR	BATTERY 1B 1-EPD-B-1B FAILURE AT 4 HOURS
	5.000E-3		EPS-DGN-FS-DG2	DIESEL GENERATOR 2 FAILS TO START
	1.200E-2		EPS-DGN-TM-SBO	SBO DIESEL GENERATOR UNAVAILABLE DUE TO T & M
	6.110E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
		EndState	->CD	
37	6.819E-8	0.27	LOOPGR :17-45	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)

#	Prob/Freq	Total %	Cut Set	Description
	1.000E-1		AFW-TDP-FC-SBO	TURBINE-DRIVEN AFW FAILS AFTER BATTERYDEPLETION IN SBO (PSA value)
	1.000E+0		DCP-BAT-LP-1BATA4HR	BATTERY 1A 1-EPD-B-1A FAILURE AT 4 HOURS
	1.000E+0		DCP-BAT-LP-1BATB4HR	BATTERY 1B 1-EPD-B-1B FAILURE AT 4 HOURS
	5.000E-3		EPS-DGN-FS-SBO	SBO DIESEL GENERATOR FAILS TO START
	1.200E-2		EPS-DGN-TM-DG2	DIESEL GENERATOR 2 UNAVAILABLE DUE TO T & M
	6.110E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
		EndState	->CD	
38	6.696E-8	0.27	LOOPGR :16	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.000E-4		AFW-SYS-LK-SGCKVS	STEAM LEAKAGE THRU CKVS 27.58 & 89 (PSA)
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	1.000E+0		DCP-BAT-LP-1BATA4HR	BATTERY 1A 1-EPD-B-1A FAILURE AT 4 HOURS
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
		EndState	->CD	
39	6.621E-8	0.26	LOOPGR :02-11	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.000E-3		MCW-MOV-OO-106D	CONDENSER INLET MOV1-CW-MOV-106D FAILS OPEN
	3.560E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
40	6.621E-8	0.26	LOOPGR :02-11	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.000E-3		MCW-MOV-OO-100A	CONDENSER OUTLET 1-CW-MOV-100A FAILS OPEN
	3.560E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	

#	Prob/Freq	Total %	Cut Set	Description
41	6.621E-8	0.26	LOOPGR :02-11	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.000E-3		MCW-MOV-OO-106B	CONDENSER INLET MOV1-CW-MOV-106B FAILS OPEN
	3.560E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
42	6.621E-8	0.26	LOOPGR :02-11	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.000E-3		MCW-MOV-OO-100C	CONDENSER OUTLET 1-CW-MOV-100CD FAILS OPEN
	3.560E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
43	6.621E-8	0.26	LOOPGR :02-11	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.560E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	5.000E-1		SWS-101A-OPEN	PROBABILITY OF 1-SW-MOV-101A ALIGNED OPEN
	2.000E-3		SWS-XHE-XM-ISOL	FAILURE TO VERIFY/ISOLATE SWS/CW INLET MOVs (AP-12, STEP 11)
		EndState	->CD	
44	6.616E-8	0.26	LOOPWR :17-06	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	1.200E-2		EPS-DGN-TM-DG2	DIESEL GENERATOR 2 UNAVAILABLE DUE TO T & M
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	2.000E-2		EPS-XHE-XM-SBO1J	OPERATOR FAILS TO ALIGN SBO DIESEL TO BUS 1J

#	Prob/Freq	Total %	Cut Set	Description
	3.824E-1		OEP-XHE-XL-NR04HWR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (WEATHER-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
45	6.616E-8	0.26	LOOPWR :17-06	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	1.200E-2		EPS-DGN-TM-DG3	DIESEL GENERATOR 3 UNAVAILABLE DUE TO T & M
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	2.000E-2		EPS-XHE-XM-SBO1J	OPERATOR FAILS TO ALIGN SBO DIESEL TO BUS 1J
	3.824E-1		OEP-XHE-XL-NR04HWR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (WEATHER-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
46	6.250E-8	0.25	LOOPGR :16	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	4.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
47	6.165E-8	0.24	LOOPWR :17-06	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	2.118E-2		EPS-DGN-FR-DG3	DIESEL GENERATOR 3 FAILS TO RUN
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	2.000E-2		EPS-XHE-XM-SBO1J	OPERATOR FAILS TO ALIGN SBO DIESEL TO BUS 1J
	3.824E-1		OEP-XHE-XL-NR04HWR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (WEATHER-RELATED)
	5.280E-1		OEP-XHE-XX-NR04HWR1	CONVOLUTION FACTOR FOR 1FTR-OPR (4HR-WR AVAIL)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
48	6.165E-8	0.24	LOOPWR :17-06	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)

#	Prob/Freq	Total %	Cut Set	Description
	2.118E-2		EPS-DGN-FR-DG2	DIESEL GENERATOR 2 FAILS TO RUN
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	2.000E-2		EPS-XHE-XM-SBO1J	OPERATOR FAILS TO ALIGN SBO DIESEL TO BUS 1J
	3.824E-1		OEP-XHE-XL-NR04HWR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (WEATHER-RELATED)
	5.280E-1		OEP-XHE-XX-NR04HWR1	CONVOLUTION FACTOR FOR 1FTR-OPR (4HR-WR AVAIL)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
49	6.146E-8	0.24	LOOPGR :17-06	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.200E-2		EPS-DGN-TM-DG3	DIESEL GENERATOR 3 UNAVAILABLE DUE TO T & M
	1.200E-2		EPS-DGN-TM-SBO	SBO DIESEL GENERATOR UNAVAILABLE DUE TO T & M
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.537E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
50	6.146E-8	0.24	LOOPGR :17-06	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.200E-2		EPS-DGN-TM-DG2	DIESEL GENERATOR 2 UNAVAILABLE DUE TO T & M
	1.200E-2		EPS-DGN-TM-SBO	SBO DIESEL GENERATOR UNAVAILABLE DUE TO T & M
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.537E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	

C.2.16 Surry HA3.1 (Case 2) Sequence and Cutset Report

HA3.1 (Case 2) Top 90 Percent Dominant Sequence

TRANS 27	/RPS,AFW,MFW,FAB

HA3.1 (Case 2) Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	6.144E-6	87.5	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	7.896E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	2.000E-2		CDS-XHE-XM-LVL	Operator Fails to Maintain Hotwell Level - (Added for loss of indicators)
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
2	8.777E-7	12.5	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT

C.2.17 Surry HA3.1 (Case 3) Sequence and Cutset Report

HA3.1 (Case 3) Top 90 Percent Dominant Sequence

TRANS 27	/RPS,AFW,MFW,FAB

HA3.1 (Case 3) Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	6.144E-6	87.5	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	7.896E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	2.000E-2		CDS-XHE-XM-LVL	Operator Fails to Maintain Hotwell Level - (Added for loss of indicators)
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	
2	8.777E-7	12.5	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT

C.2.18 Surry SS1.1 Sequence and Cutset Report

SS1.1 Top 5 Dominant Sequences

LOOPGR 17-06	/RPS-L, EPS, /AFW-B, /PORV-B, /RSD, /BP1, BP2, OPR-04H, DGR-04H
LOOPGR 17-12	/RPS-L, EPS, /AFW-B, /PORV-B, /RSD, BP1, BP2, OPR-02H, DGR-02H
LOOPGR 17-27	/RPS-L, EPS, /AFW-B, /PORV-B, RSD, /BP1, O1, /BP2, O2, OPR-02H, DGR-02H
LOOPGR 17-45	/RPS-L, EPS, AFW-B, OPR-01H, DGR-01H
LOOPGR 17-18	/RPS-L, EPS, /AFW-B, /PORV-B, RSD, /BP1, /O1, /BP2, O2, OPR-03H, DGR-03H

SS1.1 Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cutset	Description
1	2.423E-2	88.74	LOOPGR :17-06	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	6.500E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
2	8.653E-4	3.17	LOOPGR :17-12	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	8.018E-1		EPS-XHE-XL-NR02H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 2 HOURS
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
3	8.307E-4	3.04	LOOPGR :17-27	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	8.018E-1		EPS-XHE-XL-NR02H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 2 HOURS
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	1.200E-2		OPR-XHE-XM-RSSDEP	OPERATOR FAILS TO COOLDOWN RCS TO 1720 PSI IN 2 HOURS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	5.000E-1		RCS-MDP-LK-O1	RCP SEAL STAGE 1 INTEGRITY (O-RING EXTRUSION) FAILS
	5.000E-1		RCS-MDP-LK-O2	RCP SEAL STAGE 2 INTEGRITY (O-RING EXTRUSION) FAILS
		EndState	->CD	
4	5.709E-4	2.09	LOOPGR :17-45	

#	Prob/Freq	Total %	Cutset	Description
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	7.000E-3		AFW-TDP-FS-1P2	AFW TURBINE DRIVEN PUMP 1-FW-P-2 FAILS TO START
	1.200E-1		AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
	9.172E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
		EndState	->CD	
5	4.731E-4	1.73	LOOPGR :17-18	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	7.173E-1		EPS-XHE-XL-NR03H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 3 HOURS
	2.748E-1		OEP-XHE-XL-NR03HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 3 HOURS (GRID-RELATED)
	1.200E-2		OPR-XHE-XM-RSSDEP	OPERATOR FAILS TO COOLDOWN RCS TO 1720 PSI IN 2 HOURS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	5.000E-1		/RCS-MDP-LK-O1	RCP SEAL STAGE 1 INTEGRITY (O-RING EXTRUSION) FAILS
	5.000E-1		RCS-MDP-LK-O2	RCP SEAL STAGE 2 INTEGRITY (O-RING EXTRUSION) FAILS
		EndState	->CD	
6	4.154E-4	1.52	LOOPGR :17-30	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	8.018E-1		EPS-XHE-XL-NR02H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 2 HOURS
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	1.200E-2		OPR-XHE-XM-RSSDEP	OPERATOR FAILS TO COOLDOWN RCS TO 1720 PSI IN 2 HOURS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	5.000E-1		RCS-MDP-LK-O1	RCP SEAL STAGE 1 INTEGRITY (O-RING EXTRUSION) FAILS
		EndState	->CD	

C.2.19 Surry SS1.2 Sequence and Cutset Report

SS1.2 Top 90 Percent Dominant Sequence

LOMFW 16	/RPS, AFW, FAB

SS1.2 Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cutset	Description
1	1.000E-1	94.07	LOMFW :16	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.000E-1		AFW-XHE-XM-CNTRL1	OPERATOR FAILS TO CONTROL AFW TDP FLOW GIVEN SBO AND LOSS OF INST. AIR
		EndState	->CD	
2	7.000E-3	6.59	LOMFW :16	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	7.000E-3		AFW-TDP-FS-1P2	AFW TURBINE DRIVEN PUMP 1-FW-P-2 FAILS TO START
		EndState	->CD	

C.2.20 Surry SS2.1 (Case 1) Sequence and Cutset Report

SS 2.1 (Case 1) Top 90 Percent Dominant Sequences

LOMFW 17-20	RPS, /RCSPRESS, MFW, /AFW-A, BORATION
LOMFW 17-22	RPS, RCSPRESS

SS2.1 (Case 1) Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cutset	Description
1	2.000E-2	44.19	LOMFW :17-20	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	2.000E-2		CVC-XHE-XM-BOR	OPERATOR FAILS TO INITIATE EMERGENCY BORATION
		EndState	->CD	
2	1.400E-2	30.93	LOMFW :17-22	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.400E-2		RCS-PHN-MODPOOR	MODERATOR TEMP COEFFICIENT NOT ENOUGH NEGATIVE
		EndState	->CD	
3	2.400E-3	5.3	LOMFW :17-22	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
	8.000E-3		PPR-SRV-CC-155-1B	SRV-2 (SV-155-1B) FAILS TO OPEN
		EndState	->CD	
4	2.400E-3	5.3	LOMFW :17-22	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
	8.000E-3		PPR-SRV-CC-155-1B	SRV-2 (SV-155-1B) FAILS TO OPEN
		EndState	->CD	

#	Prob/Freq	Total %	Cutset	Description
5	2.400E-3	5.3	LOMFW :17-22	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
	8.000E-3		PPR-SRV-CC-155-1C	SRV-3 (SV-155-1C) FAILS TO OPEN
		EndState	->CD	
6	2.400E-3	5.3	LOMFW :17-22	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
	8.000E-3		PPR-SRV-CC-155-1C	SRV-3 (SV-155-1C) FAILS TO OPEN
		EndState	->CD	
7	2.400E-3	5.3	LOMFW :17-22	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
	8.000E-3		PPR-SRV-CC-155-1A	SRV-1 (SV-155-1A) FAILS TO OPEN
		EndState	->CD	

C.2.21 Surry SS2.1 (Case 2) Sequence and Cutset Report

SS 2.1 (Case 2) Dominant Sequences

TRANS 28-20	RPS, /RCSPRESS, MFW, /AFW-A, BORATION
TRANS 28-22	RPS, RCSPRESS

SS2.1 (Case 2) Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cutset	Description
1	2.000E-2	44.19	TRANS :28-20	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.000E-2		CVC-XHE-XM-BOR	OPERATOR FAILS TO INITIATE EMERGENCY BORATION
		EndState	->CD	
2	1.400E-2	30.93	TRANS :28-22	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.400E-2		RCS-PHN-MODPOOR	MODERATOR TEMP COEFFICIENT NOT ENOUGH NEGATIVE
		EndState	->CD	
3	2.400E-3	5.3	TRANS :28-22	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
	8.000E-3		PPR-SRV-CC-155-1B	SRV-2 (SV-155-1B) FAILS TO OPEN
		EndState	->CD	
4	2.400E-3	5.3	TRANS :28-22	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
	8.000E-3		PPR-SRV-CC-155-1B	SRV-2 (SV-155-1B) FAILS TO OPEN
		EndState	->CD	

#	Prob/Freq	Total %	Cutset	Description
5	2.400E-3	5.3	TRANS :28-22	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
	8.000E-3		PPR-SRV-CC-155-1C	SRV-3 (SV-155-1C) FAILS TO OPEN
		EndState	->CD	
6	2.400E-3	5.3	TRANS :28-22	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	3.000E-1		PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING
	8.000E-3		PPR-SRV-CC-155-1C	SRV-3 (SV-155-1C) FAILS TO OPEN
		EndState	->CD	
7	2.400E-3	5.3	TRANS :28-22	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	3.000E-1		PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
	8.000E-3		PPR-SRV-CC-155-1A	SRV-1 (SV-155-1A) FAILS TO OPEN
		EndState	->CD	

C.2.22 Surry SS4.1 (Case 1) Sequence and Cutset Report

SS4.1 (Case 1) Top 90 Percent Dominant Sequence

LOCHS 16	/RPS, AFW, MFW, FAB

SS4.1 (Case 1) Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	7.000E-4	87.51	LOCHS :16	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
		EndState	->CD	
2	1.000E-4	12.5	LOCHS :16	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.000E-4		AFW-SYS-LK-SGCKVS	STEAM LEAKAGE THRU CKVS 27.58 & 89 (PSA)
		EndState	->CD	

C.2.23 Surry SS4.1 (Case 2) Sequence and Cutset Report

SS4.1 (Case 2) Top 90 Percent Dominant Sequence

LOMFW 16	/RPS, AFW, FAB

SS4.1 (Case 2) Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	7.000E-4	87.51	LOMFW :16	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
		EndState	->CD	
2	1.000E-4	12.5	LOMFW :16	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.000E-4		AFW-SYS-LK-SGCKVS	STEAM LEAKAGE THRU CKVS 27.58 & 89 (PSA)
		EndState	->CD	

C.2.24 Surry SS4.1 (Case 3) Sequence and Cutset Report

SS4.1 (Case 3) Top 90 Percent Dominant Sequence

TRANS 27	/RPS,AFW,MFW,FAB

SS4.1 (Case 3) Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	7.000E-4	87.51	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	7.000E-4		CDS-XVM-CC-CN150	ECST M/U VALVE 1-CN-150 FAILS CLOSED
		EndState	->CD	
2	1.000E-4	12.5	TRANS :27	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.000E-4		AFW-SYS-LK-SGCKVS	STEAM LEAKAGE THRU CKVS 27.58 & 89 (PSA)
		EndState	->CD	

C.2.25 Surry SG1.1 Sequence and Cutset Report

SG1.1 Top 90 Percent Dominant Sequences

LOOPGR 17-06	/RPS-L, EPS, /AFW-B, /PORV-B, /RSD, /BP1, BP2, OPR-04H, DGR-04H
LOOPGR 17-03-10	/RPS-L, EPS, /AFW-B, /PORV-B, /RSD, /BP1, /BP2, OPR-04H, DGR-04H, AFW-MAN, SG-DEP-LT1

SG1.1 Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cutset	Description
1	2.000E-1	61.58	LOOPGR :17-06	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	
2	1.560E-1	48.03	LOOPGR :17-03-10	

#	Prob/Freq	Total %	Cutset	Description
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	1.000E+0		DCP-BAT-LP-1BATA4HR	BATTERY 1A 1-EPD-B-1A FAILURE AT 4 HOURS
	1.000E+0		DCP-BAT-LP-1BATB4HR	BATTERY 1B 1-EPD-B-1B FAILURE AT 4 HOURS
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	

C.2.26 Surry SG2.1 Sequence and Cutset Report

SG2.1 Top 90 Percent Dominant Sequence

LOMFW 17-21	RPS, /RCSPRESS, MFW, AFW-A

SG2.1 Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cutset	Description
1	1.000E+0	100	LOMFW :17-21	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.000E+0		<TRUE>	SYSTEM GENERATED FAILURE EVENT
		EndState	->CD	

C.3 Sequoyah Sequence and Cutset Reports

C.3.1 Sequoyah SU1 Cutset Sequence and Report

SU1 Top 90 Percent Dominant Sequences

LOOPGR 16	/RPS-L, /EPS, AFW-L, FAB-L
LOOPGR 02-06	/RPS-L, /EPS, /AFW-L, /PORV-L, LOSC-L, /RSD, /BP1, BP2, OPR-02H, HPI-L

SU1 Top 50 Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	5.404E-6	30.33	LOOPGR :17-06-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.393E-4		EPS-DGN-CF-RUN12	CCF OF UNIT 1 & 2 DIESEL GENERATORS TO RUN
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	2.340E-1		OEP-XHE-XX-NR04HGR0	CONVOLUTION FACTOR FOR CCF-OPR

#	Prob/Freq	Total %	Cut Set	Description
				(4HR-GR Avail)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
2	1.505E-6	8.44	LOOPGR :17-06-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	3.738E-4		EPS-DGN-CF-RUN1	CCF OF UNIT 1 DIESEL GENERATORS TO RUN
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	2.340E-1		OEP-XHE-XX-NR04HGR0	CONVOLUTION FACTOR FOR CCF-OPR (4HR-GR Avail)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
3	1.174E-6	6.59	LOOPGR :17-03-10-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	3.738E-4		EPS-DGN-CF-RUN1	CCF OF UNIT 1 DIESEL GENERATORS TO RUN
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	2.340E-1		OEP-XHE-XX-NR04HGR0	CONVOLUTION FACTOR FOR CCF-OPR (4HR-GR Avail)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
4	9.182E-7	5.15	LOOPGR :17-06-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN

#	Prob/Freq	Total %	Cut Set	Description
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	9.180E-2		OEP-XHE-XX-NR04HGR2	CONVOLUTION FACTOR FOR 2FTR-OPR (4HR-GR AVAIL)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
5	7.514E-7	4.22	LOOPGR :17-03-10-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.393E-4		EPS-DGN-CF-RUN12	CCF OF UNIT 1 & 2 DIESEL GENERATORS TO RUN
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	2.340E-1		OEP-XHE-XX-NR04HGR0	CONVOLUTION FACTOR FOR CCF-OPR (4HR-GR Avail)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
6	7.359E-7	4.13	LOOPGR :17-06-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.607E-1		DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	7.110E-1		/DE-OPRGR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	2.393E-4		EPS-DGN-CF-RUN12	CCF OF UNIT 1 & 2 DIESEL GENERATORS TO RUN
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	2.340E-1		OEP-XHE-XX-NR04HGR0	CONVOLUTION FACTOR FOR CCF-OPR (4HR-GR Avail)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS

#	Prob/Freq	Total %	Cut Set	Description
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
7	7.162E-7	4.02	LOOPGR :17-03-10-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	9.180E-2		OEP-XHE-XX-NR04HGR2	CONVOLUTION FACTOR FOR 2FTR-OPR (4HR-GR AVAIL)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
8	2.991E-7	1.68	LOOPGR :17-06-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.607E-1		DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.890E-1		DE-OPRGR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	2.393E-4		EPS-DGN-CF-RUN12	CCF OF UNIT 1 & 2 DIESEL GENERATORS TO RUN
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	2.340E-1		OEP-XHE-XX-NR04HGR0	CONVOLUTION FACTOR FOR CCF-OPR (4HR-GR Avail)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
9	2.727E-7	1.53	LOOPGR :17-04-7-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	8.136E-1		/OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)

#	Prob/Freq	Total %	Cut Set	Description
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	4.242E-5		SWS-MDP-CF-FSNR	CCF OF SWS NORMALLY STANDBY PUMPS JA/LB/PB/RA
	4.000E-2		SWS-XHE-XM-STBY	OPERATOR FAILS TO START/ALIGN STANDBY PUMPS
		EndState	->CD	Added through Event Tree Add
10	2.594E-7	1.46	LOOPGR :17-06-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.688E-6		SWS-MOV-CF-ALL	CCF OF SWS INLET ISOL MOVs 1-67-66/1-67-67 2-67-66/2-67-67
		EndState	->CD	Added through Event Tree Add
11	2.427E-7	1.36	LOOPGR :17-06-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.500E-3		ACP-CRB-CC-1726	OFFSITE POWER SUPPLY BREAKER 1726 FAILS TO OPEN
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	2.340E-1		OEP-XHE-XX-NR04HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (4HR-GR AVAIL)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
12	2.427E-7	1.36	LOOPGR :17-06-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.500E-3		ACP-CRB-CC-1718	OFFSITE POWER SUPPLY BREAKER 1718 FAILS TO OPEN
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN

#	Prob/Freq	Total %	Cut Set	Description
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	2.340E-1		OEP-XHE-XX-NR04HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (4HR-GR AVAIL)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
13	2.049E-7	1.15	LOOPGR :17-06-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.607E-1		DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	7.110E-1		/DE-OPRGR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	3.738E-4		EPS-DGN-CF-RUN1	CCF OF UNIT 1 DIESEL GENERATORS TO RUN
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	2.340E-1		OEP-XHE-XX-NR04HGR0	CONVOLUTION FACTOR FOR CCF-OPR (4HR-GR Avail)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
14	1.893E-7	1.06	LOOPGR :17-03-10-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.500E-3		ACP-CRB-CC-1726	OFFSITE POWER SUPPLY BREAKER 1726 FAILS TO OPEN
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	2.340E-1		OEP-XHE-XX-NR04HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (4HR-GR AVAIL)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS

#	Prob/Freq	Total %	Cut Set	Description
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
15	1.893E-7	1.06	LOOPGR :17-03-10-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.500E-3		ACP-CRB-CC-1718	OFFSITE POWER SUPPLY BREAKER 1718 FAILS TO OPEN
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	2.340E-1		OEP-XHE-XX-NR04HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (4HR-GR AVAIL)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
16	1.598E-7	0.9	LOOPGR :17-03-10-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	1.607E-1		DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	7.110E-1		/DE-OPRGR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	3.738E-4		EPS-DGN-CF-RUN1	CCF OF UNIT 1 DIESEL GENERATORS TO RUN
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	2.340E-1		OEP-XHE-XX-NR04HGR0	CONVOLUTION FACTOR FOR CCF-OPR (4HR-GR Avail)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
17	1.419E-7	0.8	LOOPGR :17-45-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR

#	Prob/Freq	Total %	Cut Set	Description
				(GRID-RELATED)
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.826E-1		DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	9.135E-1		/DE-OPRGR-09H2	DE for fail to recover OSP at 9 hrs, given fail to recover in first 2 hrs
	3.738E-4		EPS-DGN-CF-RUN1	CCF OF UNIT 1 DIESEL GENERATORS TO RUN
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	1.750E-1		OEP-XHE-XX-NR01HGR0	CONVOLUTION FACTOR FOR CCF-OPR (1HR-GR Avail)
		EndState	->CD	Added through Event Tree Add
18	1.250E-7	0.7	LOOPGR :17-06-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.607E-1		DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	7.110E-1		/DE-OPRGR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	9.180E-2		OEP-XHE-XX-NR04HGR2	CONVOLUTION FACTOR FOR 2FTR-OPR (4HR-GR AVAIL)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
19	1.113E-7	0.62	LOOPGR :17-45-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	4.174E-1		/DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	3.738E-4		EPS-DGN-CF-RUN1	CCF OF UNIT 1 DIESEL GENERATORS TO RUN
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	1.750E-1		OEP-XHE-XX-NR01HGR0	CONVOLUTION FACTOR FOR CCF-OPR (1HR-GR Avail)
		EndState	->CD	Added through Event Tree Add

#	Prob/Freq	Total %	Cut Set	Description
20	1.075E-7	0.6	LOOPGR :17-06-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.500E-3		ACP-CRB-CC-1718	OFFSITE POWER SUPPLY BREAKER 1718 FAILS TO OPEN
	2.500E-3		ACP-CRB-CC-1726	OFFSITE POWER SUPPLY BREAKER 1726 FAILS TO OPEN
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
21	1.023E-7	0.57	LOOPGR :17-03-10-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	1.607E-1		DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	7.110E-1		/DE-OPRGR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	2.393E-4		EPS-DGN-CF-RUN12	CCF OF UNIT 1 & 2 DIESEL GENERATORS TO RUN
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	2.340E-1		OEP-XHE-XX-NR04HGR0	CONVOLUTION FACTOR FOR CCF-OPR (4HR-GR Avail)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
22	1.013E-7	0.57	LOOPGR :17-45-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	5.000E-3		AFW-TDP-TM-1A	AFW TDP UNAVAILABLE DUE TO TEST AND MAINTENANCE
	5.826E-1		DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	9.135E-1		/DE-OPRGR-09H2	DE for fail to recover OSP at 9 hrs, given fail to recover in first 2 hrs
	3.738E-4		EPS-DGN-CF-RUN1	CCF OF UNIT 1 DIESEL GENERATORS

#	Prob/Freq	Total %	Cut Set	Description
				TO RUN
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	1.750E-1		OEP-XHE-XX-NR01HGR0	CONVOLUTION FACTOR FOR CCF-OPR (1HR-GR Avail)
		EndState	->CD	Added through Event Tree Add
23	9.753E-8	0.55	LOOPGR :17-03-10-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	1.607E-1		DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	7.110E-1		/DE-OPRGR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	9.180E-2		OEP-XHE-XX-NR04HGR2	CONVOLUTION FACTOR FOR 2FTR-OPR (4HR-GR AVAIL)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
24	9.707E-8	0.54	LOOPGR :17-06-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	2.340E-1		OEP-XHE-XX-NR04HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (4HR-GR AVAIL)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.000E-3		SWS-MOV-CC-16766	SWS HEADER A INLET ISOL MOV 1-67-66 TO DGN A HEAT EXCHANGERS
		EndState	->CD	Added through Event Tree Add

#	Prob/Freq	Total %	Cut Set	Description
25	9.707E-8	0.54	LOOPGR :17-06-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	2.340E-1		OEP-XHE-XX-NR04HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (4HR-GR AVAIL)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.000E-3		SWS-MOV-CC-16767	SWS HEADER B INLET ISOL MOV 1-67-67 TO DGN B HTX
		EndState	->CD	Added through Event Tree Add
26	9.084E-8	0.51	LOOPGR :17-45-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.826E-1		DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	9.135E-1		/DE-OPRGR-09H2	DE for fail to recover OSP at 9 hrs, given fail to recover in first 2 hrs
	2.393E-4		EPS-DGN-CF-RUN12	CCF OF UNIT 1 & 2 DIESEL GENERATORS TO RUN
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	1.750E-1		OEP-XHE-XX-NR01HGR0	CONVOLUTION FACTOR FOR CCF-OPR (1HR-GR Avail)
		EndState	->CD	Added through Event Tree Add
27	8.386E-8	0.47	LOOPGR :17-03-10-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.500E-3		ACP-CRB-CC-1718	OFFSITE POWER SUPPLY BREAKER 1718 FAILS TO OPEN
	2.500E-3		ACP-CRB-CC-1726	OFFSITE POWER SUPPLY BREAKER 1726 FAILS TO OPEN
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)

#	Prob/Freq	Total %	Cut Set	Description
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
28	8.328E-8	0.47	LOOPGR :17-06-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.607E-1		DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.890E-1		DE-OPRGR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	3.738E-4		EPS-DGN-CF-RUN1	CCF OF UNIT 1 DIESEL GENERATORS TO RUN
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	2.340E-1		OEP-XHE-XX-NR04HGR0	CONVOLUTION FACTOR FOR CCF-OPR (4HR-GR Avail)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
29	8.321E-8	0.47	LOOPGR :17-45-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN
	5.826E-1		DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	9.135E-1		/DE-OPRGR-09H2	DE for fail to recover OSP at 9 hrs, given fail to recover in first 2 hrs
	3.738E-4		EPS-DGN-CF-RUN1	CCF OF UNIT 1 DIESEL GENERATORS TO RUN
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	1.750E-1		OEP-XHE-XX-NR01HGR0	CONVOLUTION FACTOR FOR CCF-OPR (1HR-GR Avail)
		EndState	->CD	Added through Event Tree Add
30	7.948E-8	0.45	LOOPGR :17-45-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	5.000E-3		AFW-TDP-TM-1A	AFW TDP UNAVAILABLE DUE TO TEST AND MAINTENANCE
	4.174E-1		/DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)

#	Prob/Freq	Total %	Cut Set	Description
	3.738E-4		EPS-DGN-CF-RUN1	CCF OF UNIT 1 DIESEL GENERATORS TO RUN
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	1.750E-1		OEP-XHE-XX-NR01HGR0	CONVOLUTION FACTOR FOR CCF-OPR (1HR-GR Avail)
		EndState	->CD	Added through Event Tree Add
31	7.571E-8	0.42	LOOPGR :17-03-10-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	2.340E-1		OEP-XHE-XX-NR04HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (4HR-GR AVAIL)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.000E-3		SWS-MOV-CC-16767	SWS HEADER B INLET ISOL MOV 1-67-67 TO DGN B HTX
		EndState	->CD	Added through Event Tree Add
32	7.571E-8	0.42	LOOPGR :17-03-10-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	2.340E-1		OEP-XHE-XX-NR04HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (4HR-GR AVAIL)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS

#	Prob/Freq	Total %	Cut Set	Description
	1.000E-3		SWS-MOV-CC-16766	SWS HEADER A INLET ISOL MOV 1-67-66 TO DGN A HEAT EXCHANGERS
		EndState	->CD	Added through Event Tree Add
33	7.124E-8	0.4	LOOPGR :17-45-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	4.174E-1		/DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	2.393E-4		EPS-DGN-CF-RUN12	CCF OF UNIT 1 & 2 DIESEL GENERATORS TO RUN
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	1.750E-1		OEP-XHE-XX-NR01HGR0	CONVOLUTION FACTOR FOR CCF-OPR (1HR-GR Avail)
		EndState	->CD	Added through Event Tree Add
34	6.621E-8	0.37	LOOPGR :17-45-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.826E-1		DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	9.135E-1		/DE-OPRGR-09H2	DE for fail to recover OSP at 9 hrs, given fail to recover in first 2 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	5.250E-2		OEP-XHE-XX-NR01HGR2	CONVOLUTION FACTOR FOR 2FTR-OPR (1HR-GR AVAIL)
		EndState	->CD	Added through Event Tree Add
35	6.526E-8	0.37	LOOPGR :17-45-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN
	4.174E-1		/DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	3.738E-4		EPS-DGN-CF-RUN1	CCF OF UNIT 1 DIESEL GENERATORS TO RUN
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	1.750E-1		OEP-XHE-XX-NR01HGR0	CONVOLUTION FACTOR FOR CCF-OPR (1HR-GR Avail)

#	Prob/Freq	Total %	Cut Set	Description
		EndState	->CD	Added through Event Tree Add
36	6.496E-8	0.36	LOOPGR :17-03-10-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	1.607E-1		DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.890E-1		DE-OPRGR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	3.738E-4		EPS-DGN-CF-RUN1	CCF OF UNIT 1 DIESEL GENERATORS TO RUN
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	2.340E-1		OEP-XHE-XX-NR04HGR0	CONVOLUTION FACTOR FOR CCF-OPR (4HR-GR Avail)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
37	6.488E-8	0.36	LOOPGR :17-45-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	5.000E-3		AFW-TDP-TM-1A	AFW TDP UNAVAILABLE DUE TO TEST AND MAINTENANCE
	5.826E-1		DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	9.135E-1		/DE-OPRGR-09H2	DE for fail to recover OSP at 9 hrs, given fail to recover in first 2 hrs
	2.393E-4		EPS-DGN-CF-RUN12	CCF OF UNIT 1 & 2 DIESEL GENERATORS TO RUN
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	1.750E-1		OEP-XHE-XX-NR01HGR0	CONVOLUTION FACTOR FOR CCF-OPR (1HR-GR Avail)
		EndState	->CD	Added through Event Tree Add
38	5.748E-8	0.32	LOOPGR :17-04-7-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	8.136E-1		/OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS

#	Prob/Freq	Total %	Cut Set	Description
	3.577E-7		SWS-TSA-CF-PG-ALL	CCF OF 4-OF-4 ERCW TRAVELING SCREENS
		EndState	->CD	Added through Event Tree Add
39	5.328E-8	0.3	LOOPGR :17-45-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN
	5.826E-1		DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	9.135E-1		/DE-OPRGR-09H2	DE for fail to recover OSP at 9 hrs, given fail to recover in first 2 hrs
	2.393E-4		EPS-DGN-CF-RUN12	CCF OF UNIT 1 & 2 DIESEL GENERATORS TO RUN
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	1.750E-1		OEP-XHE-XX-NR01HGR0	CONVOLUTION FACTOR FOR CCF-OPR (1HR-GR Avail)
		EndState	->CD	Added through Event Tree Add
40	5.193E-8	0.29	LOOPGR :17-45-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	4.174E-1		/DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	5.250E-2		OEP-XHE-XX-NR01HGR2	CONVOLUTION FACTOR FOR 2FTR-OPR (1HR-GR AVAIL)
		EndState	->CD	Added through Event Tree Add
41	5.089E-8	0.29	LOOPGR :17-45-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	5.000E-3		AFW-TDP-TM-1A	AFW TDP UNAVAILABLE DUE TO TEST AND MAINTENANCE
	4.174E-1		/DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	2.393E-4		EPS-DGN-CF-RUN12	CCF OF UNIT 1 & 2 DIESEL GENERATORS TO RUN
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	1.750E-1		OEP-XHE-XX-NR01HGR0	CONVOLUTION FACTOR FOR CCF-OPR (1HR-GR Avail)

#	Prob/Freq	Total %	Cut Set	Description
		EndState	->CD	Added through Event Tree Add
42	5.083E-8	0.29	LOOPGR :17-06-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.607E-1		DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.890E-1		DE-OPRGR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	9.180E-2		OEP-XHE-XX-NR04HGR2	CONVOLUTION FACTOR FOR 2FTR-OPR (4HR-GR AVAIL)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
43	4.729E-8	0.27	LOOPGR :17-45-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	5.000E-3		AFW-TDP-TM-1A	AFW TDP UNAVAILABLE DUE TO TEST AND MAINTENANCE
	5.826E-1		DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	9.135E-1		/DE-OPRGR-09H2	DE for fail to recover OSP at 9 hrs, given fail to recover in first 2 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	5.250E-2		OEP-XHE-XX-NR01HGR2	CONVOLUTION FACTOR FOR 2FTR-OPR (1HR-GR AVAIL)
		EndState	->CD	Added through Event Tree Add
44	4.301E-8	0.24	LOOPGR :17-06-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.500E-3		ACP-CRB-CC-1726	OFFSITE POWER SUPPLY BREAKER 1726 FAILS TO OPEN
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)

#	Prob/Freq	Total %	Cut Set	Description
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.000E-3		SWS-MOV-CC-16766	SWS HEADER A INLET ISOL MOV 1-67-66 TO DGN A HEAT EXCHANGERS
		EndState	->CD	Added through Event Tree Add
45	4.301E-8	0.24	LOOPGR :17-06-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.500E-3		ACP-CRB-CC-1718	OFFSITE POWER SUPPLY BREAKER 1718 FAILS TO OPEN
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.000E-3		SWS-MOV-CC-16767	SWS HEADER B INLET ISOL MOV 1-67-67 TO DGN B HTX
		EndState	->CD	Added through Event Tree Add
46	4.179E-8	0.23	LOOPGR :17-45-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN
	4.174E-1		/DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	2.393E-4		EPS-DGN-CF-RUN12	CCF OF UNIT 1 & 2 DIESEL GENERATORS TO RUN
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	1.750E-1		OEP-XHE-XX-NR01HGR0	CONVOLUTION FACTOR FOR CCF-OPR (1HR-GR Avail)
		EndState	->CD	Added through Event Tree Add
47	4.159E-8	0.23	LOOPGR :17-03-10-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	1.607E-1		DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.890E-1		DE-OPRGR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	2.393E-4		EPS-DGN-CF-RUN12	CCF OF UNIT 1 & 2 DIESEL GENERATORS TO RUN

#	Prob/Freq	Total %	Cut Set	Description
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	2.340E-1		OEP-XHE-XX-NR04HGR0	CONVOLUTION FACTOR FOR CCF-OPR (4HR-GR Avail)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
48	4.004E-8	0.22	LOOPGR :15-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	4.000E-3		AFW-MDP-TM-1A	AFW MDP 1A UNAVAILABLE DUE TO TEST AND MAINTENANCE
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
	5.930E-2		PPR-MOV-FC-332	PORV BLOCK VALVE FCV-68-332 CLOSED DURING POWER (PSA)
		EndState	->CD	Added through Event Tree Add
49	4.004E-8	0.22	LOOPGR :15-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	4.000E-3		AFW-MDP-TM-1B	AFW MDP 1B UNAVAILABLE DUE TO TEST AND MAINTENANCE
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	5.930E-2		PPR-MOV-FC-333	PORV BLOCK VALVE FCV-68-333 CLOSED DURING POWER (PSA)
		EndState	->CD	Added through Event Tree Add
50	3.965E-8	0.22	LOOPGR :17-03-10-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	1.607E-1		DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.890E-1		DE-OPRGR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	9.180E-2		OEP-XHE-XX-NR04HGR2	CONVOLUTION FACTOR FOR 2FTR-OPR (4HR-GR AVAIL)

#	Prob/Freq	Total %	Cut Set	Description
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add

C.3.2 Sequoyah SU3 (Case 1) Cutset Sequence and Report

SU3 (Case 1) Top 5 Dominant Sequences

LOERCW 04-02-10-01	LOSWS, /RPS, /OEP, /AFW1, /PORV, LOSC1, REC-SWS, /RCPT, /RSD, /BP1, BP2, /FW, HPI, SSC1, /L1-CDF
LOCCW 04-14-02-01	LOCCW, /RPS, /OEP, /AFW, /PORV, LOSC-C, REC-CCW, RCPT, /HPI-M, /AFW-A, /SSC, LPR, /L1-CDF
LOCCW 04-02-05-01	LOCCW, /RPS, /OEP, /AFW, /PORV, LOSC-C, REC-CCW, /RCPT, /RSD, /BP1, BP2, /FW, /HPI, SSC, HPR, /L1-CDF
LOERCW 04-02-10-01	LOSWS, /RPS, /OEP, /AFW1, /PORV, LOSC1, REC-SWS, /RCPT, /RSD, /BP1, BP2, /FW, HPI, SSC1, /L1-CDF
LOERCW :03-02-05-01	/RPS,/OEP,/AFW1,/PORV,LOSC1,/REC-SWS,/RCPT,/RSD,/BP1,BP2,/FW,/HPI,SSC,HPR,/L1-CDF

SU3 (Case 1) Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	4.139E-5	16.83	LOERCW :04-02-10-01	
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW
	4.110E-3		IE-SWS-STR-CF-PGALL	CCF OF ALL 4 ERCW STRAINERS
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	5.100E-2		SWS-XHE-XL-NOREC	OPERATOR FAILS TO RECOVER ERCW
		EndState	->CD	Added through Event Tree Add
2	1.752E-5	7.12	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	8.760E-4		IE-CCW-HTX-PG-HX1A1	CCW HEAT EXCHANGER HX 1A-1 PLUGS
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
3	1.752E-5	7.12	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	8.760E-4		IE-CCW-HTX-PG-HX1A2	CCW HEAT EXCHANGER HX 1A-2 PLUGS
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
4	1.619E-5	6.58	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER

#	Prob/Freq	Total %	Cut Set	Description
	8.097E-4		IE-CCW-MDP-CF-FR1ABC	CCF OF CCW MDPs 1A-A, 1B-B, C-S
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
5	1.574E-5	6.4	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	8.760E-4		IE-CCW-HTX-PG-HX1A1	CCW HEAT EXCHANGER HX 1A-1 PLUGS
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
6	1.574E-5	6.4	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	8.760E-4		IE-CCW-HTX-PG-HX1A2	CCW HEAT EXCHANGER HX 1A-2 PLUGS
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
7	1.455E-5	5.92	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	8.097E-4		IE-CCW-MDP-CF-FR1ABC	CCF OF CCW MDPs 1A-A, 1B-B, C-S
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
8	1.119E-5	4.55	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.594E-4		IE-CCW-MDP-CF-FR1A1B	CCF OF CCW MDPs 1A-A, 1B-B
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
9	1.005E-5	4.09	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW

#	Prob/Freq	Total %	Cut Set	Description
	5.594E-4		IE-CCW-MDP-CF-FR1A1B	CCF OF CCW MDPs 1A-A, 1B-B
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
10	8.760E-6	3.56	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.000E-1		CCW-CFG-AP-P1AARUN	CCW PUMP 1A-A IS RUNNING, 1B-B IS IN STANDBY
	1.000E+0		CCW-XHE-XL-1AA	OPERATOR FAILS TO RECOVER CCW PUMP 1A-A
	2.000E-2		CCW-XHE-XM-P1BB	OPERATOR FAILS TO ALIGN PUMP 1B-B
	4.380E-2		IE-CCW-MDP-FR-1AA	CCW PUMP 1A-A FAILS TO RUN (INITIATING EVENT)
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
11	8.760E-6	3.56	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.000E-1		CCW-CFG-AP-P1BBRUN	CCW PUMP 1B-B IS RUNNING, 1A-A IS IN STANDBY
	1.000E+0		CCW-XHE-XL-1BB	OPERATOR FAILS TO RECOVER CCW PUMP 1B-B
	2.000E-2		CCW-XHE-XM-P1AA	OPERATOR FAILS TO ALIGN PUMP 1A-A
	4.380E-2		IE-CCW-MDP-FR-1BB	CCW PUMP 1B-B FAILS TO RUN (INITIATING EVENT)
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
12	7.871E-6	3.2	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.000E-1		CCW-CFG-AP-P1BBRUN	CCW PUMP 1B-B IS RUNNING, 1A-A IS IN STANDBY
	1.000E+0		CCW-XHE-XL-1BB	OPERATOR FAILS TO RECOVER CCW PUMP 1B-B
	2.000E-2		CCW-XHE-XM-P1AA	OPERATOR FAILS TO ALIGN PUMP 1A-A
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	4.380E-2		IE-CCW-MDP-FR-1BB	CCW PUMP 1B-B FAILS TO RUN (INITIATING EVENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
13	7.871E-6	3.2	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.000E-1		CCW-CFG-AP-P1AARUN	CCW PUMP 1A-A IS RUNNING, 1B-B

#	Prob/Freq	Total %	Cut Set	Description
				IS IN STANDBY
	1.000E+0		CCW-XHE-XL-1AA	OPERATOR FAILS TO RECOVER CCW PUMP 1A-A
	2.000E-2		CCW-XHE-XM-P1BB	OPERATOR FAILS TO ALIGN PUMP 1B-B
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	4.380E-2		IE-CCW-MDP-FR-1AA	CCW PUMP 1A-A FAILS TO RUN (INITIATING EVENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
14	7.008E-6	2.85	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	3.504E-4		IE-SWS-MOV-OC-67365	FAILURE OF SWS HEADER B DISCHARGE MOV 67-365
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
15	7.008E-6	2.85	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	3.504E-4		IE-SWS-MOV-OC-6714	FAILURE OF SWS HEADER B DISCHARGE MOV 67-14
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
16	6.297E-6	2.56	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	3.504E-4		IE-SWS-MOV-OC-6714	FAILURE OF SWS HEADER B DISCHARGE MOV 67-14
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
17	6.297E-6	2.56	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	3.504E-4		IE-SWS-MOV-OC-67365	FAILURE OF SWS HEADER B DISCHARGE MOV 67-365
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS

#	Prob/Freq	Total %	Cut Set	Description
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
18	5.039E-6	2.05	LOERCW :04-02-10-01	
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW
	5.003E-4		IE-SWS-TSA-CF-PGALL	ERCW TRAVELING SCREEN PLUGS (INITIATING EVENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	5.100E-2		SWS-XHE-XL-NOREC	OPERATOR FAILS TO RECOVER ERCW
		EndState	->CD	Added through Event Tree Add
19	4.192E-6	1.7	LOERCW :04-14-10-01	
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW
	4.110E-3		IE-SWS-STR-CF-PGALL	CCF OF ALL 4 ERCW STRAINERS
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	5.100E-2		SWS-XHE-XL-NOREC	OPERATOR FAILS TO RECOVER ERCW
		EndState	->CD	Added through Event Tree Add
20	2.628E-6	1.07	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.000E-1		CCW-CFG-AP-P1AARUN	CCW PUMP 1A-A IS RUNNING, 1B-B IS IN STANDBY
	6.000E-3		CCW-MDP-TM-1BB	CCW PUMP 1B-B UNAVAILABLE DUE TO TEST OR MAINTENANCE
	1.000E+0		CCW-XHE-XL-1AA	OPERATOR FAILS TO RECOVER CCW PUMP 1A-A
	4.380E-2		IE-CCW-MDP-FR-1AA	CCW PUMP 1A-A FAILS TO RUN (INITIATING EVENT)
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
21	2.628E-6	1.07	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.000E-1		CCW-CFG-AP-P1BBRUN	CCW PUMP 1B-B IS RUNNING, 1A-A IS IN STANDBY
	6.000E-3		CCW-MDP-TM-1AA	CCW PUMP 1A-A UNAVAILABLE DUE TO TEST AND MAINTENANCE
	1.000E+0		CCW-XHE-XL-1BB	OPERATOR FAILS TO RECOVER CCW PUMP 1B-B
	4.380E-2		IE-CCW-MDP-FR-1BB	CCW PUMP 1B-B FAILS TO RUN (INITIATING EVENT)
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
22	2.361E-6	0.96	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.000E-1		CCW-CFG-AP-P1AARUN	CCW PUMP 1A-A IS RUNNING, 1B-B IS IN STANDBY

#	Prob/Freq	Total %	Cut Set	Description
	6.000E-3		CCW-MDP-TM-1BB	CCW PUMP 1B-B UNAVAILABLE DUE TO TEST OR MAINTENANCE
	1.000E+0		CCW-XHE-XL-1AA	OPERATOR FAILS TO RECOVER CCW PUMP 1A-A
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	4.380E-2		IE-CCW-MDP-FR-1AA	CCW PUMP 1A-A FAILS TO RUN (INITIATING EVENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
23	2.361E-6	0.96	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.000E-1		CCW-CFG-AP-P1BBRUN	CCW PUMP 1B-B IS RUNNING, 1A-A IS IN STANDBY
	6.000E-3		CCW-MDP-TM-1AA	CCW PUMP 1A-A UNAVAILABLE DUE TO TEST AND MAINTENANCE
	1.000E+0		CCW-XHE-XL-1BB	OPERATOR FAILS TO RECOVER CCW PUMP 1B-B
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	4.380E-2		IE-CCW-MDP-FR-1BB	CCW PUMP 1B-B FAILS TO RUN (INITIATING EVENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
24	2.096E-6	0.85	LOERCW :04-03-10-01	
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW
	4.110E-3		IE-SWS-STR-CF-PGALL	CCF OF ALL 4 ERCW STRAINERS
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	5.100E-2		SWS-XHE-XL-NOREC	OPERATOR FAILS TO RECOVER ERCW
		EndState	->CD	Added through Event Tree Add
25	1.623E-6	0.66	LOERCW :03-02-05-01	
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW
	2.000E-3		HPR-XHE-XM-RECIRC	OPERATOR FAILS TO START HIGH PRESSURE RECIRC
	4.110E-3		IE-SWS-STR-CF-PGALL	CCF OF ALL 4 ERCW STRAINERS
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS

#	Prob/Freq	Total %	Cut Set	Description
		EndState	->CD	Added through Event Tree Add
26	1.200E-6	0.49	VSLOCA :03-01	
	2.000E-3		IE-VSLOCA	VERY SMALL LOCA
	3.000E-1		HPI-XHE-XM-RWSTR1	OPERATOR FAILS TO REFILL THE RWST
	2.000E-3		HPR-XHE-XM-RECIRC	OPERATOR FAILS TO START HIGH PRESSURE RECIRC
		EndState	->CD	Added through Event Tree Add
27	1.200E-6	0.49	SLOCA :05-01	
	6.000E-4		IE-SLOCA	SMALL LOCA
	2.000E-3		HPR-XHE-XM-RECIRC	OPERATOR FAILS TO START HIGH PRESSURE RECIRC
		EndState	->CD	Added through Event Tree Add
28	8.760E-7	0.36	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.000E-1		CCW-CFG-AP-P1AARUN	CCW PUMP 1A-A IS RUNNING, 1B-B IS IN STANDBY
	2.000E-3		CCW-MDP-FS-1BB	CCW PUMP 1B-B FAILS TO START
	1.000E+0		CCW-XHE-XL-1AA	OPERATOR FAILS TO RECOVER CCW PUMP 1A-A
	4.380E-2		IE-CCW-MDP-FR-1AA	CCW PUMP 1A-A FAILS TO RUN (INITIATING EVENT)
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add

C.3.3 Sequoyah SU3 (Case 2) Cutset Sequence and Report

SU3 (Case 2) Top 5 Dominant Sequences

LOERCW 04-02-10-01	LOSWS, /RPS, /OEP, /AFW1, /PORV, LOSC1, REC-SWS, /RCPT, /RSD, /BP1, BP2, /FW, HPI, SSC1, /L1-CDF
LOCCW 04-02-05-01	LOCCW, /RPS, /OEP, /AFW, /PORV, LOSC-C, REC-CCW, /RCPT, /RSD, /BP1, BP2, /FW, /HPI, SSC, HPR, /L1-CDF
LOCCW 04-14-02-01	LOCCW, /RPS, /OEP, /AFW, /PORV, LOSC-C, REC-CCW, RCPT, /HPI-M, /AFW-A, /SSC, LPR, /L1-CDF
LOERCW 04-03-10-01	/RPS,/OEP,/AFW1,/PORV,LOSC1,/REC-SWS,/RCPT,/RSD,BP1,/BP2,/FW,HPI,SSC,/L1-CDF
LOERCW 03-02-05-01	/RPS,/OEP,/AFW1,/PORV,LOSC1,/REC-SWS,/RCPT,/RSD,/BP1,BP2,/FW,/HPI,SSC,HPR,/L1-CDF

SU3 (Case 2) Top 90%

#	Prob/Freq	Total %	Cut Set	Description
1	4.139E-5	20.9	LOERCW :04-02-10-01	
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW
	4.110E-3		IE-SWS-STR-CF-PGALL	CCF OF ALL 4 ERCW STRAINERS
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	5.100E-2		SWS-XHE-XL-NOREC	OPERATOR FAILS TO RECOVER ERCW

#	Prob/Freq	Total %	Cut Set	Description
		EndState	->CD	Added through Event Tree Add
2	1.574E-5	7.95	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	8.760E-4		IE-CCW-HTX-PG-HX1A1	CCW HEAT EXCHANGER HX 1A-1 PLUGS
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
3	1.574E-5	7.95	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	8.760E-4		IE-CCW-HTX-PG-HX1A2	CCW HEAT EXCHANGER HX 1A-2 PLUGS
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
4	1.455E-5	7.35	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	8.097E-4		IE-CCW-MDP-CF-FR1ABC	CCF OF CCW MDPs 1A-A, 1B-B, C-S
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
5	1.005E-5	5.08	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	5.594E-4		IE-CCW-MDP-CF-FR1A1B	CCF OF CCW MDPs 1A-A, 1B-B
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
6	8.760E-6	4.42	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	8.760E-4		IE-CCW-HTX-PG-HX1A1	CCW HEAT EXCHANGER HX 1A-1

#	Prob/Freq	Total %	Cut Set	Description
				PLUGS
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
7	8.760E-6	4.42	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	8.760E-4		IE-CCW-HTX-PG-HX1A2	CCW HEAT EXCHANGER HX 1A-2 PLUGS
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
8	8.097E-6	4.09	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	8.097E-4		IE-CCW-MDP-CF-FR1ABC	CCF OF CCW MDPs 1A-A, 1B-B, C-S
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
9	7.872E-6	3.97	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.000E-1		CCW-CFG-AP-P1BBRUN	CCW PUMP 1B-B IS RUNNING, 1A-A IS IN STANDBY
	1.000E+0		CCW-XHE-XL-1BB	OPERATOR FAILS TO RECOVER CCW PUMP 1B-B
	2.000E-2		CCW-XHE-XM-P1AA	OPERATOR FAILS TO ALIGN PUMP 1A-A
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	4.380E-2		IE-CCW-MDP-FR-1BB	CCW PUMP 1B-B FAILS TO RUN (INITIATING EVENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
10	7.872E-6	3.97	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.000E-1		CCW-CFG-AP-P1AARUN	CCW PUMP 1A-A IS RUNNING, 1B-B IS IN STANDBY
	1.000E+0		CCW-XHE-XL-1AA	OPERATOR FAILS TO RECOVER CCW PUMP 1A-A
	2.000E-2		CCW-XHE-XM-P1BB	OPERATOR FAILS TO ALIGN PUMP 1B-B
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	4.380E-2		IE-CCW-MDP-FR-1AA	CCW PUMP 1A-A FAILS TO RUN (INITIATING EVENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
11	6.298E-6	3.18	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING

#	Prob/Freq	Total %	Cut Set	Description
				WATER
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	3.504E-4		IE-SWS-MOV-OC-6714	FAILURE OF SWS HEADER B DISCHARGE MOV 67-14
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
12	6.298E-6	3.18	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	3.504E-4		IE-SWS-MOV-OC-67365	FAILURE OF SWS HEADER B DISCHARGE MOV 67-365
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
13	5.594E-6	2.82	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.594E-4		IE-CCW-MDP-CF-FR1A1B	CCF OF CCW MDPs 1A-A, 1B-B
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
14	5.039E-6	2.54	LOERCW :04-02-10-01	
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW
	5.003E-4		IE-SWS-TSA-CF-PGALL	ERCW TRAVELING SCREEN PLUGS (INITIATING EVENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	5.100E-2		SWS-XHE-XL-NOREC	OPERATOR FAILS TO RECOVER ERCW
		EndState	->CD	Added through Event Tree Add
15	4.380E-6	2.21	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.000E-1		CCW-CFG-AP-P1AARUN	CCW PUMP 1A-A IS RUNNING, 1B-B IS IN STANDBY
	1.000E+0		CCW-XHE-XL-1AA	OPERATOR FAILS TO RECOVER CCW PUMP 1A-A
	2.000E-2		CCW-XHE-XM-P1BB	OPERATOR FAILS TO ALIGN PUMP 1B-B
	4.380E-2		IE-CCW-MDP-FR-1AA	CCW PUMP 1A-A FAILS TO RUN (INITIATING EVENT)
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add

#	Prob/Freq	Total %	Cut Set	Description
16	4.380E-6	2.21	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.000E-1		CCW-CFG-AP-P1BBRUN	CCW PUMP 1B-B IS RUNNING, 1A-A IS IN STANDBY
	1.000E+0		CCW-XHE-XL-1BB	OPERATOR FAILS TO RECOVER CCW PUMP 1B-B
	2.000E-2		CCW-XHE-XM-P1AA	OPERATOR FAILS TO ALIGN PUMP 1A-A
	4.380E-2		IE-CCW-MDP-FR-1BB	CCW PUMP 1B-B FAILS TO RUN (INITIATING EVENT)
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
17	3.504E-6	1.77	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	3.504E-4		IE-SWS-MOV-OC-67365	FAILURE OF SWS HEADER B DISCHARGE MOV 67-365
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
18	3.504E-6	1.77	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	3.504E-4		IE-SWS-MOV-OC-6714	FAILURE OF SWS HEADER B DISCHARGE MOV 67-14
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
19	2.362E-6	1.19	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.000E-1		CCW-CFG-AP-P1AARUN	CCW PUMP 1A-A IS RUNNING, 1B-B IS IN STANDBY
	6.000E-3		CCW-MDP-TM-1BB	CCW PUMP 1B-B UNAVAILABLE DUE TO TEST OR MAINTENANCE
	1.000E+0		CCW-XHE-XL-1AA	OPERATOR FAILS TO RECOVER CCW PUMP 1A-A
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	4.380E-2		IE-CCW-MDP-FR-1AA	CCW PUMP 1A-A FAILS TO RUN (INITIATING EVENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
20	2.362E-6	1.19	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.000E-1		CCW-CFG-AP-P1BBRUN	CCW PUMP 1B-B IS RUNNING, 1A-A IS IN STANDBY
	6.000E-3		CCW-MDP-TM-1AA	CCW PUMP 1A-A UNAVAILABLE DUE TO TEST AND MAINTENANCE
	1.000E+0		CCW-XHE-XL-1BB	OPERATOR FAILS TO RECOVER CCW PUMP 1B-B

#	Prob/Freq	Total %	Cut Set	Description
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	4.380E-2		IE-CCW-MDP-FR-1BB	CCW PUMP 1B-B FAILS TO RUN (INITIATING EVENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
21	2.096E-6	1.06	LOERCW :04-03-10-01	
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW
	4.110E-3		IE-SWS-STR-CF-PGALL	CCF OF ALL 4 ERCW STRAINERS
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	5.100E-2		SWS-XHE-XL-NOREC	OPERATOR FAILS TO RECOVER ERCW
		EndState	->CD	Added through Event Tree Add
22	2.096E-6	1.06	LOERCW :04-14-10-01	
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW
	4.110E-3		IE-SWS-STR-CF-PGALL	CCF OF ALL 4 ERCW STRAINERS
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	5.100E-2		SWS-XHE-XL-NOREC	OPERATOR FAILS TO RECOVER ERCW
		EndState	->CD	Added through Event Tree Add
23	1.623E-6	0.82	LOERCW :03-02-05-01	
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW
	2.000E-3		HPR-XHE-XM-RECIRC	OPERATOR FAILS TO START HIGH PRESSURE RECIRC
	4.110E-3		IE-SWS-STR-CF-PGALL	CCF OF ALL 4 ERCW STRAINERS
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
24	1.314E-6	0.66	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.000E-1		CCW-CFG-AP-P1AARUN	CCW PUMP 1A-A IS RUNNING, 1B-B IS IN STANDBY
	6.000E-3		CCW-MDP-TM-1BB	CCW PUMP 1B-B UNAVAILABLE DUE TO TEST OR MAINTENANCE
	1.000E+0		CCW-XHE-XL-1AA	OPERATOR FAILS TO RECOVER CCW PUMP 1A-A
	4.380E-2		IE-CCW-MDP-FR-1AA	CCW PUMP 1A-A FAILS TO RUN (INITIATING EVENT)
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
25	1.314E-6	0.66	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER

#	Prob/Freq	Total %	Cut Set	Description
	5.000E-1		CCW-CFG-AP-P1BBRUN	CCW PUMP 1B-B IS RUNNING, 1A-A IS IN STANDBY
	6.000E-3		CCW-MDP-TM-1AA	CCW PUMP 1A-A UNAVAILABLE DUE TO TEST AND MAINTENANCE
	1.000E+0		CCW-XHE-XL-1BB	OPERATOR FAILS TO RECOVER CCW PUMP 1B-B
	4.380E-2		IE-CCW-MDP-FR-1BB	CCW PUMP 1B-B FAILS TO RUN (INITIATING EVENT)
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
26	1.200E-6	0.61	VSLOCA :03-01	
	2.000E-3		IE-VSLOCA	VERY SMALL LOCA
	3.000E-1		HPI-XHE-XM-RWSTR1	OPERATOR FAILS TO REFILL THE RWST
	2.000E-3		HPR-XHE-XM-RECIRC	OPERATOR FAILS TO START HIGH PRESSURE RECIRC
		EndState	->CD	Added through Event Tree Add
27	1.200E-6	0.61	SLOCA :05-01	
	6.000E-4		IE-SLOCA	SMALL LOCA
	2.000E-3		HPR-XHE-XM-RECIRC	OPERATOR FAILS TO START HIGH PRESSURE RECIRC
		EndState	->CD	Added through Event Tree Add
28	7.972E-7	0.4	LOCCW :04-03-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	8.760E-4		IE-CCW-HTX-PG-HX1A1	CCW HEAT EXCHANGER HX 1A-1 PLUGS
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
29	7.972E-7	0.4	LOCCW :04-03-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	8.760E-4		IE-CCW-HTX-PG-HX1A2	CCW HEAT EXCHANGER HX 1A-2 PLUGS
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
30	7.872E-7	0.4	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.000E-1		CCW-CFG-AP-P1AARUN	CCW PUMP 1A-A IS RUNNING, 1B-B IS IN STANDBY
	2.000E-3		CCW-MDP-FS-1BB	CCW PUMP 1B-B FAILS TO START

#	Prob/Freq	Total %	Cut Set	Description
	1.000E+0		CCW-XHE-XL-1AA	OPERATOR FAILS TO RECOVER CCW PUMP 1A-A
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	4.380E-2		IE-CCW-MDP-FR-1AA	CCW PUMP 1A-A FAILS TO RUN (INITIATING EVENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
31	7.872E-7	0.4	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.000E-1		CCW-CFG-AP-P1BBRUN	CCW PUMP 1B-B IS RUNNING, 1A-A IS IN STANDBY
	2.000E-3		CCW-MDP-FS-1AA	CCW PUMP 1A-A FAILS TO START
	1.000E+0		CCW-XHE-XL-1BB	OPERATOR FAILS TO RECOVER CCW PUMP 1B-B
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	4.380E-2		IE-CCW-MDP-FR-1BB	CCW PUMP 1B-B FAILS TO RUN (INITIATING EVENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
32	7.496E-7	0.38	LOERCW-A :03-02-05-01	
	1.000E+0		IE-LOERCWA	LOSS OF ERCW TRAIN A
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	2.000E-3		HPR-XHE-XM-RECIRC	OPERATOR FAILS TO START HIGH PRESSURE RECIRC
	2.085E-2		IE-SWS-MDP-CF-FRTRNA	INITIATING EVENT RUNNING ERCW TRAIN A PUMPS FAIL TO RUN DUE TO COMMON CAUSE
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
33	7.368E-7	0.37	LOCCW :04-03-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	8.097E-4		IE-CCW-MDP-CF-FR1ABC	CCF OF CCW MDPs 1A-A, 1B-B, C-S
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS

#	Prob/Freq	Total %	Cut Set	Description
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add

C.3.4 Sequoyah SU5 Cutset Sequence and Report

SU5 Top 5 Dominant Sequences

VSLOCA 08-01	/RPS,/FW,HPI-CHGINJ,SSC1,/L1-CDF
VSLOCA 07-01	/RPS,/FW,HPI-CHGINJ,/SSC1,LPI,/L1-CDF
VSLOCA 03-01	/RPS,/FW,/HPI-CHGINJ,HPR,RFL1,/L1-CDF
VSLOCA 06-01	/RPS,/FW,HPI-CHGINJ,/SSC1,/LPI,RHR,LPR,/L1-CDF
VSLOCA 16-01	/RPS,FW,/HPI,BLEED,/L1-CDF

SU5 Top 50 Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	4.560E-7	9.78	VSLOCA :08-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	2.280E-5		CVC-MOV-CF-3940	CCF OF CVC DISCHARGE MOVS 63-39/63-40 TO OPEN
	2.000E-2		OPR-XHE-XM-DEPRCS1	OPERATOR FAILS TO DEPRESSURIZE RCS / SECONDARY SIDE - RAPID
		EndState	->CD	Added through Event Tree Add
2	4.560E-7	9.78	VSLOCA :08-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	2.280E-5		CVC-MOV-CF-2526	CCF OF CVC DISCHARGE MOVS 63-25/63-26 TO OPEN
	2.000E-2		OPR-XHE-XM-DEPRCS1	OPERATOR FAILS TO DEPRESSURIZE RCS / SECONDARY SIDE - RAPID
		EndState	->CD	Added through Event Tree Add
3	4.560E-7	9.78	VSLOCA :08-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	2.280E-5		CVC-MOV-CF-13536	CCF OF CVC SUCTION MOVS 62-135/136 TO OPEN
	2.000E-2		OPR-XHE-XM-DEPRCS1	OPERATOR FAILS TO DEPRESSURIZE RCS / SECONDARY SIDE - RAPID
		EndState	->CD	Added through Event Tree Add
4	3.577E-7	7.67	VSLOCA :07-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	3.577E-7		SWS-TSA-CF-PG-ALL	CCF OF 4-OF-4 ERCW TRAVELING SCREENS
		EndState	->CD	Added through Event Tree Add
5	2.400E-7	5.15	VSLOCA :08-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	1.200E-5		CVC-CKV-CC-63581	CHARGING DISCHARGE CHECK VALVE 63-581 FAILS TO OPEN
	2.000E-2		OPR-XHE-XM-DEPRCS1	OPERATOR FAILS TO DEPRESSURIZE RCS / SECONDARY SIDE - RAPID
		EndState	->CD	Added through Event Tree Add
6	2.400E-7	5.15	VSLOCA :08-01	

#	Prob/Freq	Total %	Cut Set	Description
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	1.200E-5		CVC-CKV-CC-62504	CHARGING SYSTEM SUCTION CHECK VALVE 62-504 FAILS
	2.000E-2		OPR-XHE-XM-DEPRCS1	OPERATOR FAILS TO DEPRESSURIZE RCS / SECONDARY SIDE - RAPID
		EndState	->CD	Added through Event Tree Add
7	1.514E-7	3.25	VSLOCA :08-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	7.570E-6		CVC-MOV-CF-62901	CCF OF CVC NORMAL DISCH MOVs FCV-62-90/ FCV-62-91 TO CLOSE
	2.000E-2		OPR-XHE-XM-DEPRCS1	OPERATOR FAILS TO DEPRESSURIZE RCS / SECONDARY SIDE - RAPID
		EndState	->CD	Added through Event Tree Add
8	1.490E-7	3.2	VSLOCA :03-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	1.200E-3		HPI-AOV-CC-62140	FAILURE OF MAKEUP AOV FCV-62-140 TO OPEN
	1.242E-4		RHR-FAN-CF-RHRRMS	CCF OF RHR MDP ROOM COOLING FANS TO START
		EndState	->CD	Added through Event Tree Add
9	1.490E-7	3.2	VSLOCA :03-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	1.200E-3		HPI-AOV-OO-62237	FAILURE OF HPI MAKEUP AOV FCV-62-237 TO CLOSE
	1.242E-4		RHR-FAN-CF-RHRRMS	CCF OF RHR MDP ROOM COOLING FANS TO START
		EndState	->CD	Added through Event Tree Add
10	1.490E-7	3.2	VSLOCA :03-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	1.200E-3		HPI-AOV-CC-62143	FAILURE OF MAKEUP AOV FCV-62-143 TO OPEN
	1.242E-4		RHR-FAN-CF-RHRRMS	CCF OF RHR MDP ROOM COOLING FANS TO START
		EndState	->CD	Added through Event Tree Add
11	9.143E-8	1.96	VSLOCA :08-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	9.143E-6		CVC-FAN-CF-FRCVCRM	CCF OF CVC MDP ROOM COOLING FANS
	5.000E-1		CVC-SYS-FC-1ARUN	CVC PUMP 1A-A IS NORMALLY RUNNING
	2.000E-2		OPR-XHE-XM-DEPRCS1	OPERATOR FAILS TO DEPRESSURIZE RCS / SECONDARY SIDE - RAPID
		EndState	->CD	Added through Event Tree Add
12	9.143E-8	1.96	VSLOCA :08-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	9.143E-6		CVC-FAN-CF-FRCVCRM	CCF OF CVC MDP ROOM COOLING FANS
	5.000E-1		CVC-SYS-FC-1BRUN	CVC PUMP 1B-B IS NORMALLY RUNNING
	2.000E-2		OPR-XHE-XM-DEPRCS1	OPERATOR FAILS TO DEPRESSURIZE RCS / SECONDARY SIDE - RAPID
		EndState	->CD	Added through Event Tree Add
13	7.524E-8	1.61	VSLOCA :03-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA

#	Prob/Freq	Total %	Cut Set	Description
	1.200E-3		HPI-AOV-CC-62140	FAILURE OF MAKEUP AOV FCV-62-140 TO OPEN
	6.270E-5		RHR-MDP-CF-STRT	RHR PUMP COMMON CAUSE FAILURE TO START
		EndState	->CD	Added through Event Tree Add
14	7.524E-8	1.61	VSLOCA :03-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	1.200E-3		HPI-AOV-OO-62237	FAILURE OF HPI MAKEUP AOV FCV-62-237 TO CLOSE
	6.270E-5		RHR-MDP-CF-STRT	RHR PUMP COMMON CAUSE FAILURE TO START
		EndState	->CD	Added through Event Tree Add
15	7.524E-8	1.61	VSLOCA :03-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	1.200E-3		HPI-AOV-CC-62143	FAILURE OF MAKEUP AOV FCV-62-143 TO OPEN
	6.270E-5		RHR-MDP-CF-STRT	RHR PUMP COMMON CAUSE FAILURE TO START
		EndState	->CD	Added through Event Tree Add
16	6.681E-8	1.43	VSLOCA :03-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	5.379E-4		HPI-MDP-FR-MKUP	FAILURE OF PRIMARY MAKEUP PUMP TO RUN
	1.242E-4		RHR-FAN-CF-RHRRMS	CCF OF RHR MDP ROOM COOLING FANS TO START
		EndState	->CD	Added through Event Tree Add
17	6.000E-8	1.29	VSLOCA :03-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	1.200E-3		HPI-AOV-CC-62143	FAILURE OF MAKEUP AOV FCV-62-143 TO OPEN
	5.000E-5		HPR-SMP-PG-SMP	FAIULURE OF SUMP
		EndState	->CD	Added through Event Tree Add
18	6.000E-8	1.29	VSLOCA :03-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	1.200E-3		HPI-AOV-CC-62140	FAILURE OF MAKEUP AOV FCV-62-140 TO OPEN
	5.000E-5		HPR-SMP-PG-SMP	FAIULURE OF SUMP
		EndState	->CD	Added through Event Tree Add
19	6.000E-8	1.29	VSLOCA :03-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	1.200E-3		HPI-AOV-OO-62237	FAILURE OF HPI MAKEUP AOV FCV-62-237 TO CLOSE
	5.000E-5		HPR-SMP-PG-SMP	FAIULURE OF SUMP
		EndState	->CD	Added through Event Tree Add
20	4.800E-8	1.03	VSLOCA :07-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	4.800E-8		HPI-TNK-FC-RWST	RWST NOT AVAILABLE
		EndState	->CD	Added through Event Tree Add
21	3.373E-8	0.72	VSLOCA :03-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	5.379E-4		HPI-MDP-FR-MKUP	FAILURE OF PRIMARY MAKEUP PUMP TO RUN
	6.270E-5		RHR-MDP-CF-STRT	RHR PUMP COMMON CAUSE FAILURE TO START

#	Prob/Freq	Total %	Cut Set	Description
		EndState	->CD	Added through Event Tree Add
22	2.822E-8	0.61	VSLOCA :06-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	1.680E-4		SWS-STR-PG-A1AA	SWS TRAIN 1A DISCH STRAINER A1AA FAILS
	1.680E-4		SWS-STR-PG-B1BB	SWS TRAIN 1B DISCH TRAINER B1BB FAILS
		EndState	->CD	Added through Event Tree Add
23	2.736E-8	0.59	VSLOCA :03-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	1.200E-3		HPI-AOV-CC-62143	FAILURE OF MAKEUP AOV FCV-62-143 TO OPEN
	2.280E-5		HPR-MOV-CF-63811	CCF OF RHR SUPPLY TO HPI ISOL VALVES 63-8/11
		EndState	->CD	Added through Event Tree Add
24	2.736E-8	0.59	VSLOCA :03-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	1.200E-3		HPI-AOV-CC-62140	FAILURE OF MAKEUP AOV FCV-62-140 TO OPEN
	2.280E-5		HPR-MOV-CF-63811	CCF OF RHR SUPPLY TO HPI ISOL VALVES 63-8/11
		EndState	->CD	Added through Event Tree Add
25	2.736E-8	0.59	VSLOCA :03-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	1.200E-3		HPI-AOV-OO-62237	FAILURE OF HPI MAKEUP AOV FCV-62-237 TO CLOSE
	2.280E-5		HPR-MOV-CF-63811	CCF OF RHR SUPPLY TO HPI ISOL VALVES 63-8/11
		EndState	->CD	Added through Event Tree Add
26	2.736E-8	0.59	VSLOCA :03-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	1.200E-3		HPI-AOV-CC-62143	FAILURE OF MAKEUP AOV FCV-62-143 TO OPEN
	2.280E-5		HPR-MOV-CF-SMP	CCF OF SUMP RECIRCULATION MOVs
		EndState	->CD	Added through Event Tree Add
27	2.736E-8	0.59	VSLOCA :03-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	1.200E-3		HPI-AOV-CC-62140	FAILURE OF MAKEUP AOV FCV-62-140 TO OPEN
	2.280E-5		HPR-MOV-CF-SMP	CCF OF SUMP RECIRCULATION MOVs
		EndState	->CD	Added through Event Tree Add
28	2.736E-8	0.59	VSLOCA :03-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	1.200E-3		HPI-AOV-OO-62237	FAILURE OF HPI MAKEUP AOV FCV-62-237 TO CLOSE
	2.280E-5		HPR-MOV-CF-SMP	CCF OF SUMP RECIRCULATION MOVs
		EndState	->CD	Added through Event Tree Add
29	2.736E-8	0.59	VSLOCA :03-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	2.280E-5		CCW-MOV-CF-701536	CCF OF RHR/CCW HEAT EXCHANGER MOV 70-156/153
	1.200E-3		HPI-AOV-CC-62143	FAILURE OF MAKEUP AOV FCV-62-143 TO OPEN
		EndState	->CD	Added through Event Tree Add

#	Prob/Freq	Total %	Cut Set	Description
30	2.736E-8	0.59	VSLOCA :03-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	2.280E-5		CCW-MOV-CF-701536	CCF OF RHR/CCW HEAT EXCHANGER MOV 70-156/153
	1.200E-3		HPI-AOV-OO-62237	FAILURE OF HPI MAKEUP AOV FCV-62-237 TO CLOSE
		EndState	->CD	Added through Event Tree Add
31	2.736E-8	0.59	VSLOCA :03-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	2.280E-5		CCW-MOV-CF-701536	CCF OF RHR/CCW HEAT EXCHANGER MOV 70-156/153
	1.200E-3		HPI-AOV-CC-62140	FAILURE OF MAKEUP AOV FCV-62-140 TO OPEN
		EndState	->CD	Added through Event Tree Add
32	2.690E-8	0.58	VSLOCA :03-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	5.379E-4		HPI-MDP-FR-MKUP	FAILURE OF PRIMARY MAKEUP PUMP TO RUN
	5.000E-5		HPR-SMP-PG-SMP	FAIULURE OF SUMP
		EndState	->CD	Added through Event Tree Add
33	2.328E-8	0.5	VSLOCA :08-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	2.328E-6		CVC-MDP-CF-RUN	CCF OF CHARGING PUMPS TO RUN
	5.000E-1		CVC-SYS-FC-1BRUN	CVC PUMP 1B-B IS NORMALLY RUNNING
	2.000E-2		OPR-XHE-XM-DEPRCS1	OPERATOR FAILS TO DEPRESSURIZE RCS / SECONDARY SIDE - RAPID
		EndState	->CD	Added through Event Tree Add
34	2.328E-8	0.5	VSLOCA :08-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	2.328E-6		CVC-MDP-CF-RUN	CCF OF CHARGING PUMPS TO RUN
	5.000E-1		CVC-SYS-FC-1ARUN	CVC PUMP 1A-A IS NORMALLY RUNNING
	2.000E-2		OPR-XHE-XM-DEPRCS1	OPERATOR FAILS TO DEPRESSURIZE RCS / SECONDARY SIDE - RAPID
		EndState	->CD	Added through Event Tree Add
35	2.252E-8	0.48	VSLOCA :07-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	1.126E-5		SWS-STR-CF-PG-ALL	CCF OF ALL 4 ERCW STRAINERS
	2.000E-3		SWS-XHE-XL-STR-NORM	
		EndState	->CD	Added through Event Tree Add
36	2.160E-8	0.46	VSLOCA :03-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	6.000E-3		CCW-MDP-TM-CS	CCW PUMP C-S IS IN TEST OR MAINTENANCE
	1.200E-3		HPI-AOV-CC-62143	FAILURE OF MAKEUP AOV FCV-62-143 TO OPEN
	3.000E-3		RHR-FAN-FS-RHRRMA	FAILURE OF RHR MDP-1A ROOM COOLING FAN TO START
		EndState	->CD	Added through Event Tree Add
37	2.160E-8	0.46	VSLOCA :03-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA

#	Prob/Freq	Total %	Cut Set	Description
	6.000E-3		CCW-MDP-TM-CS	CCW PUMP C-S IS IN TEST OR MAINTENANCE
	1.200E-3		HPI-AOV-OO-62237	FAILURE OF HPI MAKEUP AOV FCV-62-237 TO CLOSE
	3.000E-3		RHR-FAN-FS-RHRRMA	FAILURE OF RHR MDP-1A ROOM COOLING FAN TO START
		EndState	->CD	Added through Event Tree Add
38	2.160E-8	0.46	VSLOCA :03-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	6.000E-3		CCW-MDP-TM-CS	CCW PUMP C-S IS IN TEST OR MAINTENANCE
	1.200E-3		HPI-AOV-CC-62140	FAILURE OF MAKEUP AOV FCV-62-140 TO OPEN
	3.000E-3		RHR-FAN-FS-RHRRMA	FAILURE OF RHR MDP-1A ROOM COOLING FAN TO START
		EndState	->CD	Added through Event Tree Add
39	2.000E-8	0.43	VSLOCA :08-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	1.000E-3		CVC-MOV-OO-6290	FAILURE OF CVC MOV FCV-62-90 TO CLOSE
	1.000E-3		CVC-MOV-OO-6291	FAILURE OF CVC MOV FCV-62-91 TO CLOSE
	2.000E-2		OPR-XHE-XM-DEPRCS1	OPERATOR FAILS TO DEPRESSURIZE RCS / SECONDARY SIDE - RAPID
		EndState	->CD	Added through Event Tree Add
40	2.000E-8	0.43	VSLOCA :08-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	1.000E-3		CVC-MOV-CC-6339	CHARGING SYSTEM MOV 63-39 FAILS TO OPEN
	1.000E-3		CVC-MOV-CC-6340	CHARGING SYSTEM MOV 63-40 FAILS TO OPEN
	2.000E-2		OPR-XHE-XM-DEPRCS1	OPERATOR FAILS TO DEPRESSURIZE RCS / SECONDARY SIDE - RAPID
		EndState	->CD	Added through Event Tree Add
41	2.000E-8	0.43	VSLOCA :08-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	1.000E-3		CVC-MOV-CC-6325	CHARGING SYSTEM MOV 63-25 FAILS TO OPEN
	1.000E-3		CVC-MOV-CC-6326	CHARGING SYSTEM MOV 63-26 FAILS TO OPEN
	2.000E-2		OPR-XHE-XM-DEPRCS1	OPERATOR FAILS TO DEPRESSURIZE RCS / SECONDARY SIDE - RAPID
		EndState	->CD	Added through Event Tree Add
42	2.000E-8	0.43	VSLOCA :08-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	1.000E-3		CVC-MOV-CC-62135	CHARGING SYSTEM MOV 62-135 FAILS TO OPEN
	1.000E-3		CVC-MOV-CC-62136	CHARGING SYSTEM MOV 62-136 FAILS TO OPEN
	2.000E-2		OPR-XHE-XM-DEPRCS1	OPERATOR FAILS TO DEPRESSURIZE RCS / SECONDARY SIDE - RAPID
		EndState	->CD	Added through Event Tree Add
43	1.800E-8	0.39	VSLOCA :03-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA

#	Prob/Freq	Total %	Cut Set	Description
	1.200E-3		HPI-AOV-CC-62143	FAILURE OF MAKEUP AOV FCV-62-143 TO OPEN
	3.000E-3		RHR-FAN-FS-RHRRMA	FAILURE OF RHR MDP-1A ROOM COOLING FAN TO START
	5.000E-3		RHR-HTX-TM-HXB	RHR HEAT EXCHANGER HTX-B UNAVAILABLE DUE TO T & M
		EndState	->CD	Added through Event Tree Add
44	1.800E-8	0.39	VSLOCA :03-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	1.200E-3		HPI-AOV-CC-62143	FAILURE OF MAKEUP AOV FCV-62-143 TO OPEN
	3.000E-3		RHR-FAN-FS-RHRRMB	FAILURE OF RHR MDP-1B ROOM COOLING FAN TO START
	5.000E-3		RHR-HTX-TM-HXA	RHR HEAT EXCHANGER HTX-A UNAVAILABLE DUE TO T & M
		EndState	->CD	Added through Event Tree Add
45	1.800E-8	0.39	VSLOCA :03-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	1.200E-3		HPI-AOV-CC-62140	FAILURE OF MAKEUP AOV FCV-62-140 TO OPEN
	3.000E-3		RHR-FAN-FS-RHRRMA	FAILURE OF RHR MDP-1A ROOM COOLING FAN TO START
	5.000E-3		RHR-HTX-TM-HXB	RHR HEAT EXCHANGER HTX-B UNAVAILABLE DUE TO T & M
		EndState	->CD	Added through Event Tree Add
46	1.800E-8	0.39	VSLOCA :03-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	1.200E-3		HPI-AOV-CC-62140	FAILURE OF MAKEUP AOV FCV-62-140 TO OPEN
	3.000E-3		RHR-FAN-FS-RHRRMB	FAILURE OF RHR MDP-1B ROOM COOLING FAN TO START
	5.000E-3		RHR-HTX-TM-HXA	RHR HEAT EXCHANGER HTX-A UNAVAILABLE DUE TO T & M
		EndState	->CD	Added through Event Tree Add
47	1.800E-8	0.39	VSLOCA :03-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	1.200E-3		HPI-AOV-OO-62237	FAILURE OF HPI MAKEUP AOV FCV-62-237 TO CLOSE
	3.000E-3		RHR-FAN-FS-RHRRMA	FAILURE OF RHR MDP-1A ROOM COOLING FAN TO START
	5.000E-3		RHR-HTX-TM-HXB	RHR HEAT EXCHANGER HTX-B UNAVAILABLE DUE TO T & M
		EndState	->CD	Added through Event Tree Add
48	1.800E-8	0.39	VSLOCA :03-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	1.200E-3		HPI-AOV-OO-62237	FAILURE OF HPI MAKEUP AOV FCV-62-237 TO CLOSE
	3.000E-3		RHR-FAN-FS-RHRRMB	FAILURE OF RHR MDP-1B ROOM COOLING FAN TO START
	5.000E-3		RHR-HTX-TM-HXA	RHR HEAT EXCHANGER HTX-A UNAVAILABLE DUE TO T & M
		EndState	->CD	Added through Event Tree Add
49	1.371E-8	0.29	VSLOCA :07-01	

#	Prob/Freq	Total %	Cut Set	Description
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	1.371E-5		STB-ACX-CF-RUN	CCF OF AIR HANDLING UNITS 1A-A & 1B-B SHUT. BOARD ROOMS TO R
	1.000E-3		STB-XHE-XL-RECOV	OPERATOR FAILS TO RECOVER LOSS OF SHUTDOWN BOARD ROOM COOLING
		EndState	->CD	Added through Event Tree Add
50	1.252E-8	0.27	VSLOCA :03-01	
	1.000E+0		IE-VSLOCA	VERY SMALL LOCA
	1.200E-3		HPI-AOV-CC-62140	FAILURE OF MAKEUP AOV FCV-62-140 TO OPEN
	1.044E-5		RHR-MDP-CF-RUN	RHR PUMP COMMON CAUSE FAILURE TO RUN
		EndState	->CD	Added through Event Tree Add

C.3.5 Sequoyah HU3 Cutset Sequence and Report

HU3 Top 5 Dominant Sequences

LOERCW 04-02-10-01	LOSWS, /RPS, /OEP, /AFW1, /PORV, LOSC1, REC-SWS, /RCPT, /RSD, /BP1, BP2, /FW, HPI, SSC1, /L1-CDF
LOERCW 04-03-10-01	/RPS,/OEP,/AFW1,/PORV,LOSC1,/REC-SWS,/RCPT,/RSD,BP1,/BP2,/FW,HPI,SSC,/L1-CDF
LOCCW 04-02-05-01	LOCCW, /RPS, /OEP, /AFW, /PORV, LOSC-C, REC-CCW, /RCPT, /RSD, /BP1, BP2, /FW, /HPI, SSC, HPR, /L1-CDF
LOERCW 03-02-05-01	/RPS,/OEP,/AFW1,/PORV,LOSC1,/REC-SWS,/RCPT,/RSD,/BP1,BP2,/FW,/HPI,SSC,HPR,/L1-CDF
VSLOCA 03-01	/RPS,/FW,/HPI-CHGINJ,HPR,RFL1,/L1-CDF

HU3 Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	8.928E-5	72.72	LOERCW :04-02-10-01	
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW
	4.110E-3		IE-SWS-STR-CF-PGALL	CCF OF ALL 4 ERCW STRAINERS
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.100E-1		SWS-XHE-XL-NOREC	OPERATOR FAILS TO RECOVER ERCW
		EndState	->CD	Added through Event Tree Add
2	1.087E-5	8.85	LOERCW :04-02-10-01	
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW
	5.003E-4		IE-SWS-TSA-CF-PGALL	ERCW TRAVELING SCREEN PLUGS (INITIATING EVENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.100E-1		SWS-XHE-XL-NOREC	OPERATOR FAILS TO RECOVER ERCW
		EndState	->CD	Added through Event Tree Add

#	Prob/Freq	Total %	Cut Set	Description
3	4.521E-6	3.68	LOERCW :04-03-10-01	
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW
	4.110E-3		IE-SWS-STR-CF-PGALL	CCF OF ALL 4 ERCW STRAINERS
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.100E-1		SWS-XHE-XL-NOREC	OPERATOR FAILS TO RECOVER ERCW
		EndState	->CD	Added through Event Tree Add
4	1.730E-6	1.41	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	8.760E-4		IE-CCW-HTX-PG-HX1A1	CCW HEAT EXCHANGER HX 1A-1 PLUGS
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
5	1.730E-6	1.41	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	8.760E-4		IE-CCW-HTX-PG-HX1A2	CCW HEAT EXCHANGER HX 1A-2 PLUGS
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
6	1.623E-6	1.32	LOERCW :03-02-05-01	
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW
	2.000E-3		HPR-XHE-XM-RECIRC	OPERATOR FAILS TO START HIGH PRESSURE RECIRC
	4.110E-3		IE-SWS-STR-CF-PGALL	CCF OF ALL 4 ERCW STRAINERS
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
7	1.599E-6	1.3	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	8.097E-4		IE-CCW-MDP-CF-FR1ABC	CCF OF CCW MDPs 1A-A, 1B-B, C-S

#	Prob/Freq	Total %	Cut Set	Description
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
8	1.200E-6	0.98	VSLOCA :03-01	
	2.000E-3		IE-VSLOCA	VERY SMALL LOCA
	3.000E-1		HPI-XHE-XM-RWSTR1	OPERATOR FAILS TO REFILL THE RWST
	2.000E-3		HPR-XHE-XM-RECIRC	OPERATOR FAILS TO START HIGH PRESSURE RECIRC
		EndState	->CD	Added through Event Tree Add
9	1.200E-6	0.98	SLOCA :05-01	
	6.000E-4		IE-SLOCA	SMALL LOCA
	2.000E-3		HPR-XHE-XM-RECIRC	OPERATOR FAILS TO START HIGH PRESSURE RECIRC
		EndState	->CD	Added through Event Tree Add
10	1.130E-6	0.92	LOERCW :04-04-10-01	
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW
	4.110E-3		IE-SWS-STR-CF-PGALL	CCF OF ALL 4 ERCW STRAINERS
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.100E-1		SWS-XHE-XL-NOREC	OPERATOR FAILS TO RECOVER ERCW
		EndState	->CD	Added through Event Tree Add
11	1.105E-6	0.9	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	5.594E-4		IE-CCW-MDP-CF-FR1A1B	CCF OF CCW MDPs 1A-A, 1B-B
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
12	8.760E-7	0.71	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	8.760E-4		IE-CCW-HTX-PG-HX1A1	CCW HEAT EXCHANGER HX 1A-1 PLUGS
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
13	8.760E-7	0.71	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	8.760E-4		IE-CCW-HTX-PG-HX1A2	CCW HEAT EXCHANGER HX 1A-2 PLUGS
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add

#	Prob/Freq	Total %	Cut Set	Description
14	8.650E-7	0.7	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.000E-1		CCW-CFG-AP-P1BBRUN	CCW PUMP 1B-B IS RUNNING, 1A-A IS IN STANDBY
	1.000E+0		CCW-XHE-XL-1BB	OPERATOR FAILS TO RECOVER CCW PUMP 1B-B
	2.000E-2		CCW-XHE-XM-P1AA	OPERATOR FAILS TO ALIGN PUMP 1A-A
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	4.380E-2		IE-CCW-MDP-FR-1BB	CCW PUMP 1B-B FAILS TO RUN (INITIATING EVENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
15	8.650E-7	0.7	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.000E-1		CCW-CFG-AP-P1AARUN	CCW PUMP 1A-A IS RUNNING, 1B-B IS IN STANDBY
	1.000E+0		CCW-XHE-XL-1AA	OPERATOR FAILS TO RECOVER CCW PUMP 1A-A
	2.000E-2		CCW-XHE-XM-P1BB	OPERATOR FAILS TO ALIGN PUMP 1B-B
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	4.380E-2		IE-CCW-MDP-FR-1AA	CCW PUMP 1A-A FAILS TO RUN (INITIATING EVENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
16	8.097E-7	0.66	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	8.097E-4		IE-CCW-MDP-CF-FR1ABC	CCF OF CCW MDPs 1A-A, 1B-B, C-S
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
17	6.920E-7	0.56	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	3.504E-4		IE-SWS-MOV-OC-6714	FAILURE OF SWS HEADER B DISCHARGE MOV 67-14
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add

#	Prob/Freq	Total %	Cut Set	Description
18	6.920E-7	0.56	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	3.504E-4		IE-SWS-MOV-OC-67365	FAILURE OF SWS HEADER B DISCHARGE MOV 67-365
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
19	5.594E-7	0.46	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.594E-4		IE-CCW-MDP-CF-FR1A1B	CCF OF CCW MDPs 1A-A, 1B-B
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
20	5.503E-7	0.45	LOERCW :04-03-10-01	
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW
	5.003E-4		IE-SWS-TSA-CF-PGALL	ERCW TRAVELING SCREEN PLUGS (INITIATING EVENT)
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.100E-1		SWS-XHE-XL-NOREC	OPERATOR FAILS TO RECOVER ERCW
		EndState	->CD	Added through Event Tree Add

C.3.6 Sequoyah SA5 Cutset Sequence and Report

SA5 Top 5 Dominant Sequences

LOOPGR 17-06-1-01	/RPS,EPS,/AFW-B,/PORV-B,/RSD-B,/BP1,BP2,OPR-04H,DGR-O4H,/DE-OPRGR-10H4,/L1-CDF
LOOPGR 17-03-10-1-01	/RPS,EPS,/AFW-B,/PORV-B,/RSD-B,/BP1,/BP2,OPR-04H,DGR-04H,AFW-MAN,SG-DEP-LT1,/DE-OPRGR-10H4,/L1-CDF
LOOPGR 17-06-2-01	/RPS,EPS,/AFW-B,/PORV-B,RSD-B,/BP1,/O1,/OPR-03H,/HPI-LR,HPR-LR,/L1-CDF
LOOPGR 17-03-10-2-01	/RPS,EPS,/AFW-B,/PORV-B,/RSD-B,/BP1,/BP2,OPR-04H,DGR-O4H,AFW-MAN,SG-DEP-LT1,DE-OPRGR-10H4,/DE-OPRGR-17H10,/L1-CDF
LOOPGR 17-45-2-01	/RPS,EPS,AFW-B,OPR-01H,DGR-01H,DE-OPRGR-02H1,/DE-OPRGR-09H2,/L1-CDF

SA5 Top 50 Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	9.707E-5	21.59	LOOPGR :17-06-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	2.340E-1		OEP-XHE-XX-NR04HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (4HR-GR AVAIL)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
2	7.571E-5	16.84	LOOPGR :17-03-10-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	2.340E-1		OEP-XHE-XX-NR04HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (4HR-GR AVAIL)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
3	4.301E-5	9.57	LOOPGR :17-06-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.500E-3		ACP-CRB-CC-1718	OFFSITE POWER SUPPLY BREAKER 1718 FAILS TO OPEN
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs

#	Prob/Freq	Total %	Cut Set	Description
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
4	3.354E-5	7.46	LOOPGR :17-03-10-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.500E-3		ACP-CRB-CC-1718	OFFSITE POWER SUPPLY BREAKER 1718 FAILS TO OPEN
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
5	1.720E-5	3.83	LOOPGR :17-06-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.000E-3		SWS-MOV-CC-16766	SWS HEADER A INLET ISOL MOV 1-67-66 TO DGN A HEAT EXCHANGERS
		EndState	->CD	Added through Event Tree Add
6	1.342E-5	2.99	LOOPGR :17-03-10-1-01	

#	Prob/Freq	Total %	Cut Set	Description
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.000E-3		SWS-MOV-CC-16766	SWS HEADER A INLET ISOL MOV 1-67-66 TO DGN A HEAT EXCHANGERS
		EndState	->CD	Added through Event Tree Add
7	1.322E-5	2.94	LOOPGR :17-06-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.607E-1		DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	7.110E-1		/DE-OPRGR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	2.340E-1		OEP-XHE-XX-NR04HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (4HR-GR AVAIL)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
8	1.031E-5	2.29	LOOPGR :17-03-10-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	1.607E-1		DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	7.110E-1		/DE-OPRGR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN

#	Prob/Freq	Total %	Cut Set	Description
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	2.340E-1		OEP-XHE-XX-NR04HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (4HR-GR AVAIL)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
9	9.153E-6	2.04	LOOPGR :17-45-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.826E-1		DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	9.135E-1		/DE-OPRGR-09H2	DE for fail to recover OSP at 9 hrs, given fail to recover in first 2 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	1.750E-1		OEP-XHE-XX-NR01HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (1HR-GR AVAIL)
		EndState	->CD	Added through Event Tree Add
10	7.179E-6	1.6	LOOPGR :17-45-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	4.174E-1		/DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	1.750E-1		OEP-XHE-XX-NR01HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (1HR-GR AVAIL)
		EndState	->CD	Added through Event Tree Add
11	6.538E-6	1.45	LOOPGR :17-45-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)

#	Prob/Freq	Total %	Cut Set	Description
	5.000E-3		AFW-TDP-TM-1A	AFW TDP UNAVAILABLE DUE TO TEST AND MAINTENANCE
	5.826E-1		DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	9.135E-1		/DE-OPRGR-09H2	DE for fail to recover OSP at 9 hrs, given fail to recover in first 2 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	1.750E-1		OEP-XHE-XX-NR01HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (1HR-GR AVAIL)
		EndState	->CD	Added through Event Tree Add
12	5.856E-6	1.3	LOOPGR :17-06-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.500E-3		ACP-CRB-CC-1718	OFFSITE POWER SUPPLY BREAKER 1718 FAILS TO OPEN
	1.607E-1		DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	7.110E-1		/DE-OPRGR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
13	5.422E-6	1.21	LOOPGR :17-45-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.500E-3		ACP-CRB-CC-1718	OFFSITE POWER SUPPLY BREAKER 1718 FAILS TO OPEN
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.826E-1		DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	9.135E-1		/DE-OPRGR-09H2	DE for fail to recover OSP at 9 hrs, given fail to recover in first 2 hrs
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)

#	Prob/Freq	Total %	Cut Set	Description
		EndState	->CD	Added through Event Tree Add
14	5.404E-6	1.2	LOOPGR :17-06-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.393E-4		EPS-DGN-CF-RUN12	CCF OF UNIT 1 & 2 DIESEL GENERATORS TO RUN
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	2.340E-1		OEP-XHE-XX-NR04HGR0	CONVOLUTION FACTOR FOR CCF-OPR (4HR-GR Avail)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
15	5.373E-6	1.2	LOOPGR :17-06-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.607E-1		DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.890E-1		DE-OPRGR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	2.340E-1		OEP-XHE-XX-NR04HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (4HR-GR AVAIL)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
16	5.368E-6	1.19	LOOPGR :17-45-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN
	5.826E-1		DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	9.135E-1		/DE-OPRGR-09H2	DE for fail to recover OSP at 9 hrs, given fail to recover in first 2 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN

#	Prob/Freq	Total %	Cut Set	Description
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	1.750E-1		OEP-XHE-XX-NR01HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (1HR-GR AVAIL)
		EndState	->CD	Added through Event Tree Add
17	5.128E-6	1.14	LOOPGR :17-45-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	5.000E-3		AFW-TDP-TM-1A	AFW TDP UNAVAILABLE DUE TO TEST AND MAINTENANCE
	4.174E-1		/DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	1.750E-1		OEP-XHE-XX-NR01HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (1HR-GR AVAIL)
		EndState	->CD	Added through Event Tree Add
18	4.568E-6	1.02	LOOPGR :17-03-10-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.500E-3		ACP-CRB-CC-1718	OFFSITE POWER SUPPLY BREAKER 1718 FAILS TO OPEN
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	1.607E-1		DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	7.110E-1		/DE-OPRGR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
19	4.253E-6	0.95	LOOPGR :17-45-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)

#	Prob/Freq	Total %	Cut Set	Description
	2.500E-3		ACP-CRB-CC-1718	OFFSITE POWER SUPPLY BREAKER 1718 FAILS TO OPEN
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	4.174E-1		/DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
		EndState	->CD	Added through Event Tree Add
20	4.210E-6	0.94	LOOPGR :17-45-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN
	4.174E-1		/DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	1.750E-1		OEP-XHE-XX-NR01HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (1HR-GR AVAIL)
		EndState	->CD	Added through Event Tree Add
21	4.191E-6	0.93	LOOPGR :17-03-10-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	1.607E-1		DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.890E-1		DE-OPRGR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	2.340E-1		OEP-XHE-XX-NR04HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (4HR-GR AVAIL)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS

#	Prob/Freq	Total %	Cut Set	Description
		EndState	->CD	Added through Event Tree Add
22	3.873E-6	0.86	LOOPGR :17-45-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.500E-3		ACP-CRB-CC-1718	OFFSITE POWER SUPPLY BREAKER 1718 FAILS TO OPEN
	5.000E-3		AFW-TDP-TM-1A	AFW TDP UNAVAILABLE DUE TO TEST AND MAINTENANCE
	5.826E-1		DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	9.135E-1		/DE-OPRGR-09H2	DE for fail to recover OSP at 9 hrs, given fail to recover in first 2 hrs
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
		EndState	->CD	Added through Event Tree Add
23	3.180E-6	0.71	LOOPGR :17-45-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.500E-3		ACP-CRB-CC-1718	OFFSITE POWER SUPPLY BREAKER 1718 FAILS TO OPEN
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN
	5.826E-1		DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	9.135E-1		/DE-OPRGR-09H2	DE for fail to recover OSP at 9 hrs, given fail to recover in first 2 hrs
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
		EndState	->CD	Added through Event Tree Add
24	3.038E-6	0.68	LOOPGR :17-45-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.500E-3		ACP-CRB-CC-1718	OFFSITE POWER SUPPLY BREAKER 1718 FAILS TO OPEN
	5.000E-3		AFW-TDP-TM-1A	AFW TDP UNAVAILABLE DUE TO TEST AND MAINTENANCE
	4.174E-1		/DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
		EndState	->CD	Added through Event Tree Add

#	Prob/Freq	Total %	Cut Set	Description
25	2.890E-6	0.64	LOOPGR :17-06-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A1AA	SWS TRAIN 1A DISCH STRAINER A1AA FAILS
		EndState	->CD	Added through Event Tree Add
26	2.558E-6	0.57	LOOPGR :02-04-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	6.000E-3		CCW-MDP-TM-1AA	CCW PUMP 1A-A UNAVAILABLE DUE TO TEST AND MAINTENANCE
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
27	2.494E-6	0.55	LOOPGR :17-45-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.500E-3		ACP-CRB-CC-1718	OFFSITE POWER SUPPLY BREAKER 1718 FAILS TO OPEN
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN
	4.174E-1		/DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
		EndState	->CD	Added through Event Tree Add
28	2.381E-6	0.53	LOOPGR :17-06-3-01	

#	Prob/Freq	Total %	Cut Set	Description
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.500E-3		ACP-CRB-CC-1718	OFFSITE POWER SUPPLY BREAKER 1718 FAILS TO OPEN
	1.607E-1		DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.890E-1		DE-OPRGR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
29	2.343E-6	0.52	LOOPGR :17-06-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.607E-1		DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	7.110E-1		/DE-OPRGR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.000E-3		SWS-MOV-CC-16766	SWS HEADER A INLET ISOL MOV 1-67-66 TO DGN A HEAT EXCHANGERS
		EndState	->CD	Added through Event Tree Add
30	2.254E-6	0.5	LOOPGR :17-03-10-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)

#	Prob/Freq	Total %	Cut Set	Description
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A1AA	SWS TRAIN 1A DISCH STRAINER A1AA FAILS
		EndState	->CD	Added through Event Tree Add
31	2.169E-6	0.48	LOOPGR :17-45-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.826E-1		DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	9.135E-1		/DE-OPRGR-09H2	DE for fail to recover OSP at 9 hrs, given fail to recover in first 2 hrs
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	1.000E-3		SWS-MOV-CC-16766	SWS HEADER A INLET ISOL MOV 1-67-66 TO DGN A HEAT EXCHANGERS
		EndState	->CD	Added through Event Tree Add
32	2.064E-6	0.46	LOOPGR :17-06-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.200E-4		DCP-BCH-LP-CH1A	DIESEL GENERATOR 1A BATTERY CHARGER CH1A FAILS
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
33	1.990E-6	0.44	LOOPGR :17-12-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	5.682E-1		/DE-OPRGR-04H2	DE for fail to recover OSP at 4 hrs, given fail to recover in first 2 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN

#	Prob/Freq	Total %	Cut Set	Description
	6.868E-1		EPS-XHE-XL-NR02H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 2 HOURS
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	1.960E-1		OEP-XHE-XX-NR02HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (2HR-GR AVAIL)
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
34	1.857E-6	0.41	LOOPGR :17-03-10-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.500E-3		ACP-CRB-CC-1718	OFFSITE POWER SUPPLY BREAKER 1718 FAILS TO OPEN
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	1.607E-1		DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.890E-1		DE-OPRGR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
35	1.842E-6	0.41	LOOPGR :02-05-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.160E-5		ACP-TFM-FC-1A1-A	6.9KV-TO-480VAC TRANSFORMER 1A1-A FAILS TO FUNCTION
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
36	1.827E-6	0.41	LOOPGR :17-03-10-2-01	

#	Prob/Freq	Total %	Cut Set	Description
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	1.607E-1		DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	7.110E-1		/DE-OPRGR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.000E-3		SWS-MOV-CC-16766	SWS HEADER A INLET ISOL MOV 1-67-66 TO DGN A HEAT EXCHANGERS
		EndState	->CD	Added through Event Tree Add
37	1.701E-6	0.38	LOOPGR :17-45-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	4.174E-1		/DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	1.000E-3		SWS-MOV-CC-16766	SWS HEADER A INLET ISOL MOV 1-67-66 TO DGN A HEAT EXCHANGERS
		EndState	->CD	Added through Event Tree Add
38	1.660E-6	0.37	LOOPGR :15-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	4.000E-3		AFW-MDP-TM-1A	AFW MDP 1A UNAVAILABLE DUE TO TEST AND MAINTENANCE
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.930E-2		PPR-MOV-FC-332	PORV BLOCK VALVE FCV-68-332 CLOSED DURING POWER (PSA)
		EndState	->CD	Added through Event Tree Add
39	1.610E-6	0.36	LOOPGR :17-03-10-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)

#	Prob/Freq	Total %	Cut Set	Description
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	1.200E-4		DCP-BCH-LP-CH1A	DIESEL GENERATOR 1A BATTERY CHARGER CH1A FAILS
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
40	1.549E-6	0.34	LOOPGR :17-45-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	5.000E-3		AFW-TDP-TM-1A	AFW TDP UNAVAILABLE DUE TO TEST AND MAINTENANCE
	5.826E-1		DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	9.135E-1		/DE-OPRGR-09H2	DE for fail to recover OSP at 9 hrs, given fail to recover in first 2 hrs
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	1.000E-3		SWS-MOV-CC-16766	SWS HEADER A INLET ISOL MOV 1-67-66 TO DGN A HEAT EXCHANGERS
		EndState	->CD	Added through Event Tree Add
41	1.505E-6	0.33	LOOPGR :17-06-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	3.738E-4		EPS-DGN-CF-RUN1	CCF OF UNIT 1 DIESEL GENERATORS TO RUN
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	2.340E-1		OEP-XHE-XX-NR04HGR0	CONVOLUTION FACTOR FOR CCF-OPR (4HR-GR Avail)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS

#	Prob/Freq	Total %	Cut Set	Description
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
42	1.272E-6	0.28	LOOPGR :17-45-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN
	5.826E-1		DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	9.135E-1		/DE-OPRGR-09H2	DE for fail to recover OSP at 9 hrs, given fail to recover in first 2 hrs
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	1.000E-3		SWS-MOV-CC-16766	SWS HEADER A INLET ISOL MOV 1-67-66 TO DGN A HEAT EXCHANGERS
		EndState	->CD	Added through Event Tree Add
43	1.215E-6	0.27	LOOPGR :17-45-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	5.000E-3		AFW-TDP-TM-1A	AFW TDP UNAVAILABLE DUE TO TEST AND MAINTENANCE
	4.174E-1		/DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	1.000E-3		SWS-MOV-CC-16766	SWS HEADER A INLET ISOL MOV 1-67-66 TO DGN A HEAT EXCHANGERS
		EndState	->CD	Added through Event Tree Add
44	1.209E-6	0.27	LOOPGR :17-12-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	4.318E-1		DE-OPRGR-04H2	DE for fail to recover OSP at 4 hrs, given fail to recover in first 2 hrs
	7.996E-1		/DE-OPRGR-09H4	DE for fail to recover OSP at 9 hrs, given fail to recover in first 4 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	6.868E-1		EPS-XHE-XL-NR02H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 2 HOURS
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	1.960E-1		OEP-XHE-XX-NR02HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (2HR-GR AVAIL)

#	Prob/Freq	Total %	Cut Set	Description
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
45	1.174E-6	0.26	LOOPGR :17-03-10-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	3.738E-4		EPS-DGN-CF-RUN1	CCF OF UNIT 1 DIESEL GENERATORS TO RUN
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	2.340E-1		OEP-XHE-XX-NR04HGR0	CONVOLUTION FACTOR FOR CCF-OPR (4HR-GR Avail)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
46	1.053E-6	0.23	LOOPGR :17-12-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.500E-3		ACP-CRB-CC-1718	OFFSITE POWER SUPPLY BREAKER 1718 FAILS TO OPEN
	5.682E-1		/DE-OPRGR-04H2	DE for fail to recover OSP at 4 hrs, given fail to recover in first 2 hrs
	6.868E-1		EPS-XHE-XL-NR02H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 2 HOURS
	4.317E-1		OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
47	9.978E-7	0.22	LOOPGR :17-45-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN

#	Prob/Freq	Total %	Cut Set	Description
	4.174E-1		/DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	7.857E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	1.000E-3		SWS-MOV-CC-16766	SWS HEADER A INLET ISOL MOV 1-67-66 TO DGN A HEAT EXCHANGERS
		EndState	->CD	Added through Event Tree Add
48	9.738E-7	0.22	LOOPGR :15-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	4.000E-3		AFW-MDP-TM-1A	AFW MDP 1A UNAVAILABLE DUE TO TEST AND MAINTENANCE
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN
	5.930E-2		PPR-MOV-FC-332	PORV BLOCK VALVE FCV-68-332 CLOSED DURING POWER (PSA)
		EndState	->CD	Added through Event Tree Add
49	9.584E-7	0.21	LOOPGR :17-09-10-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	2.340E-1		OEP-XHE-XX-NR04HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (4HR-GR AVAIL)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
50	9.522E-7	0.21	LOOPGR :17-06-3-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.607E-1		DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.890E-1		DE-OPRGR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs

#	Prob/Freq	Total %	Cut Set	Description
	5.568E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.000E-3		SWS-MOV-CC-16766	SWS HEADER A INLET ISOL MOV 1-67-66 TO DGN A HEAT EXCHANGERS
		EndState	->CD	Added through Event Tree Add

C.3.7 Sequoyah SA2 (Case 1) Cutset Sequence and Report

SA2 (Case1) Top 90 Percent Dominant Sequence

LOMFW 05-01	/RPS,/OEP,/AFW,PORV,/HPI,/SSC,RHR,HPR,/L1-CDF
LOMFW 07-01	/RPS,/OEP,/AFW,PORV,/HPI,SSC,HPR,/L1-CDF

SA2 (Case 1) Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	1.242E-4	19.82	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.242E-4		RHR-FAN-CF-RHRRMS	CCF OF RHR MDP ROOM COOLING FANS TO START
		EndState	->CD	Added through Event Tree Add
2	1.019E-4	16.26	LOMFW :07-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	5.095E-2		HPR-XHE-XM-RECIRC1	OPERATOR FAILS TO INITIATE HPR SYSTEM ONLY (dependency)
	2.000E-3		OPR-XHE-XM-DEPRCS	OPERATOR FAILS TO INITIATE COOLDOWN (PRIMARY & SECONDARY)
		EndState	->CD	Added through Event Tree Add
3	1.019E-4	16.26	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	5.095E-2		HPR-XHE-XM-RECIRC1	OPERATOR FAILS TO INITIATE HPR SYSTEM ONLY (dependency)
	2.000E-3		RHR-XHE-XM-ERROR	OPERATOR FAILS TO INITIATE RHR SYSTEM
		EndState	->CD	Added through Event Tree Add
4	6.270E-5	10	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	6.270E-5		RHR-MDP-CF-STRT	RHR PUMP COMMON CAUSE FAILURE TO START
		EndState	->CD	Added through Event Tree Add
5	2.280E-5	3.64	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER

#	Prob/Freq	Total %	Cut Set	Description
	2.280E-5		CCW-MOV-CF-701536	CCF OF RHR/CCW HEAT EXCHANGER MOV 70-156/153
		EndState	->CD	Added through Event Tree Add
6	1.800E-5	2.87	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	6.000E-3		CCW-MDP-TM-CS	CCW PUMP C-S IS IN TEST OR MAINTENANCE
	3.000E-3		RHR-FAN-FS-RHRRMA	FAILURE OF RHR MDP-1A ROOM COOLING FAN TO START
		EndState	->CD	Added through Event Tree Add
7	1.500E-5	2.39	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	3.000E-3		RHR-FAN-FS-RHRRMB	FAILURE OF RHR MDP-1B ROOM COOLING FAN TO START
	5.000E-3		RHR-HTX-TM-HXA	RHR HEAT EXCHANGER HTX-A UNAVAILABLE DUE TO T & M
		EndState	->CD	Added through Event Tree Add
8	1.500E-5	2.39	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	3.000E-3		RHR-FAN-FS-RHRRMA	FAILURE OF RHR MDP-1A ROOM COOLING FAN TO START
	5.000E-3		RHR-HTX-TM-HXB	RHR HEAT EXCHANGER HTX-B UNAVAILABLE DUE TO T & M
		EndState	->CD	Added through Event Tree Add
9	1.044E-5	1.66	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.044E-5		RHR-MDP-CF-RUN	RHR PUMP COMMON CAUSE FAILURE TO RUN
		EndState	->CD	Added through Event Tree Add
10	1.000E-5	1.6	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	2.000E-3		CCW-MDP-FS-CS	CCW PUMP C-S FAILS TO START
	5.000E-3		RHR-HTX-TM-HXA	RHR HEAT EXCHANGER HTX-A UNAVAILABLE DUE TO T & M
		EndState	->CD	Added through Event Tree Add
11	9.143E-6	1.46	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	9.143E-6		RHR-FAN-CF-RHRRMR	CCF OF RHR MDP ROOM COOLING FANS TO RUN
		EndState	->CD	Added through Event Tree Add
12	9.000E-6	1.44	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	6.000E-3		CCW-MDP-TM-CS	CCW PUMP C-S IS IN TEST OR MAINTENANCE
	1.500E-3		RHR-MDP-FS-1A	RHR MDP 1A FAILS TO START
		EndState	->CD	Added through Event Tree Add
13	9.000E-6	1.44	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER

#	Prob/Freq	Total %	Cut Set	Description
	3.000E-3		RHR-FAN-FS-RHRRMA	FAILURE OF RHR MDP-1A ROOM COOLING FAN TO START
	3.000E-3		RHR-FAN-FS-RHRRMB	FAILURE OF RHR MDP-1B ROOM COOLING FAN TO START
		EndState	->CD	Added through Event Tree Add
14	7.500E-6	1.2	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	5.000E-3		RHR-HTX-TM-HXB	RHR HEAT EXCHANGER HTX-B UNAVAILABLE DUE TO T & M
	1.500E-3		RHR-MDP-FS-1A	RHR MDP 1A FAILS TO START
		EndState	->CD	Added through Event Tree Add
15	7.500E-6	1.2	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	5.000E-3		RHR-HTX-TM-HXA	RHR HEAT EXCHANGER HTX-A UNAVAILABLE DUE TO T & M
	1.500E-3		RHR-MDP-FS-1B	RHR MDP 1B FAILS TO START
		EndState	->CD	Added through Event Tree Add
16	6.000E-6	0.96	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	6.000E-3		CCW-MDP-TM-CS	CCW PUMP C-S IS IN TEST OR MAINTENANCE
	1.000E-3		CCW-MOV-CC-70156	FAILURE OF RHR/CCW HEAT EXCHANGER MOV 70-156
		EndState	->CD	Added through Event Tree Add
17	6.000E-6	0.96	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	6.000E-3		CCW-MDP-TM-CS	CCW PUMP C-S IS IN TEST OR MAINTENANCE
	1.000E-3		RHR-XHE-XR-HTXA	OPERATOR FAILS TO RESTORE RHR HTX-1A AFTER T & M
		EndState	->CD	Added through Event Tree Add
18	6.000E-6	0.96	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	2.000E-3		CCW-MDP-FS-CS	CCW PUMP C-S FAILS TO START
	3.000E-3		RHR-FAN-FS-RHRRMA	FAILURE OF RHR MDP-1A ROOM COOLING FAN TO START
		EndState	->CD	Added through Event Tree Add
19	6.000E-6	0.96	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	3.000E-3		RHR-FAN-FS-RHRRMA	FAILURE OF RHR MDP-1A ROOM COOLING FAN TO START
	2.000E-3		RHR-FAN-TM-RHRRMB	RHR MDP 1B ROOM FAN UNAVAILABLE DUE TO T & M
		EndState	->CD	Added through Event Tree Add
20	6.000E-6	0.96	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	3.000E-3		RHR-FAN-FS-RHRRMB	FAILURE OF RHR MDP-1B ROOM COOLING FAN TO START

#	Prob/Freq	Total %	Cut Set	Description
	2.000E-3		RHR-FAN-TM-RHRRMA	RHR MDP 1A ROOM FAN UNAVAILABLE DUE TO T & M
		EndState	->CD	Added through Event Tree Add
21	5.000E-6	0.8	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.000E-3		CCW-MOV-CC-70153	FAILURE OF RHR/CCW HEAT EXCHANGER MOV 70-153
	5.000E-3		RHR-HTX-TM-HXA	RHR HEAT EXCHANGER HTX-A UNAVAILABLE DUE TO T & M
		EndState	->CD	Added through Event Tree Add
22	5.000E-6	0.8	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.000E-3		CCW-MOV-CC-70156	FAILURE OF RHR/CCW HEAT EXCHANGER MOV 70-156
	5.000E-3		RHR-HTX-TM-HXB	RHR HEAT EXCHANGER HTX-B UNAVAILABLE DUE TO T & M
		EndState	->CD	Added through Event Tree Add
23	5.000E-6	0.8	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	5.000E-3		RHR-HTX-TM-HXB	RHR HEAT EXCHANGER HTX-B UNAVAILABLE DUE TO T & M
	1.000E-3		RHR-XHE-XR-HTXA	OPERATOR FAILS TO RESTORE RHR HTX-1A AFTER T & M
		EndState	->CD	Added through Event Tree Add
24	5.000E-6	0.8	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	5.000E-3		RHR-HTX-TM-HXA	RHR HEAT EXCHANGER HTX-A UNAVAILABLE DUE TO T & M
	1.000E-3		RHR-XHE-XR-HTXB	OPERATOR FAILS TO RESTORE RHR HTX-1B AFTER T & M
		EndState	->CD	Added through Event Tree Add
25	4.500E-6	0.72	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	3.000E-3		RHR-FAN-FS-RHRRMA	FAILURE OF RHR MDP-1A ROOM COOLING FAN TO START
	1.500E-3		RHR-MDP-FS-1B	RHR MDP 1B FAILS TO START
		EndState	->CD	Added through Event Tree Add
26	4.500E-6	0.72	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	3.000E-3		RHR-FAN-FS-RHRRMB	FAILURE OF RHR MDP-1B ROOM COOLING FAN TO START
	1.500E-3		RHR-MDP-FS-1A	RHR MDP 1A FAILS TO START
		EndState	->CD	Added through Event Tree Add
27	4.000E-6	0.64	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	2.000E-3		CCW-MDP-FS-CS	CCW PUMP C-S FAILS TO START
	2.000E-3		RHR-FAN-TM-RHRRMA	RHR MDP 1A ROOM FAN UNAVAILABLE DUE TO T & M

#	Prob/Freq	Total %	Cut Set	Description
		EndState	->CD	Added through Event Tree Add
28	3.227E-6	0.51	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	6.000E-3		CCW-MDP-TM-CS	CCW PUMP C-S IS IN TEST OR MAINTENANCE
	5.379E-4		RHR-MDP-FR-1A	RHR MDP 1A FAILS TO RUN
		EndState	->CD	Added through Event Tree Add
29	3.000E-6	0.48	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.000E-3		CCW-MOV-CC-70156	FAILURE OF RHR/CCW HEAT EXCHANGER MOV 70-156
	3.000E-3		RHR-FAN-FS-RHRRMB	FAILURE OF RHR MDP-1B ROOM COOLING FAN TO START
		EndState	->CD	Added through Event Tree Add
30	3.000E-6	0.48	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.000E-3		CCW-MOV-CC-70153	FAILURE OF RHR/CCW HEAT EXCHANGER MOV 70-153
	3.000E-3		RHR-FAN-FS-RHRRMA	FAILURE OF RHR MDP-1A ROOM COOLING FAN TO START
		EndState	->CD	Added through Event Tree Add
31	3.000E-6	0.48	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	2.000E-3		RHR-FAN-TM-RHRRMA	RHR MDP 1A ROOM FAN UNAVAILABLE DUE TO T & M
	1.500E-3		RHR-MDP-FS-1B	RHR MDP 1B FAILS TO START
		EndState	->CD	Added through Event Tree Add
32	3.000E-6	0.48	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	2.000E-3		RHR-FAN-TM-RHRRMB	RHR MDP 1B ROOM FAN UNAVAILABLE DUE TO T & M
	1.500E-3		RHR-MDP-FS-1A	RHR MDP 1A FAILS TO START
		EndState	->CD	Added through Event Tree Add
33	3.000E-6	0.48	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	2.000E-3		CCW-MDP-FS-CS	CCW PUMP C-S FAILS TO START
	1.500E-3		RHR-MDP-FS-1A	RHR MDP 1A FAILS TO START
		EndState	->CD	Added through Event Tree Add
34	3.000E-6	0.48	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	3.000E-3		RHR-FAN-FS-RHRRMA	FAILURE OF RHR MDP-1A ROOM COOLING FAN TO START
	1.000E-3		RHR-XHE-XR-HTXB	OPERATOR FAILS TO RESTORE RHR HTX-1B AFTER T & M
		EndState	->CD	Added through Event Tree Add
35	3.000E-6	0.48	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER

#	Prob/Freq	Total %	Cut Set	Description
	3.000E-3		RHR-FAN-FS-RHRRMB	FAILURE OF RHR MDP-1B ROOM COOLING FAN TO START
	1.000E-3		RHR-XHE-XR-HTXA	OPERATOR FAILS TO RESTORE RHR HTX-1A AFTER T & M
		EndState	->CD	Added through Event Tree Add
36	2.690E-6	0.43	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	5.000E-3		RHR-HTX-TM-HXB	RHR HEAT EXCHANGER HTX-B UNAVAILABLE DUE TO T & M
	5.379E-4		RHR-MDP-FR-1A	RHR MDP 1A FAILS TO RUN
		EndState	->CD	Added through Event Tree Add
37	2.690E-6	0.43	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	5.000E-3		RHR-HTX-TM-HXA	RHR HEAT EXCHANGER HTX-A UNAVAILABLE DUE TO T & M
	5.379E-4		RHR-MDP-FR-1B	RHR MDP 1B FAILS TO RUN
		EndState	->CD	Added through Event Tree Add
38	2.250E-6	0.36	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.500E-3		RHR-MDP-FS-1A	RHR MDP 1A FAILS TO START
	1.500E-3		RHR-MDP-FS-1B	RHR MDP 1B FAILS TO START
		EndState	->CD	Added through Event Tree Add
39	2.000E-6	0.32	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.000E-3		CCW-MOV-CC-70156	FAILURE OF RHR/CCW HEAT EXCHANGER MOV 70-156
	2.000E-3		RHR-FAN-TM-RHRRMB	RHR MDP 1B ROOM FAN UNAVAILABLE DUE TO T & M
		EndState	->CD	Added through Event Tree Add
40	2.000E-6	0.32	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.000E-3		CCW-MOV-CC-70153	FAILURE OF RHR/CCW HEAT EXCHANGER MOV 70-153
	2.000E-3		RHR-FAN-TM-RHRRMA	RHR MDP 1A ROOM FAN UNAVAILABLE DUE TO T & M
		EndState	->CD	Added through Event Tree Add
41	2.000E-6	0.32	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	2.000E-3		RHR-FAN-TM-RHRRMA	RHR MDP 1A ROOM FAN UNAVAILABLE DUE TO T & M
	1.000E-3		RHR-XHE-XR-HTXB	OPERATOR FAILS TO RESTORE RHR HTX-1B AFTER T & M
		EndState	->CD	Added through Event Tree Add
42	2.000E-6	0.32	LOMFW :05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	2.000E-3		RHR-FAN-TM-RHRRMB	RHR MDP 1B ROOM FAN UNAVAILABLE DUE TO T & M

#	Prob/Freq	Total %	Cut Set	Description
	1.000E-3		RHR-XHE-XR-HTXA	OPERATOR FAILS TO RESTORE RHR HTX-1A AFTER T & M
		EndState	->CD	Added through Event Tree Add

C.3.8 Sequoyah SA2 (Case 2) Cutset Sequence and Report

SA2 (Case 2) Top 5 Dominant Sequences

TRANS 02-02-10-01	/RPS,/OEP,/AFW,/PORV,LOSC,/RCPT,/RSD,/BP1,BP2,/FW,HPI,SSC1,/L1-CDF
TRANS 02-03-10-01	/RPS,/OEP,/AFW,/PORV,LOSC,/RCPT,/RSD,BP1,/BP2,/FW,HPI,SSC1,/L1-CDF
TRANS 02-02-05-01	/RPS,/OEP,/AFW,/PORV,LOSC,/RCPT,/RSD,/BP1,BP2,/FW,/HPI,SSC,HPR,/L1-CDF
TRANS 02-14-02-01	/RPS,/OEP,/AFW,/PORV,LOSC,RCPT,/HPI-M,/AFW-A,/SSC,LPR,/L1-CDF
TRANS 02-14-09-01	/RPS,/OEP,/AFW,/PORV,LOSC,RCPT,HPI-M,/ACC-M,/AFW-A,/SSC,LPI,/L1-CDF

SA2 (Case 2) Top 50 Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	7.065E-8	53.5	TRANS :02-02-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	3.577E-7		SWS-TSA-CF-PG-ALL	CCF OF 4-OF-4 ERCW TRAVELING SCREENS
		EndState	->CD	Added through Event Tree Add
2	5.573E-9	4.22	TRANS :02-02-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A1AA	SWS TRAIN 1A DISCH STRAINER A1AA FAILS
	1.680E-4		SWS-STR-PG-B1BB	SWS TRAIN 1B DISCH TRAINER B1BB FAILS
		EndState	->CD	Added through Event Tree Add
3	4.447E-9	3.37	TRANS :02-02-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.126E-5		SWS-STR-CF-PG-ALL	CCF OF ALL 4 ERCW STRAINERS
	2.000E-3		SWS-XHE-XL-STR-NORM	
		EndState	->CD	Added through Event Tree Add
4	3.577E-9	2.71	TRANS :02-03-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT

#	Prob/Freq	Total %	Cut Set	Description
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	3.577E-7		SWS-TSA-CF-PG-ALL	CCF OF 4-OF-4 ERCW TRAVELING SCREENS
		EndState	->CD	Added through Event Tree Add
5	2.708E-9	2.05	TRANS :02-02-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.371E-5		STB-ACX-CF-RUN	CCF OF AIR HANDLING UNITS 1A-A & 1B-B SHUT. BOARD ROOMS TO R
	1.000E-3		STB-XHE-XL-RECOV	OPERATOR FAILS TO RECOVER LOSS OF SHUTDOWN BOARD ROOM COOLING
		EndState	->CD	Added through Event Tree Add
6	2.352E-9	1.78	TRANS :02-02-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.977E-7		SWS-MDP-CF-FRNR	CCF OF SWS NORMALLY RUNNING PUMPS JA/LB/PB/RA
	4.000E-2		SWS-XHE-XM-STBY	OPERATOR FAILS TO START/ALIGN STANDBY PUMPS
		EndState	->CD	Added through Event Tree Add
7	1.991E-9	1.51	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	6.000E-3		CCW-MDP-TM-CS	CCW PUMP C-S IS IN TEST OR MAINTENANCE
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
8	1.896E-9	1.44	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS

#	Prob/Freq	Total %	Cut Set	Description
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	9.600E-7		SWS-MOV-OC-6714	FAILURE OF SWS HEADER A DISCHARGE MOV 67-14
		EndState	->CD	Added through Event Tree Add
9	1.896E-9	1.44	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	9.600E-7		SWS-MOV-OC-67365	FAILURE OF SWS HEADER A DISCHARGE MOV 67-365
		EndState	->CD	Added through Event Tree Add
10	1.008E-9	0.76	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	6.000E-3		CCW-MDP-TM-CS	CCW PUMP C-S IS IN TEST OR MAINTENANCE
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
11	9.600E-10	0.73	TRANS :02-14-09-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	9.600E-7		SWS-MOV-OC-6714	FAILURE OF SWS HEADER A DISCHARGE MOV 67-14
		EndState	->CD	Added through Event Tree Add
12	9.600E-10	0.73	TRANS :02-14-09-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	9.600E-7		SWS-MOV-OC-67365	FAILURE OF SWS HEADER A DISCHARGE MOV 67-365
		EndState	->CD	Added through Event Tree Add
13	9.038E-10	0.68	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	2.288E-5		CCW-FAN-CF-ALLFR	CCF OF AFW/CCW AREA FAN COOLERS TO RUN
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS

#	Prob/Freq	Total %	Cut Set	Description
		EndState	->CD	Added through Event Tree Add
14	9.038E-10	0.68	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	2.288E-5		CCW-FAN-CF-ALLFR	CCF OF AFW/CCW AREA FAN COOLERS TO RUN
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
15	8.943E-10	0.68	TRANS :02-04-09-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	3.577E-7		SWS-TSA-CF-PG-ALL	CCF OF 4-OF-4 ERCW TRAVELING SCREENS
		EndState	->CD	Added through Event Tree Add
16	8.399E-10	0.64	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	5.000E-3		RHR-HTX-TM-HXB	RHR HEAT EXCHANGER HTX-B UNAVAILABLE DUE TO T & M
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
17	7.970E-10	0.6	TRANS :20-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	8.250E-5		AFW-MDP-CF-START	CCFOF AFW MOTOR-DRIVEN PUMPS TO START
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	6.900E-2		HPI-XHE-XM-FB1	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING (depend)
	2.000E-2		MFW-XHE-XL-ERROR	OPERATOR FAILS TO RESTORE MFW FLOW
		EndState	->CD	Added through Event Tree Add
18	7.640E-10	0.58	TRANS :20-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.536E-7		AFW-AOV-CF-DIS	CCF OF SGs DISCHARGE AOVs TO OPEN
	6.900E-2		HPI-XHE-XM-FB1	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING (depend)
	2.000E-2		MFW-XHE-XL-ERROR	OPERATOR FAILS TO RESTORE MFW FLOW

#	Prob/Freq	Total %	Cut Set	Description
		EndState	->CD	Added through Event Tree Add
19	7.491E-10	0.57	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	7.586E-7		CCW-MDP-CF-RUN	CCF OF CCW MDPS TO RUN
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
20	7.491E-10	0.57	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	7.586E-7		CCW-MDP-CF-RUN	CCF OF CCW MDPS TO RUN
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
21	7.166E-10	0.54	TRANS :02-02-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.160E-5		ACP-TFM-FC-1B1-B	6.9KV-TO-480VAC TRANSFORMER 1B1-B FAILS TO FUNCTION
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A1AA	SWS TRAIN 1A DISCH STRAINER A1AA FAILS
		EndState	->CD	Added through Event Tree Add
22	7.166E-10	0.54	TRANS :02-02-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.160E-5		ACP-TFM-FC-1A1-A	6.9KV-TO-480VAC TRANSFORMER 1A1-A FAILS TO FUNCTION
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-B1BB	SWS TRAIN 1B DISCH TRAINER B1BB FAILS
		EndState	->CD	Added through Event Tree Add
23	6.635E-10	0.5	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT

#	Prob/Freq	Total %	Cut Set	Description
	2.000E-3		CCW-MDP-FS-CS	CCW PUMP C-S FAILS TO START
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
24	6.635E-10	0.5	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	2.000E-3		HPR-XHE-XM-RECIRC	OPERATOR FAILS TO START HIGH PRESSURE RECIRC
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
25	6.578E-10	0.5	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	1.665E-5		CCW-FAN-CF-ALLFS	CCF OF AFW/CCW AREA FAN COOLERS TOSTART
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
26	6.578E-10	0.5	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	1.665E-5		CCW-FAN-CF-ALLFS	CCF OF AFW/CCW AREA FAN COOLERS TOSTART
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS

#	Prob/Freq	Total %	Cut Set	Description
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
27	5.692E-10	0.43	TRANS :20-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	8.250E-5		AFW-MDP-CF-START	CCFOF AFW MOTOR-DRIVEN PUMPS TO START
	5.000E-3		AFW-TDP-TM-1A	AFW TDP UNAVAILABLE DUE TO TEST AND MAINTENANCE
	6.900E-2		HPI-XHE-XM-FB1	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING (depend)
	2.000E-2		MFW-XHE-XL-ERROR	OPERATOR FAILS TO RESTORE MFW FLOW
		EndState	->CD	Added through Event Tree Add
28	5.040E-10	0.38	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	3.000E-3		RHR-FAN-FS-RHRRMB	FAILURE OF RHR MDP-1B ROOM COOLING FAN TO START
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
29	4.674E-10	0.35	TRANS :20-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	8.250E-5		AFW-MDP-CF-START	CCFOF AFW MOTOR-DRIVEN PUMPS TO START
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN
	6.900E-2		HPI-XHE-XM-FB1	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING (depend)
	2.000E-2		MFW-XHE-XL-ERROR	OPERATOR FAILS TO RESTORE MFW FLOW
		EndState	->CD	Added through Event Tree Add
30	4.576E-10	0.35	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	2.288E-5		CCW-FAN-CF-ALLFR	CCF OF AFW/CCW AREA FAN COOLERS TO RUN
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
31	4.576E-10	0.35	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	2.288E-5		CCW-FAN-CF-ALLFR	CCF OF AFW/CCW AREA FAN COOLERS TO RUN
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS

#	Prob/Freq	Total %	Cut Set	Description
		EndState	->CD	Added through Event Tree Add
32	3.793E-10	0.29	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	7.586E-7		CCW-MDP-CF-RUN	CCF OF CCW MDPS TO RUN
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
33	3.793E-10	0.29	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	7.586E-7		CCW-MDP-CF-RUN	CCF OF CCW MDPS TO RUN
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
34	3.792E-10	0.29	TRANS :02-02-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	4.000E-3		CVC-MDP-TM-1A	CHARGING PUMP 1A UNAVAILABLE DUE TO TEST AND MAINTENANCE
	5.000E-1		CVC-SYS-FC-1BRUN	CVC PUMP 1B-B IS NORMALLY RUNNING
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	9.600E-7		SWS-MOV-OC-6714	FAILURE OF SWS HEADER A DISCHARGE MOV 67-14
		EndState	->CD	Added through Event Tree Add
35	3.792E-10	0.29	TRANS :02-02-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	4.000E-3		CVC-MDP-TM-1A	CHARGING PUMP 1A UNAVAILABLE DUE TO TEST AND MAINTENANCE
	5.000E-1		CVC-SYS-FC-1BRUN	CVC PUMP 1B-B IS NORMALLY RUNNING
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	9.600E-7		SWS-MOV-OC-67365	FAILURE OF SWS HEADER A DISCHARGE MOV 67-365
		EndState	->CD	Added through Event Tree Add
36	3.577E-10	0.27	TRANS :02-14-09-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	3.577E-7		SWS-TSA-CF-PG-ALL	CCF OF 4-OF-4 ERCW TRAVELING SCREENS
		EndState	->CD	Added through Event Tree Add
37	3.360E-10	0.25	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.000E-3		CCW-MDP-FS-CS	CCW PUMP C-S FAILS TO START
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS

#	Prob/Freq	Total %	Cut Set	Description
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
38	3.360E-10	0.25	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	2.000E-3		RHR-FAN-TM-RHRRMB	RHR MDP 1B ROOM FAN UNAVAILABLE DUE TO T & M
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
39	3.331E-10	0.25	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	1.665E-5		CCW-FAN-CF-ALLFS	CCF OF AFW/CCW AREA FAN COOLERS TOSTART
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
40	3.331E-10	0.25	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	1.665E-5		CCW-FAN-CF-ALLFS	CCF OF AFW/CCW AREA FAN COOLERS TOSTART
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
41	3.318E-10	0.25	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.000E-3		RHR-MOV-OO-7421	RWST ISOLATION MOV 74-21 FAILS TO CLOSE
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
42	3.318E-10	0.25	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.000E-3		CCW-MOV-CC-70153	FAILURE OF RHR/CCW HEAT EXCHANGER MOV 70-153
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS

#	Prob/Freq	Total %	Cut Set	Description
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
43	3.318E-10	0.25	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	1.000E-3		HPR-MOV-CC-6373	SUMP ISOLATION MOV 63-73 FAILS TO OPEN
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
44	3.318E-10	0.25	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	1.000E-3		HPR-MOV-CC-6311	RHR DISCHARGE MOV 63-11 FAILS
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
45	3.302E-10	0.25	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	8.360E-5		CCW-MDP-CF-TBBSTART	CCF OF THERMAL BARRIER BOOSTER MDPS TO START
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	2.000E-3		HPR-XHE-XM-RECIRC	OPERATOR FAILS TO START HIGH PRESSURE RECIRC
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
46	3.185E-10	0.24	TRANS :02-02-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.600E-6		ACP-BAC-LP-1B1B	480VAC SHUTDOWN BOARD 1B1-B FAILS
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS

#	Prob/Freq	Total %	Cut Set	Description
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A1AA	SWS TRAIN 1A DISCH STRAINER A1AA FAILS
		EndState	->CD	Added through Event Tree Add
47	3.185E-10	0.24	TRANS :02-02-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.600E-6		ACP-BAC-LP-1A1A	480VAC SHUTDOWN BOARD 1A1-A FAILS
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-B1BB	SWS TRAIN 1B DISCH TRAINER B1BB FAILS
		EndState	->CD	Added through Event Tree Add
48	3.185E-10	0.24	TRANS :02-02-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.600E-6		ACP-BAC-LP-1B	DIVISION 1B AC POWER 6.9kV BUS FAILS
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A1AA	SWS TRAIN 1A DISCH STRAINER A1AA FAILS
		EndState	->CD	Added through Event Tree Add
49	3.185E-10	0.24	TRANS :02-02-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.600E-6		ACP-BAC-LP-1A	6.9kV AC POWER SHUTDOWN BOARD 1A-A FAILS
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-B1BB	SWS TRAIN 1B DISCH TRAINER B1BB FAILS
		EndState	->CD	Added through Event Tree Add
50	3.110E-10	0.24	TRANS :05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	6.260E-2		PPR-MOV-FC-3323	BOTH PORV BLOCK VALVES FCV-68-332/333 CLOSED DURING POWER (PSA)
	4.000E-2		PPR-SRV-CO-TRAN	PORVs/SRVs OPEN DURING TRANSIENT
	1.000E-3		PPR-SRV-OO-SR2	FAILURE OF SRV 2 (68-564) TO RECLOSE
	1.242E-4		RHR-FAN-CF-RHRRMS	CCF OF RHR MDP ROOM COOLING FANS TO START
		EndState	->CD	Added through Event Tree Add
51	3.110E-10	0.24	TRANS :05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT

#	Prob/Freq	Total %	Cut Set	Description
	6.260E-2		PPR-MOV-FC-3323	BOTH PORV BLOCK VALVES FCV-68-332/333 CLOSED DURING POWER (PSA)
	4.000E-2		PPR-SRV-CO-TRAN	PORVs/SRVs OPEN DURING TRANSIENT
	1.000E-3		PPR-SRV-OO-SR3	FAILURE OF SRV 3 (68-564) TO RECLOSE
	1.242E-4		RHR-FAN-CF-RHRRMS	CCF OF RHR MDP ROOM COOLING FANS TO START
		EndState	->CD	Added through Event Tree Add

C.3.9 Sequoyah SA4 (Case 1) Cutset Sequence and Report

SA4 (Case 1) Top 5 Dominant Sequences

LOCHS 02-02-10-01	/RPS, /OEP, /AFW, /PORV, LOSC, /RCPT, /RSD, /BP1, BP2, /FW, HPI, SSC1, /L1-CDF
LOCHS 02-14-02-01	/RPS, /OEP, /AFW, /PORV, LOSC, RCPT, /HPI-M, /AFW-A, /SSC, LPR, /L1-CDF
LOCHS 02-14-09-01	/RPS, /OEP, /AFW, /PORV, LOSC, RCPT, HPI-M, /ACC-M, /AFW-A, /SSC1, LPI, /L1-CDF
LOCHS 02-02-05-01	/RPS, /OEP, /AFW, /PORV, LOSC, /RCPT, /RSD, /BP1, BP2, /FW, /HPI, SSC, HPR, /L1-CDF
LOCHS 12-01	/RPS, /OEP, AFW, /HPI, BLEED, /L1-CDF

SA4 (Case 1) Top 50 Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	7.065E-8	11.88	LOCHS :02-02-10-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	3.577E-7		SWS-TSA-CF-PG-ALL	CCF OF 4-OF-4 ERCW TRAVELING SCREENS
		EndState	->CD	Added through Event Tree Add
2	2.016E-8	3.39	LOCHS :02-14-02-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	6.000E-3		CCW-MDP-TM-CS	CCW PUMP C-S IS IN TEST OR MAINTENANCE
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
3	1.920E-8	3.23	LOCHS :02-14-09-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	9.600E-7		SWS-MOV-OC-67365	FAILURE OF SWS HEADER A DISCHARGE MOV 67-365
		EndState	->CD	Added through Event Tree Add
4	1.920E-8	3.23	LOCHS :02-14-09-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	9.600E-7		SWS-MOV-OC-6714	FAILURE OF SWS HEADER A DISCHARGE MOV 67-14

#	Prob/Freq	Total %	Cut Set	Description
		EndState	->CD	Added through Event Tree Add
5	1.811E-8	3.04	LOCHS :02-02-05-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	6.000E-3		CCW-MDP-TM-CS	CCW PUMP C-S IS IN TEST OR MAINTENANCE
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
6	1.725E-8	2.9	LOCHS :02-02-05-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	9.600E-7		SWS-MOV-OC-6714	FAILURE OF SWS HEADER A DISCHARGE MOV 67-14
		EndState	->CD	Added through Event Tree Add
7	1.725E-8	2.9	LOCHS :02-02-05-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	9.600E-7		SWS-MOV-OC-67365	FAILURE OF SWS HEADER A DISCHARGE MOV 67-365
		EndState	->CD	Added through Event Tree Add
8	1.680E-8	2.82	LOCHS :02-14-02-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	5.000E-3		RHR-HTX-TM-HXB	RHR HEAT EXCHANGER HTX-B UNAVAILABLE DUE TO T & M
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
9	1.155E-8	1.94	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	8.250E-5		AFW-MDP-CF-START	CCFOF AFW MOTOR-DRIVEN PUMPS TO START

#	Prob/Freq	Total %	Cut Set	Description
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	2.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
10	1.107E-8	1.86	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.536E-7		AFW-AOV-CF-DIS	CCF OF SGs DISCHARGE AOVs TO OPEN
	2.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
11	1.008E-8	1.69	LOCHS :02-14-02-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	3.000E-3		RHR-FAN-FS-RHRRMB	FAILURE OF RHR MDP-1B ROOM COOLING FAN TO START
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
12	9.152E-9	1.54	LOCHS :02-14-02-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	2.288E-5		CCW-FAN-CF-ALLFR	CCF OF AFW/CCW AREA FAN COOLERS TO RUN
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
13	9.152E-9	1.54	LOCHS :02-14-02-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	2.288E-5		CCW-FAN-CF-ALLFR	CCF OF AFW/CCW AREA FAN COOLERS TO RUN
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
14	8.250E-9	1.39	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	8.250E-5		AFW-MDP-CF-START	CCFOF AFW MOTOR-DRIVEN PUMPS TO START
	5.000E-3		AFW-TDP-TM-1A	AFW TDP UNAVAILABLE DUE TO TEST AND MAINTENANCE
	2.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
15	8.224E-9	1.38	LOCHS :02-02-05-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP

#	Prob/Freq	Total %	Cut Set	Description
				ROOM DOORS
	2.288E-5		CCW-FAN-CF-ALLFR	CCF OF AFW/CCW AREA FAN COOLERS TO RUN
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
16	8.224E-9	1.38	LOCHS :02-02-05-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	2.288E-5		CCW-FAN-CF-ALLFR	CCF OF AFW/CCW AREA FAN COOLERS TO RUN
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
17	7.586E-9	1.28	LOCHS :02-14-02-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	7.586E-7		CCW-MDP-CF-RUN	CCF OF CCW MDPS TO RUN
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
18	7.586E-9	1.28	LOCHS :02-14-02-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	7.586E-7		CCW-MDP-CF-RUN	CCF OF CCW MDPS TO RUN
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
19	7.155E-9	1.2	LOCHS :02-14-09-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	3.577E-7		SWS-TSA-CF-PG-ALL	CCF OF 4-OF-4 ERCW TRAVELING SCREENS
		EndState	->CD	Added through Event Tree Add
20	6.817E-9	1.15	LOCHS :02-02-05-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	7.586E-7		CCW-MDP-CF-RUN	CCF OF CCW MDPS TO RUN

#	Prob/Freq	Total %	Cut Set	Description
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
21	6.817E-9	1.15	LOCHS :02-02-05-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	7.586E-7		CCW-MDP-CF-RUN	CCF OF CCW MDPS TO RUN
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
22	6.774E-9	1.14	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	8.250E-5		AFW-MDP-CF-START	CCFOF AFW MOTOR-DRIVEN PUMPS TO START
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN
	2.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
23	6.719E-9	1.13	LOCHS :02-14-02-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	2.000E-3		RHR-FAN-TM-RHRRMB	RHR MDP 1B ROOM FAN UNAVAILABLE DUE TO T & M
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
24	6.719E-9	1.13	LOCHS :02-14-02-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	2.000E-3		CCW-MDP-FS-CS	CCW PUMP C-S FAILS TO START
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
25	6.661E-9	1.12	LOCHS :02-14-02-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	1.665E-5		CCW-FAN-CF-ALLFS	CCF OF AFW/CCW AREA FAN

#	Prob/Freq	Total %	Cut Set	Description
				COOLERS TOSTART
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
26	6.661E-9	1.12	LOCHS :02-14-02-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	1.665E-5		CCW-FAN-CF-ALLFS	CCF OF AFW/CCW AREA FAN COOLERS TOSTART
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
27	6.038E-9	1.01	LOCHS :02-02-05-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	2.000E-3		CCW-MDP-FS-CS	CCW PUMP C-S FAILS TO START
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
28	6.038E-9	1.01	LOCHS :02-02-05-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	2.000E-3		HPR-XHE-XM-RECIRC	OPERATOR FAILS TO START HIGH PRESSURE RECIRC
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
29	5.985E-9	1.01	LOCHS :02-02-05-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	1.665E-5		CCW-FAN-CF-ALLFS	CCF OF AFW/CCW AREA FAN COOLERS TOSTART
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW

#	Prob/Freq	Total %	Cut Set	Description
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
30	5.985E-9	1.01	LOCHS :02-02-05-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	1.665E-5		CCW-FAN-CF-ALLFS	CCF OF AFW/CCW AREA FAN COOLERS TOSTART
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
31	5.573E-9	0.94	LOCHS :02-02-10-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A1AA	SWS TRAIN 1A DISCH STRAINER A1AA FAILS
	1.680E-4		SWS-STR-PG-B1BB	SWS TRAIN 1B DISCH TRAINER B1BB FAILS
		EndState	->CD	Added through Event Tree Add
32	5.350E-9	0.9	LOCHS :02-02-10-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.977E-7		SWS-MDP-CF-FRNR	CCF OF SWS NORMALLY RUNNING PUMPS JA/LB/PB/RA
	9.100E-2		SWS-XHE-XM-STBY	OPERATOR FAILS TO START/ALIGN STANDBY PUMPS
		EndState	->CD	Added through Event Tree Add
33	5.040E-9	0.85	LOCHS :02-14-02-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	1.500E-3		RHR-MDP-FS-1B	RHR MDP 1B FAILS TO START
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
34	4.620E-9	0.78	LOCHS :12-01	

#	Prob/Freq	Total %	Cut Set	Description
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	8.250E-5		AFW-MDP-CF-START	CCFOF AFW MOTOR-DRIVEN PUMPS TO START
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	8.000E-3		PPR-SRV-CC-340A	PORV PCV-68-340A FAILS TO OPEN ON DEMAND
		EndState	->CD	Added through Event Tree Add
35	4.620E-9	0.78	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	8.250E-5		AFW-MDP-CF-START	CCFOF AFW MOTOR-DRIVEN PUMPS TO START
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	8.000E-3		PPR-SRV-CC-334	PORV PCV-68-334 FAILS TO OPEN ON DEMAND
		EndState	->CD	Added through Event Tree Add
36	4.447E-9	0.75	LOCHS :02-02-10-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.126E-5		SWS-STR-CF-PG-ALL	CCF OF ALL 4 ERCW STRAINERS
	2.000E-3		SWS-XHE-XL-STR-NORM	
		EndState	->CD	Added through Event Tree Add
37	4.429E-9	0.74	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.536E-7		AFW-AOV-CF-DIS	CCF OF SGs DISCHARGE AOVs TO OPEN
	8.000E-3		PPR-SRV-CC-340A	PORV PCV-68-340A FAILS TO OPEN ON DEMAND
		EndState	->CD	Added through Event Tree Add
38	4.429E-9	0.74	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.536E-7		AFW-AOV-CF-DIS	CCF OF SGs DISCHARGE AOVs TO OPEN
	8.000E-3		PPR-SRV-CC-334	PORV PCV-68-334 FAILS TO OPEN ON DEMAND
		EndState	->CD	Added through Event Tree Add
39	3.577E-9	0.6	LOCHS :02-03-10-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	3.577E-7		SWS-TSA-CF-PG-ALL	CCF OF 4-OF-4 ERCW TRAVELING SCREENS
		EndState	->CD	Added through Event Tree Add
40	3.360E-9	0.56	LOCHS :02-14-02-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS

#	Prob/Freq	Total %	Cut Set	Description
	1.000E-3		RHR-MOV-OO-7421	RWST ISOLATION MOV 74-21 FAILS TO CLOSE
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
41	3.360E-9	0.56	LOCHS :02-14-02-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	1.000E-3		RHR-XHE-XR-HTXB	OPERATOR FAILS TO RESTORE RHR HTX-1B AFTER T & M
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
42	3.360E-9	0.56	LOCHS :02-14-02-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.000E-3		HPR-MOV-CC-6373	SUMP ISOLATION MOV 63-73 FAILS TO OPEN
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
43	3.360E-9	0.56	LOCHS :02-14-02-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.000E-3		CCW-MOV-CC-70153	FAILURE OF RHR/CCW HEAT EXCHANGER MOV 70-153
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
44	3.300E-9	0.55	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	8.250E-5		AFW-MDP-CF-START	CCFOF AFW MOTOR-DRIVEN PUMPS TO START
	5.000E-3		AFW-TDP-TM-1A	AFW TDP UNAVAILABLE DUE TO TEST AND MAINTENANCE
	8.000E-3		PPR-SRV-CC-340A	PORV PCV-68-340A FAILS TO OPEN ON DEMAND
		EndState	->CD	Added through Event Tree Add
45	3.300E-9	0.55	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	8.250E-5		AFW-MDP-CF-START	CCFOF AFW MOTOR-DRIVEN PUMPS TO START
	5.000E-3		AFW-TDP-TM-1A	AFW TDP UNAVAILABLE DUE TO TEST AND MAINTENANCE
	8.000E-3		PPR-SRV-CC-334	PORV PCV-68-334 FAILS TO OPEN ON DEMAND
		EndState	->CD	Added through Event Tree Add
46	3.203E-9	0.54	LOCHS :11-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP

#	Prob/Freq	Total %	Cut Set	Description
				ROOM DOORS
	2.288E-5		CCW-FAN-CF-ALLFR	CCF OF AFW/CCW AREA FAN COOLERS TO RUN
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
		EndState	->CD	Added through Event Tree Add
47	3.203E-9	0.54	LOCHS :11-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	2.288E-5		CCW-FAN-CF-ALLFR	CCF OF AFW/CCW AREA FAN COOLERS TO RUN
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
		EndState	->CD	Added through Event Tree Add
48	3.019E-9	0.51	LOCHS :02-02-05-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.000E-3		RHR-MOV-OO-7421	RWST ISOLATION MOV 74-21 FAILS TO CLOSE
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
49	3.019E-9	0.51	LOCHS :02-02-05-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.000E-3		CCW-MOV-CC-70153	FAILURE OF RHR/CCW HEAT EXCHANGER MOV 70-153
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
50	3.019E-9	0.51	LOCHS :02-02-05-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	1.000E-3		HPR-MOV-CC-6311	RHR DISCHARGE MOV 63-11 FAILS
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS

#	Prob/Freq	Total %	Cut Set	Description
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add

C.3.10 Sequoyah SA4 (Case 2) Cutset Sequence and Report

SA4 (Case 2) Top 5 Dominant Sequences

LOCHS 12-01	/RPS, /OEP, AFW, /HPI, BLEED, /L1-CDF
LOCHS 02-02-10-01	/RPS, /OEP, /AFW, /PORV, LOSC, /RCPT, /RSD, /BP1, BP2, /FW, HPI, SSC1, /L1-CDF
LOCHS 02-02-05-01	/RPS, /OEP, /AFW, /PORV, LOSC, /RCPT, /RSD, /BP1, BP2, /FW, /HPI, SSC, HPR, /L1-CDF
LOCHS 02-14-02-01	/RPS, /OEP, /AFW, /PORV, LOSC, RCPT, /HPI-M, /AFW-A, /SSC, LPR, /L1-CDF
LOCHS 02-14-09-01	/RPS, /OEP, /AFW, /PORV, LOSC, RCPT, HPI-M, /ACC-M, /AFW-A, /SSC1, LPI, /L1-CDF

SU1 Top 50 Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	3.210E-7	15.99	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	8.250E-5		AFW-MDP-CF-START	CCFOF AFW MOTOR-DRIVEN PUMPS TO START
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
2	3.077E-7	15.33	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.536E-7		AFW-AOV-CF-DIS	CCF OF SGs DISCHARGE AOVs TO OPEN
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
3	2.293E-7	11.42	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	8.250E-5		AFW-MDP-CF-START	CCFOF AFW MOTOR-DRIVEN PUMPS TO START
	5.000E-3		AFW-TDP-TM-1A	AFW TDP UNAVAILABLE DUE TO TEST AND MAINTENANCE
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
4	1.883E-7	9.38	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	8.250E-5		AFW-MDP-CF-START	CCFOF AFW MOTOR-DRIVEN PUMPS TO START
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN

#	Prob/Freq	Total %	Cut Set	Description
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
5	7.276E-8	3.63	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.309E-7		AFW-PMP-CF-ALL	COMMON CAUSE FAILURE OF AFW PUMPS (ALL TYPES)
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
6	7.065E-8	3.52	LOCHS :02-02-10-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	3.577E-7		SWS-TSA-CF-PG-ALL	CCF OF 4-OF-4 ERCW TRAVELING SCREENS
		EndState	->CD	Added through Event Tree Add
7	5.929E-8	2.95	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.524E-5		AFW-AOV-CF-MDPS	CCF OF AFW MDP AOVS LCV-3-171/ 164/ 156/ 148
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
8	4.235E-8	2.11	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.524E-5		AFW-AOV-CF-MDPS	CCF OF AFW MDP AOVS LCV-3-171/ 164/ 156/ 148
	5.000E-3		AFW-TDP-TM-1A	AFW TDP UNAVAILABLE DUE TO TEST AND MAINTENANCE
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
9	3.477E-8	1.73	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.524E-5		AFW-AOV-CF-MDPS	CCF OF AFW MDP AOVS LCV-3-171/ 164/ 156/ 148
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
10	3.222E-8	1.61	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.796E-8		AFW-CKV-CF-PMPS	CCF OF AFW PUMP DISCHARGE CHECK VALVES

#	Prob/Freq	Total %	Cut Set	Description
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
11	3.222E-8	1.61	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.796E-8		AFW-CKV-CF-SUCT	CCF OF AFW SUCTION CHECK VALVES
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
12	2.334E-8	1.16	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-3		AFW-MDP-FS-1B	AFW MOTOR-DRIVEN PUMP 1B FAILS TO START
	4.000E-3		AFW-MDP-TM-1A	AFW MDP 1A UNAVAILABLE DUE TO TEST AND MAINTENANCE
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
13	2.334E-8	1.16	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-3		AFW-MDP-FS-1A	AFW MOTOR-DRIVEN PUMP 1A FAILS TO START
	4.000E-3		AFW-MDP-TM-1B	AFW MDP 1B UNAVAILABLE DUE TO TEST AND MAINTENANCE
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
14	1.867E-8	0.93	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.200E-3		AFW-AOV-CC-3156	INLET AOV 3156 TO SG 2 (FROM MDP-A) FAILS
	4.000E-3		AFW-MDP-TM-1B	AFW MDP 1B UNAVAILABLE DUE TO TEST AND MAINTENANCE
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
15	1.867E-8	0.93	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.200E-3		AFW-AOV-CC-3164	INLET AOV 3164 TO SG 1 (FROM MDP-A) FAILS
	4.000E-3		AFW-MDP-TM-1B	AFW MDP 1B UNAVAILABLE DUE TO TEST AND MAINTENANCE
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START

#	Prob/Freq	Total %	Cut Set	Description
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
16	1.867E-8	0.93	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.200E-3		AFW-AOV-CC-3148	INLET AOV 3148 TO SG 3 (FROM MDP-B) FAILS
	4.000E-3		AFW-MDP-TM-1A	AFW MDP 1A UNAVAILABLE DUE TO TEST AND MAINTENANCE
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
17	1.867E-8	0.93	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.200E-3		AFW-AOV-CC-3171	INLET AOV 3171 TO SG 4 (FROM MDP-B) FAILS
	4.000E-3		AFW-MDP-TM-1A	AFW MDP 1A UNAVAILABLE DUE TO TEST AND MAINTENANCE
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
18	1.811E-8	0.9	LOCHS :02-02-05-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	6.000E-3		CCW-MDP-TM-CS	CCW PUMP C-S IS IN TEST OR MAINTENANCE
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
19	1.725E-8	0.86	LOCHS :02-02-05-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	9.600E-7		SWS-MOV-OC-6714	FAILURE OF SWS HEADER A DISCHARGE MOV 67-14
		EndState	->CD	Added through Event Tree Add

#	Prob/Freq	Total %	Cut Set	Description
20	1.725E-8	0.86	LOCHS :02-02-05-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	9.600E-7		SWS-MOV-OC-67365	FAILURE OF SWS HEADER A DISCHARGE MOV 67-365
		EndState	->CD	Added through Event Tree Add
21	1.521E-8	0.76	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	3.911E-6		AFW-MDP-CF-RUN	CCFOF AFW MOTOR-DRIVEN PUMPS TO RUN
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
22	1.369E-8	0.68	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-3		AFW-MDP-FS-1B	AFW MOTOR-DRIVEN PUMP 1B FAILS TO START
	4.000E-3		AFW-MDP-TM-1A	AFW MDP 1A UNAVAILABLE DUE TO TEST AND MAINTENANCE
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
23	1.369E-8	0.68	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-3		AFW-MDP-FS-1A	AFW MOTOR-DRIVEN PUMP 1A FAILS TO START
	4.000E-3		AFW-MDP-TM-1B	AFW MDP 1B UNAVAILABLE DUE TO TEST AND MAINTENANCE
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
24	1.095E-8	0.55	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.200E-3		AFW-AOV-CC-3156	INLET AOV 3156 TO SG 2 (FROM MDP-A) FAILS
	4.000E-3		AFW-MDP-TM-1B	AFW MDP 1B UNAVAILABLE DUE TO TEST AND MAINTENANCE
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN

#	Prob/Freq	Total %	Cut Set	Description
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
25	1.095E-8	0.55	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.200E-3		AFW-AOV-CC-3164	INLET AOV 3164 TO SG 1 (FROM MDP-A) FAILS
	4.000E-3		AFW-MDP-TM-1B	AFW MDP 1B UNAVAILABLE DUE TO TEST AND MAINTENANCE
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
26	1.095E-8	0.55	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.200E-3		AFW-AOV-CC-3148	INLET AOV 3148 TO SG 3 (FROM MDP-B) FAILS
	4.000E-3		AFW-MDP-TM-1A	AFW MDP 1A UNAVAILABLE DUE TO TEST AND MAINTENANCE
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
27	1.095E-8	0.55	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.200E-3		AFW-AOV-CC-3171	INLET AOV 3171 TO SG 4 (FROM MDP-B) FAILS
	4.000E-3		AFW-MDP-TM-1A	AFW MDP 1A UNAVAILABLE DUE TO TEST AND MAINTENANCE
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
28	1.087E-8	0.54	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	3.911E-6		AFW-MDP-CF-RUN	CCFOF AFW MOTOR-DRIVEN PUMPS TO RUN
	5.000E-3		AFW-TDP-TM-1A	AFW TDP UNAVAILABLE DUE TO TEST AND MAINTENANCE
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
29	1.008E-8	0.5	LOCHS :02-14-02-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	6.000E-3		CCW-MDP-TM-CS	CCW PUMP C-S IS IN TEST OR MAINTENANCE
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER

#	Prob/Freq	Total %	Cut Set	Description
				A2AA FAILS
		EndState	->CD	Added through Event Tree Add
30	9.600E-9	0.48	LOCHS :02-14-09-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	9.600E-7		SWS-MOV-OC-67365	FAILURE OF SWS HEADER A DISCHARGE MOV 67-365
		EndState	->CD	Added through Event Tree Add
31	9.600E-9	0.48	LOCHS :02-14-09-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	9.600E-7		SWS-MOV-OC-6714	FAILURE OF SWS HEADER A DISCHARGE MOV 67-14
		EndState	->CD	Added through Event Tree Add
32	8.924E-9	0.44	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	3.911E-6		AFW-MDP-CF-RUN	CCFOF AFW MOTOR-DRIVEN PUMPS TO RUN
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
33	8.754E-9	0.44	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-3		AFW-MDP-FS-1A	AFW MOTOR-DRIVEN PUMP 1A FAILS TO START
	1.500E-3		AFW-MDP-FS-1B	AFW MOTOR-DRIVEN PUMP 1B FAILS TO START
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
34	8.399E-9	0.42	LOCHS :02-14-02-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	5.000E-3		RHR-HTX-TM-HXB	RHR HEAT EXCHANGER HTX-B UNAVAILABLE DUE TO T & M
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
35	8.371E-9	0.42	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.379E-4		AFW-MDP-FR-1B	AFW MOTOR-DRIVEN PUMP 1B FAILS TO RUN
	4.000E-3		AFW-MDP-TM-1A	AFW MDP 1A UNAVAILABLE DUE TO TEST AND MAINTENANCE
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START

#	Prob/Freq	Total %	Cut Set	Description
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
36	8.371E-9	0.42	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	5.379E-4		AFW-MDP-FR-1A	AFW MOTOR-DRIVEN PUMP 1A FAILS TO RUN
	4.000E-3		AFW-MDP-TM-1B	AFW MDP 1B UNAVAILABLE DUE TO TEST AND MAINTENANCE
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
37	8.225E-9	0.41	LOCHS :02-02-05-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	2.288E-5		CCW-FAN-CF-ALLFR	CCF OF AFW/CCW AREA FAN COOLERS TO RUN
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
38	8.225E-9	0.41	LOCHS :02-02-05-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	2.288E-5		CCW-FAN-CF-ALLFR	CCF OF AFW/CCW AREA FAN COOLERS TO RUN
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
39	7.003E-9	0.35	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.200E-3		AFW-AOV-CC-3148	INLET AOV 3148 TO SG 3 (FROM MDP-B) FAILS
	1.500E-3		AFW-MDP-FS-1A	AFW MOTOR-DRIVEN PUMP 1A FAILS TO START
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS

#	Prob/Freq	Total %	Cut Set	Description
				TO START
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
40	7.003E-9	0.35	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.200E-3		AFW-AOV-CC-3171	INLET AOV 3171 TO SG 4 (FROM MDP-B) FAILS
	1.500E-3		AFW-MDP-FS-1A	AFW MOTOR-DRIVEN PUMP 1A FAILS TO START
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
41	7.003E-9	0.35	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.200E-3		AFW-AOV-CC-3156	INLET AOV 3156 TO SG 2 (FROM MDP-A) FAILS
	1.500E-3		AFW-MDP-FS-1B	AFW MOTOR-DRIVEN PUMP 1B FAILS TO START
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
42	7.003E-9	0.35	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.200E-3		AFW-AOV-CC-3164	INLET AOV 3164 TO SG 1 (FROM MDP-A) FAILS
	1.500E-3		AFW-MDP-FS-1B	AFW MOTOR-DRIVEN PUMP 1B FAILS TO START
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
43	6.817E-9	0.34	LOCHS :02-02-05-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	7.586E-7		CCW-MDP-CF-RUN	CCF OF CCW MDPS TO RUN
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
44	6.817E-9	0.34	LOCHS :02-02-05-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK

#	Prob/Freq	Total %	Cut Set	Description
	7.586E-7		CCW-MDP-CF-RUN	CCF OF CCW MDPS TO RUN
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
45	6.253E-9	0.31	LOCHS :12-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.500E-3		AFW-MDP-FS-1A	AFW MOTOR-DRIVEN PUMP 1A FAILS TO START
	1.500E-3		AFW-MDP-FS-1B	AFW MOTOR-DRIVEN PUMP 1B FAILS TO START
	5.000E-3		AFW-TDP-TM-1A	AFW TDP UNAVAILABLE DUE TO TEST AND MAINTENANCE
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
46	6.038E-9	0.3	LOCHS :02-02-05-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	2.000E-3		CCW-MDP-FS-CS	CCW PUMP C-S FAILS TO START
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
47	6.038E-9	0.3	LOCHS :02-02-05-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	2.000E-3		HPR-XHE-XM-RECIRC	OPERATOR FAILS TO START HIGH PRESSURE RECIRC
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
48	5.986E-9	0.3	LOCHS :02-02-05-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP

#	Prob/Freq	Total %	Cut Set	Description
				ROOM DOORS
	1.665E-5		CCW-FAN-CF-ALLFS	CCF OF AFW/CCW AREA FAN COOLERS TOSTART
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
49	5.986E-9	0.3	LOCHS :02-02-05-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	1.665E-5		CCW-FAN-CF-ALLFS	CCF OF AFW/CCW AREA FAN COOLERS TOSTART
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
50	5.573E-9	0.28	LOCHS :02-02-10-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A1AA	SWS TRAIN 1A DISCH STRAINER A1AA FAILS
	1.680E-4		SWS-STR-PG-B1BB	SWS TRAIN 1B DISCH TRAINER B1BB FAILS
		EndState	->CD	Added through Event Tree Add

C.3.11 Sequoyah SA4 (Case 3) Cutset Sequence and Report

SA4 (Case 3) Top 5 Dominant Sequences

LOMFW 02-02-09-01	/RPS,/OPE,/AFW,/PORV,LOSC,/RCPT,/RSD,/BP1,BP2,/FW,HPI,/SSC1,LPI,/L1-CDF
LOMFW 02-14-02-01	/RPS,/OEP,/AFW,/PORV,LOSC,RCPT,/HPI-M,/AFW-A,/SSC,LPR,/L1-CDF
LOMFW 02-14-09-01	/RPS,/OEP,/AFW,/PORV,LOSC,RCPT,HPI-M,/ACC-M,/AFW-A,/SCC1,LPI,/L1-CDF
LOMFW 02-02-05-01	/RPS,/OPE,/AFW,/PORV,LOSC,/RCPT,/RSD,/BP1,BP2,/FW,/HPI,SSC1,HPR,/L1-CDF
LOMFW 20-01	/RPS,/OEP,AFW,MFW,/HPI,BLEED,/L1-CDF

SA4 (Case 3) Top 50 Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	7.065E-8	11.84	LOMFW :02-02-09-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	3.577E-7		SWS-TSA-CF-PG-ALL	CCF OF 4-OF-4 ERCW TRAVELING SCREENS
		EndState	->CD	Added through Event Tree Add
2	2.016E-8	3.38	LOMFW :02-14-02-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	6.000E-3		CCW-MDP-TM-CS	CCW PUMP C-S IS IN TEST OR MAINTENANCE
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
3	1.920E-8	3.22	LOMFW :02-14-09-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	9.600E-7		SWS-MOV-OC-67365	FAILURE OF SWS HEADER A DISCHARGE MOV 67-365
		EndState	->CD	Added through Event Tree Add
4	1.920E-8	3.22	LOMFW :02-14-09-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	9.600E-7		SWS-MOV-OC-6714	FAILURE OF SWS HEADER A DISCHARGE MOV 67-14
		EndState	->CD	Added through Event Tree Add
5	1.811E-8	3.04	LOMFW :02-02-05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	6.000E-3		CCW-MDP-TM-CS	CCW PUMP C-S IS IN TEST OR MAINTENANCE
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
6	1.725E-8	2.89	LOMFW :02-02-05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW

#	Prob/Freq	Total %	Cut Set	Description
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	9.600E-7		SWS-MOV-OC-67365	FAILURE OF SWS HEADER A DISCHARGE MOV 67-365
		EndState	->CD	Added through Event Tree Add
7	1.725E-8	2.89	LOMFW :02-02-05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	9.600E-7		SWS-MOV-OC-6714	FAILURE OF SWS HEADER A DISCHARGE MOV 67-14
		EndState	->CD	Added through Event Tree Add
8	1.680E-8	2.82	LOMFW :02-14-02-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	5.000E-3		RHR-HTX-TM-HXB	RHR HEAT EXCHANGER HTX-B UNAVAILABLE DUE TO T & M
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
9	1.155E-8	1.94	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	8.250E-5		AFW-MDP-CF-START	CCFOF AFW MOTOR-DRIVEN PUMPS TO START
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	2.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
10	1.107E-8	1.86	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	5.536E-7		AFW-AOV-CF-DIS	CCF OF SGs DISCHARGE AOVs TO OPEN
	2.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
11	1.008E-8	1.69	LOMFW :02-14-02-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	3.000E-3		RHR-FAN-FS-RHRRMB	FAILURE OF RHR MDP-1B ROOM COOLING FAN TO START
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS

#	Prob/Freq	Total %	Cut Set	Description
		EndState	->CD	Added through Event Tree Add
12	9.152E-9	1.53	LOMFW :02-14-02-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	2.288E-5		CCW-FAN-CF-ALLFR	CCF OF AFW/CCW AREA FAN COOLERS TO RUN
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
13	9.152E-9	1.53	LOMFW :02-14-02-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	2.288E-5		CCW-FAN-CF-ALLFR	CCF OF AFW/CCW AREA FAN COOLERS TO RUN
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
14	8.250E-9	1.38	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	8.250E-5		AFW-MDP-CF-START	CCFOF AFW MOTOR-DRIVEN PUMPS TO START
	5.000E-3		AFW-TDP-TM-1A	AFW TDP UNAVAILABLE DUE TO TEST AND MAINTENANCE
	2.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
15	8.224E-9	1.38	LOMFW :02-02-05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	2.288E-5		CCW-FAN-CF-ALLFR	CCF OF AFW/CCW AREA FAN COOLERS TO RUN
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
16	8.224E-9	1.38	LOMFW :02-02-05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	2.288E-5		CCW-FAN-CF-ALLFR	CCF OF AFW/CCW AREA FAN COOLERS TO RUN
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY

#	Prob/Freq	Total %	Cut Set	Description
				RUNNING
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
17	7.586E-9	1.27	LOMFW :02-14-02-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	7.586E-7		CCW-MDP-CF-RUN	CCF OF CCW MDPS TO RUN
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
18	7.586E-9	1.27	LOMFW :02-14-02-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	7.586E-7		CCW-MDP-CF-RUN	CCF OF CCW MDPS TO RUN
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
19	7.155E-9	1.2	LOMFW :02-14-09-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	3.577E-7		SWS-TSA-CF-PG-ALL	CCF OF 4-OF-4 ERCW TRAVELING SCREENS
		EndState	->CD	Added through Event Tree Add
20	6.817E-9	1.14	LOMFW :02-02-05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	7.586E-7		CCW-MDP-CF-RUN	CCF OF CCW MDPS TO RUN
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
21	6.817E-9	1.14	LOMFW :02-02-05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	7.586E-7		CCW-MDP-CF-RUN	CCF OF CCW MDPS TO RUN
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW

#	Prob/Freq	Total %	Cut Set	Description
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
22	6.774E-9	1.14	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	8.250E-5		AFW-MDP-CF-START	CCFOF AFW MOTOR-DRIVEN PUMPS TO START
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN
	2.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
23	6.719E-9	1.13	LOMFW :02-14-02-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	2.000E-3		RHR-FAN-TM-RHRRMB	RHR MDP 1B ROOM FAN UNAVAILABLE DUE TO T & M
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
24	6.719E-9	1.13	LOMFW :02-14-02-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	2.000E-3		CCW-MDP-FS-CS	CCW PUMP C-S FAILS TO START
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
25	6.661E-9	1.12	LOMFW :02-14-02-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	1.665E-5		CCW-FAN-CF-ALLFS	CCF OF AFW/CCW AREA FAN COOLERS TOSTART
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
26	6.661E-9	1.12	LOMFW :02-14-02-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	1.665E-5		CCW-FAN-CF-ALLFS	CCF OF AFW/CCW AREA FAN COOLERS TOSTART
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
27	6.038E-9	1.01	LOMFW :02-02-05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	2.000E-3		CCW-MDP-FS-CS	CCW PUMP C-S FAILS TO START

#	Prob/Freq	Total %	Cut Set	Description
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
28	6.038E-9	1.01	LOMFW :02-02-05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	2.000E-3		HPR-XHE-XM-RECIRC	OPERATOR FAILS TO START HIGH PRESSURE RECIRC
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
29	5.985E-9	1	LOMFW :02-02-05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	1.665E-5		CCW-FAN-CF-ALLFS	CCF OF AFW/CCW AREA FAN COOLERS TOSTART
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
30	5.985E-9	1	LOMFW :02-02-05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	1.665E-5		CCW-FAN-CF-ALLFS	CCF OF AFW/CCW AREA FAN COOLERS TOSTART
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS

#	Prob/Freq	Total %	Cut Set	Description
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
31	5.573E-9	0.93	LOMFW :02-02-08-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A1AA	SWS TRAIN 1A DISCH STRAINER A1AA FAILS
	1.680E-4		SWS-STR-PG-B1BB	SWS TRAIN 1B DISCH TRAINER B1BB FAILS
		EndState	->CD	Added through Event Tree Add
32	5.350E-9	0.9	LOMFW :02-02-09-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.977E-7		SWS-MDP-CF-FRNR	CCF OF SWS NORMALLY RUNNING PUMPS JA/LB/PB/RA
	9.100E-2		SWS-XHE-XM-STBY	OPERATOR FAILS TO START/ALIGN STANDBY PUMPS
		EndState	->CD	Added through Event Tree Add
33	5.040E-9	0.84	LOMFW :02-14-02-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	1.500E-3		RHR-MDP-FS-1B	RHR MDP 1B FAILS TO START
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
34	4.620E-9	0.77	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	8.250E-5		AFW-MDP-CF-START	CCFOF AFW MOTOR-DRIVEN PUMPS TO START
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	8.000E-3		PPR-SRV-CC-340A	PORV PCV-68-340A FAILS TO OPEN ON DEMAND
		EndState	->CD	Added through Event Tree Add
35	4.620E-9	0.77	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	8.250E-5		AFW-MDP-CF-START	CCFOF AFW MOTOR-DRIVEN PUMPS TO START
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	8.000E-3		PPR-SRV-CC-334	PORV PCV-68-334 FAILS TO OPEN ON DEMAND
		EndState	->CD	Added through Event Tree Add
36	4.447E-9	0.75	LOMFW :02-02-09-01	

#	Prob/Freq	Total %	Cut Set	Description
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.126E-5		SWS-STR-CF-PG-ALL	CCF OF ALL 4 ERCW STRAINERS
	2.000E-3		SWS-XHE-XL-STR-NORM	
		EndState	->CD	Added through Event Tree Add
37	4.429E-9	0.74	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	5.536E-7		AFW-AOV-CF-DIS	CCF OF SGs DISCHARGE AOVs TO OPEN
	8.000E-3		PPR-SRV-CC-334	PORV PCV-68-334 FAILS TO OPEN ON DEMAND
		EndState	->CD	Added through Event Tree Add
38	4.429E-9	0.74	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	5.536E-7		AFW-AOV-CF-DIS	CCF OF SGs DISCHARGE AOVs TO OPEN
	8.000E-3		PPR-SRV-CC-340A	PORV PCV-68-340A FAILS TO OPEN ON DEMAND
		EndState	->CD	Added through Event Tree Add
39	3.577E-9	0.6	LOMFW :02-03-09-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	3.577E-7		SWS-TSA-CF-PG-ALL	CCF OF 4-OF-4 ERCW TRAVELING SCREENS
		EndState	->CD	Added through Event Tree Add
40	3.360E-9	0.56	LOMFW :02-14-02-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.000E-3		CCW-MOV-CC-70153	FAILURE OF RHR/CCW HEAT EXCHANGER MOV 70-153
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
41	3.360E-9	0.56	LOMFW :02-14-02-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	1.000E-3		RHR-XHE-XR-HTXB	OPERATOR FAILS TO RESTORE RHR HTX-1B AFTER T & M
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
42	3.360E-9	0.56	LOMFW :02-14-02-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS

#	Prob/Freq	Total %	Cut Set	Description
	1.000E-3		RHR-MOV-OO-7421	RWST ISOLATION MOV 74-21 FAILS TO CLOSE
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
43	3.360E-9	0.56	LOMFW :02-14-02-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.000E-3		HPR-MOV-CC-6373	SUMP ISOLATION MOV 63-73 FAILS TO OPEN
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
44	3.300E-9	0.55	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	8.250E-5		AFW-MDP-CF-START	CCFOF AFW MOTOR-DRIVEN PUMPS TO START
	5.000E-3		AFW-TDP-TM-1A	AFW TDP UNAVAILABLE DUE TO TEST AND MAINTENANCE
	8.000E-3		PPR-SRV-CC-340A	PORV PCV-68-340A FAILS TO OPEN ON DEMAND
		EndState	->CD	Added through Event Tree Add
45	3.300E-9	0.55	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	8.250E-5		AFW-MDP-CF-START	CCFOF AFW MOTOR-DRIVEN PUMPS TO START
	5.000E-3		AFW-TDP-TM-1A	AFW TDP UNAVAILABLE DUE TO TEST AND MAINTENANCE
	8.000E-3		PPR-SRV-CC-334	PORV PCV-68-334 FAILS TO OPEN ON DEMAND
		EndState	->CD	Added through Event Tree Add
46	3.203E-9	0.54	LOMFW :19-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	2.288E-5		CCW-FAN-CF-ALLFR	CCF OF AFW/CCW AREA FAN COOLERS TO RUN
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
		EndState	->CD	Added through Event Tree Add
47	3.203E-9	0.54	LOMFW :19-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	2.288E-5		CCW-FAN-CF-ALLFR	CCF OF AFW/CCW AREA FAN COOLERS TO RUN
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
		EndState	->CD	Added through Event Tree Add
48	3.019E-9	0.51	LOMFW :02-02-05-01	

#	Prob/Freq	Total %	Cut Set	Description
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.000E-3		RHR-MOV-OO-7421	RWST ISOLATION MOV 74-21 FAILS TO CLOSE
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
49	3.019E-9	0.51	LOMFW :02-02-05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.000E-3		CCW-MOV-CC-70153	FAILURE OF RHR/CCW HEAT EXCHANGER MOV 70-153
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
50	3.019E-9	0.51	LOMFW :02-02-05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	1.000E-3		HPR-MOV-CC-6373	SUMP ISOLATION MOV 63-73 FAILS TO OPEN
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add

C.3.12 Sequoyah SA4 (Case 4) Cutset Sequence and Report

SA4 (Case 4) Top 5 Dominant Sequences

LOMFW 20-01	/RPS,/OEP,AFW,MFW,/HPI,BLEED,/L1-CDF
LOMFW 02-02-05-01	/RPS,/OPE,/AFW,/PORV,LOSC,/RCPT,/RSD,/BP1,BP2,/FW,/HPI,SSC1,HPR,/L1-CDF
LOMFW 02-14-02-01	/RPS,/OEP,/AFW,/PORV,LOSC,RCPT,/HPI-M,/AFW-A,/SSC,LPR,/L1-CDF
LOMFW 02-14-09-01	/RPS,/OEP,/AFW,/PORV,LOSC,RCPT,HPI-M,/ACC-M,/AFW-A,/SCC1,LPI,/L1-CDF
LOMFW 02-02-08-01	/RPS,/OPE,/AFW,/PORV,LOSC,/RCPT,/RSD,/BP1,BP2,/FW,HPI,/SSC1,/LPI,RHR,LPR/L1-CDF

SA4 (Case 4) Top 50 Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	3.210E-7	15.73	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	8.250E-5		AFW-MDP-CF-START	CCFOF AFW MOTOR-DRIVEN PUMPS TO START
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
2	3.077E-7	15.08	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	5.536E-7		AFW-AOV-CF-DIS	CCF OF SGs DISCHARGE AOVs TO OPEN
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
3	2.293E-7	11.24	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	8.250E-5		AFW-MDP-CF-START	CCFOF AFW MOTOR-DRIVEN PUMPS TO START
	5.000E-3		AFW-TDP-TM-1A	AFW TDP UNAVAILABLE DUE TO TEST AND MAINTENANCE
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
4	1.883E-7	9.23	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	8.250E-5		AFW-MDP-CF-START	CCFOF AFW MOTOR-DRIVEN PUMPS TO START
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
5	7.276E-8	3.57	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER

#	Prob/Freq	Total %	Cut Set	Description
	1.309E-7		AFW-PMP-CF-ALL	COMMON CAUSE FAILURE OF AFW PUMPS (ALL TYPES)
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
6	7.065E-8	3.46	LOMFW :02-02-09-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	3.577E-7		SWS-TSA-CF-PG-ALL	CCF OF 4-OF-4 ERCW TRAVELING SCREENS
		EndState	->CD	Added through Event Tree Add
7	5.929E-8	2.91	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.524E-5		AFW-AOV-CF-MDPS	CCF OF AFW MDP AOVS LCV-3-171/ 164/ 156/ 148
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
8	4.235E-8	2.08	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.524E-5		AFW-AOV-CF-MDPS	CCF OF AFW MDP AOVS LCV-3-171/ 164/ 156/ 148
	5.000E-3		AFW-TDP-TM-1A	AFW TDP UNAVAILABLE DUE TO TEST AND MAINTENANCE
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
9	3.477E-8	1.7	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.524E-5		AFW-AOV-CF-MDPS	CCF OF AFW MDP AOVS LCV-3-171/ 164/ 156/ 148
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
10	3.222E-8	1.58	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	5.796E-8		AFW-CKV-CF-SUCT	CCF OF AFW SUCTION CHECK VALVES
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
11	3.222E-8	1.58	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER

#	Prob/Freq	Total %	Cut Set	Description
	5.796E-8		AFW-CKV-CF-PMPS	CCF OF AFW PUMP DISCHARGE CHECK VALVES
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
12	2.357E-8	1.16	LOMFW :02-02-10-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	3.336E-1		OPR-XHE-XM-DEPRCS1	OPERATOR FAILS TO DEPRESSURIZE RCS / SECONDARY SIDE - RAPID
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	3.577E-7		SWS-TSA-CF-PG-ALL	CCF OF 4-OF-4 ERCW TRAVELING SCREENS
		EndState	->CD	Added through Event Tree Add
13	2.334E-8	1.14	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.500E-3		AFW-MDP-FS-1A	AFW MOTOR-DRIVEN PUMP 1A FAILS TO START
	4.000E-3		AFW-MDP-TM-1B	AFW MDP 1B UNAVAILABLE DUE TO TEST AND MAINTENANCE
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
14	2.334E-8	1.14	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.500E-3		AFW-MDP-FS-1B	AFW MOTOR-DRIVEN PUMP 1B FAILS TO START
	4.000E-3		AFW-MDP-TM-1A	AFW MDP 1A UNAVAILABLE DUE TO TEST AND MAINTENANCE
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
15	1.867E-8	0.92	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.200E-3		AFW-AOV-CC-3156	INLET AOV 3156 TO SG 2 (FROM MDP-A) FAILS
	4.000E-3		AFW-MDP-TM-1B	AFW MDP 1B UNAVAILABLE DUE TO TEST AND MAINTENANCE
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
16	1.867E-8	0.92	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER

#	Prob/Freq	Total %	Cut Set	Description
	1.200E-3		AFW-AOV-CC-3164	INLET AOV 3164 TO SG 1 (FROM MDP-A) FAILS
	4.000E-3		AFW-MDP-TM-1B	AFW MDP 1B UNAVAILABLE DUE TO TEST AND MAINTENANCE
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
17	1.867E-8	0.92	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.200E-3		AFW-AOV-CC-3148	INLET AOV 3148 TO SG 3 (FROM MDP-B) FAILS
	4.000E-3		AFW-MDP-TM-1A	AFW MDP 1A UNAVAILABLE DUE TO TEST AND MAINTENANCE
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
18	1.867E-8	0.92	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.200E-3		AFW-AOV-CC-3171	INLET AOV 3171 TO SG 4 (FROM MDP-B) FAILS
	4.000E-3		AFW-MDP-TM-1A	AFW MDP 1A UNAVAILABLE DUE TO TEST AND MAINTENANCE
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
19	1.811E-8	0.89	LOMFW :02-02-05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	6.000E-3		CCW-MDP-TM-CS	CCW PUMP C-S IS IN TEST OR MAINTENANCE
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
20	1.725E-8	0.85	LOMFW :02-02-05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS

#	Prob/Freq	Total %	Cut Set	Description
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	9.600E-7		SWS-MOV-OC-67365	FAILURE OF SWS HEADER A DISCHARGE MOV 67-365
		EndState	->CD	Added through Event Tree Add
21	1.725E-8	0.85	LOMFW :02-02-05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	9.600E-7		SWS-MOV-OC-6714	FAILURE OF SWS HEADER A DISCHARGE MOV 67-14
		EndState	->CD	Added through Event Tree Add
22	1.521E-8	0.75	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	3.911E-6		AFW-MDP-CF-RUN	CCFOF AFW MOTOR-DRIVEN PUMPS TO RUN
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
23	1.369E-8	0.67	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.500E-3		AFW-MDP-FS-1A	AFW MOTOR-DRIVEN PUMP 1A FAILS TO START
	4.000E-3		AFW-MDP-TM-1B	AFW MDP 1B UNAVAILABLE DUE TO TEST AND MAINTENANCE
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
24	1.369E-8	0.67	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.500E-3		AFW-MDP-FS-1B	AFW MOTOR-DRIVEN PUMP 1B FAILS TO START
	4.000E-3		AFW-MDP-TM-1A	AFW MDP 1A UNAVAILABLE DUE TO TEST AND MAINTENANCE
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
25	1.095E-8	0.54	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER

#	Prob/Freq	Total %	Cut Set	Description
	1.200E-3		AFW-AOV-CC-3156	INLET AOV 3156 TO SG 2 (FROM MDP-A) FAILS
	4.000E-3		AFW-MDP-TM-1B	AFW MDP 1B UNAVAILABLE DUE TO TEST AND MAINTENANCE
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
26	1.095E-8	0.54	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.200E-3		AFW-AOV-CC-3164	INLET AOV 3164 TO SG 1 (FROM MDP-A) FAILS
	4.000E-3		AFW-MDP-TM-1B	AFW MDP 1B UNAVAILABLE DUE TO TEST AND MAINTENANCE
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
27	1.095E-8	0.54	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.200E-3		AFW-AOV-CC-3148	INLET AOV 3148 TO SG 3 (FROM MDP-B) FAILS
	4.000E-3		AFW-MDP-TM-1A	AFW MDP 1A UNAVAILABLE DUE TO TEST AND MAINTENANCE
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
28	1.095E-8	0.54	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.200E-3		AFW-AOV-CC-3171	INLET AOV 3171 TO SG 4 (FROM MDP-B) FAILS
	4.000E-3		AFW-MDP-TM-1A	AFW MDP 1A UNAVAILABLE DUE TO TEST AND MAINTENANCE
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
29	1.087E-8	0.53	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	3.911E-6		AFW-MDP-CF-RUN	CCFOF AFW MOTOR-DRIVEN PUMPS TO RUN
	5.000E-3		AFW-TDP-TM-1A	AFW TDP UNAVAILABLE DUE TO TEST AND MAINTENANCE
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add

#	Prob/Freq	Total %	Cut Set	Description
30	1.008E-8	0.49	LOMFW :02-14-02-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	6.000E-3		CCW-MDP-TM-CS	CCW PUMP C-S IS IN TEST OR MAINTENANCE
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
31	9.600E-9	0.47	LOMFW :02-14-09-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	9.600E-7		SWS-MOV-OC-67365	FAILURE OF SWS HEADER A DISCHARGE MOV 67-365
		EndState	->CD	Added through Event Tree Add
32	9.600E-9	0.47	LOMFW :02-14-09-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	9.600E-7		SWS-MOV-OC-6714	FAILURE OF SWS HEADER A DISCHARGE MOV 67-14
		EndState	->CD	Added through Event Tree Add
33	8.924E-9	0.44	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	3.911E-6		AFW-MDP-CF-RUN	CCFOF AFW MOTOR-DRIVEN PUMPS TO RUN
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
34	8.754E-9	0.43	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.500E-3		AFW-MDP-FS-1A	AFW MOTOR-DRIVEN PUMP 1A FAILS TO START
	1.500E-3		AFW-MDP-FS-1B	AFW MOTOR-DRIVEN PUMP 1B FAILS TO START
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
35	8.399E-9	0.41	LOMFW :02-14-02-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	5.000E-3		RHR-HTX-TM-HXB	RHR HEAT EXCHANGER HTX-B UNAVAILABLE DUE TO T & M
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
36	8.371E-9	0.41	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER

#	Prob/Freq	Total %	Cut Set	Description
	5.379E-4		AFW-MDP-FR-1A	AFW MOTOR-DRIVEN PUMP 1A FAILS TO RUN
	4.000E-3		AFW-MDP-TM-1B	AFW MDP 1B UNAVAILABLE DUE TO TEST AND MAINTENANCE
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
37	8.371E-9	0.41	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	5.379E-4		AFW-MDP-FR-1B	AFW MOTOR-DRIVEN PUMP 1B FAILS TO RUN
	4.000E-3		AFW-MDP-TM-1A	AFW MDP 1A UNAVAILABLE DUE TO TEST AND MAINTENANCE
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
38	8.225E-9	0.4	LOMFW :02-02-05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	2.288E-5		CCW-FAN-CF-ALLFR	CCF OF AFW/CCW AREA FAN COOLERS TO RUN
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
39	8.225E-9	0.4	LOMFW :02-02-05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	2.288E-5		CCW-FAN-CF-ALLFR	CCF OF AFW/CCW AREA FAN COOLERS TO RUN
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
40	7.003E-9	0.34	LOMFW :20-01	

#	Prob/Freq	Total %	Cut Set	Description
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.200E-3		AFW-AOV-CC-3156	INLET AOV 3156 TO SG 2 (FROM MDP-A) FAILS
	1.500E-3		AFW-MDP-FS-1B	AFW MOTOR-DRIVEN PUMP 1B FAILS TO START
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
41	7.003E-9	0.34	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.200E-3		AFW-AOV-CC-3164	INLET AOV 3164 TO SG 1 (FROM MDP-A) FAILS
	1.500E-3		AFW-MDP-FS-1B	AFW MOTOR-DRIVEN PUMP 1B FAILS TO START
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
42	7.003E-9	0.34	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.200E-3		AFW-AOV-CC-3148	INLET AOV 3148 TO SG 3 (FROM MDP-B) FAILS
	1.500E-3		AFW-MDP-FS-1A	AFW MOTOR-DRIVEN PUMP 1A FAILS TO START
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
43	7.003E-9	0.34	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.200E-3		AFW-AOV-CC-3171	INLET AOV 3171 TO SG 4 (FROM MDP-B) FAILS
	1.500E-3		AFW-MDP-FS-1A	AFW MOTOR-DRIVEN PUMP 1A FAILS TO START
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
44	6.817E-9	0.33	LOMFW :02-02-05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	7.586E-7		CCW-MDP-CF-RUN	CCF OF CCW MDPS TO RUN
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS

#	Prob/Freq	Total %	Cut Set	Description
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
45	6.817E-9	0.33	LOMFW :02-02-05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	7.586E-7		CCW-MDP-CF-RUN	CCF OF CCW MDPS TO RUN
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
46	6.253E-9	0.31	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.500E-3		AFW-MDP-FS-1A	AFW MOTOR-DRIVEN PUMP 1A FAILS TO START
	1.500E-3		AFW-MDP-FS-1B	AFW MOTOR-DRIVEN PUMP 1B FAILS TO START
	5.000E-3		AFW-TDP-TM-1A	AFW TDP UNAVAILABLE DUE TO TEST AND MAINTENANCE
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
		EndState	->CD	Added through Event Tree Add
47	6.038E-9	0.3	LOMFW :02-02-05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	2.000E-3		CCW-MDP-FS-CS	CCW PUMP C-S FAILS TO START
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
48	6.038E-9	0.3	LOMFW :02-02-05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	2.000E-3		HPR-XHE-XM-RECIRC	OPERATOR FAILS TO START HIGH PRESSURE RECIRC
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS

#	Prob/Freq	Total %	Cut Set	Description
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
49	5.986E-9	0.29	LOMFW :02-02-05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	1.665E-5		CCW-FAN-CF-ALLFS	CCF OF AFW/CCW AREA FAN COOLERS TOSTART
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
50	5.986E-9	0.29	LOMFW :02-02-05-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	1.665E-5		CCW-FAN-CF-ALLFS	CCF OF AFW/CCW AREA FAN COOLERS TOSTART
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add

C.3.13 Sequoyah SA4 (Case 5) Cutset Sequence and Report

SA4 (Case 5) Dominant Sequences

TRANS 02-02-09-01	/RPS,/OEP,/AFW,/PORV,LOSC,/RCPT,/RSC,/BP1,BP2,/FW,HPI,/SSC1,LPI,/L1CDF
TRANS 02-14-02-01	/RPS,/OEP,/AFW,/PORV,LOSC,RCPT,/HPI-M,/AFW-A,/SSC,LPR,/L1-CDF
TRANS 02-14-09-01	/RPS,/OEP,/AFW,/PORV,LOSC,RCPT,HPI-M,/ACC-M,/AFW-A,/SSC,LPI,/L1-CDF
TRANS 02-02-05-01	/RPS,/OEP,/AFW,/PORV,LOSC,/RCPT,/RSD,/BP1,BP2,/FW,/HPI,SSC,HPR,/L1-CDF
TRANS 02-04-02-01	/RPS,/OEP,/AFW,/PORV,LOSC,/RCPT,BP1,BP2,/HPI-M,/AFW-A,SSC,HPR-M,/L1-CDF

SA4 (Case 5) Top 50 Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	7.065E-8	15.01	TRANS :02-02-09-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	3.577E-7		SWS-TSA-CF-PG-ALL	CCF OF 4-OF-4 ERCW TRAVELING SCREENS
		EndState	->CD	Added through Event Tree Add
2	2.016E-8	4.28	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	6.000E-3		CCW-MDP-TM-CS	CCW PUMP C-S IS IN TEST OR MAINTENANCE
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
3	1.920E-8	4.08	TRANS :02-14-09-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	9.600E-7		SWS-MOV-OC-6714	FAILURE OF SWS HEADER A DISCHARGE MOV 67-14
		EndState	->CD	Added through Event Tree Add
4	1.920E-8	4.08	TRANS :02-14-09-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	9.600E-7		SWS-MOV-OC-67365	FAILURE OF SWS HEADER A DISCHARGE MOV 67-365
		EndState	->CD	Added through Event Tree Add
5	1.811E-8	3.85	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	6.000E-3		CCW-MDP-TM-CS	CCW PUMP C-S IS IN TEST OR MAINTENANCE
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
6	1.725E-8	3.66	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS

#	Prob/Freq	Total %	Cut Set	Description
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	9.600E-7		SWS-MOV-OC-6714	FAILURE OF SWS HEADER A DISCHARGE MOV 67-14
		EndState	->CD	Added through Event Tree Add
7	1.725E-8	3.66	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	9.600E-7		SWS-MOV-OC-67365	FAILURE OF SWS HEADER A DISCHARGE MOV 67-365
		EndState	->CD	Added through Event Tree Add
8	1.680E-8	3.57	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	5.000E-3		RHR-HTX-TM-HXB	RHR HEAT EXCHANGER HTX-B UNAVAILABLE DUE TO T & M
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
9	1.008E-8	2.14	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	3.000E-3		RHR-FAN-FS-RHRRMB	FAILURE OF RHR MDP-1B ROOM COOLING FAN TO START
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
10	9.152E-9	1.94	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	2.288E-5		CCW-FAN-CF-ALLFR	CCF OF AFW/CCW AREA FAN COOLERS TO RUN
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
11	9.152E-9	1.94	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	2.288E-5		CCW-FAN-CF-ALLFR	CCF OF AFW/CCW AREA FAN COOLERS TO RUN
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS

#	Prob/Freq	Total %	Cut Set	Description
		EndState	->CD	Added through Event Tree Add
12	8.224E-9	1.75	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	2.288E-5		CCW-FAN-CF-ALLFR	CCF OF AFW/CCW AREA FAN COOLERS TO RUN
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
13	8.224E-9	1.75	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	2.288E-5		CCW-FAN-CF-ALLFR	CCF OF AFW/CCW AREA FAN COOLERS TO RUN
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
14	7.586E-9	1.61	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	7.586E-7		CCW-MDP-CF-RUN	CCF OF CCW MDPS TO RUN
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
15	7.586E-9	1.61	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	7.586E-7		CCW-MDP-CF-RUN	CCF OF CCW MDPS TO RUN
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
16	7.155E-9	1.52	TRANS :02-14-09-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	3.577E-7		SWS-TSA-CF-PG-ALL	CCF OF 4-OF-4 ERCW TRAVELING SCREENS
		EndState	->CD	Added through Event Tree Add

#	Prob/Freq	Total %	Cut Set	Description
17	6.817E-9	1.45	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	7.586E-7		CCW-MDP-CF-RUN	CCF OF CCW MDPS TO RUN
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
18	6.817E-9	1.45	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	7.586E-7		CCW-MDP-CF-RUN	CCF OF CCW MDPS TO RUN
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
19	6.719E-9	1.43	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	2.000E-3		RHR-FAN-TM-RHRRMB	RHR MDP 1B ROOM FAN UNAVAILABLE DUE TO T & M
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
20	6.719E-9	1.43	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.000E-3		CCW-MDP-FS-CS	CCW PUMP C-S FAILS TO START
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
21	6.661E-9	1.41	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	1.665E-5		CCW-FAN-CF-ALLFS	CCF OF AFW/CCW AREA FAN COOLERS TOSTART
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
22	6.661E-9	1.41	TRANS :02-14-02-01	

#	Prob/Freq	Total %	Cut Set	Description
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	1.665E-5		CCW-FAN-CF-ALLFS	CCF OF AFW/CCW AREA FAN COOLERS TOSTART
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
23	6.038E-9	1.28	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.000E-3		CCW-MDP-FS-CS	CCW PUMP C-S FAILS TO START
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
24	6.038E-9	1.28	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	2.000E-3		HPR-XHE-XM-RECIRC	OPERATOR FAILS TO START HIGH PRESSURE RECIRC
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
25	5.985E-9	1.27	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	1.665E-5		CCW-FAN-CF-ALLFS	CCF OF AFW/CCW AREA FAN COOLERS TOSTART
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
26	5.985E-9	1.27	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT

#	Prob/Freq	Total %	Cut Set	Description
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	1.665E-5		CCW-FAN-CF-ALLFS	CCF OF AFW/CCW AREA FAN COOLERS TOSTART
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
27	5.573E-9	1.18	TRANS :02-02-08-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A1AA	SWS TRAIN 1A DISCH STRAINER A1AA FAILS
	1.680E-4		SWS-STR-PG-B1BB	SWS TRAIN 1B DISCH TRAINER B1BB FAILS
		EndState	->CD	Added through Event Tree Add
28	5.350E-9	1.14	TRANS :02-02-09-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.977E-7		SWS-MDP-CF-FRNR	CCF OF SWS NORMALLY RUNNING PUMPS JA/LB/PB/RA
	9.100E-2		SWS-XHE-XM-STBY	OPERATOR FAILS TO START/ALIGN STANDBY PUMPS
		EndState	->CD	Added through Event Tree Add
29	5.040E-9	1.07	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	1.500E-3		RHR-MDP-FS-1B	RHR MDP 1B FAILS TO START
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
30	4.447E-9	0.94	TRANS :02-02-09-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.126E-5		SWS-STR-CF-PG-ALL	CCF OF ALL 4 ERCW STRAINERS
	2.000E-3		SWS-XHE-XL-STR-NORM	

#	Prob/Freq	Total %	Cut Set	Description
		EndState	->CD	Added through Event Tree Add
31	3.577E-9	0.76	TRANS :02-03-09-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	3.577E-7		SWS-TSA-CF-PG-ALL	CCF OF 4-OF-4 ERCW TRAVELING SCREENS
		EndState	->CD	Added through Event Tree Add
32	3.360E-9	0.71	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	1.000E-3		RHR-XHE-XR-HTXB	OPERATOR FAILS TO RESTORE RHR HTX-1B AFTER T & M
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
33	3.360E-9	0.71	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	1.000E-3		RHR-MOV-OO-7421	RWST ISOLATION MOV 74-21 FAILS TO CLOSE
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
34	3.360E-9	0.71	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.000E-3		HPR-MOV-CC-6373	SUMP ISOLATION MOV 63-73 FAILS TO OPEN
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
35	3.360E-9	0.71	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.000E-3		CCW-MOV-CC-70153	FAILURE OF RHR/CCW HEAT EXCHANGER MOV 70-153
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
36	3.019E-9	0.64	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS

#	Prob/Freq	Total %	Cut Set	Description
	1.000E-3		RHR-MOV-OO-7421	RWST ISOLATION MOV 74-21 FAILS TO CLOSE
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
37	3.019E-9	0.64	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	1.000E-3		HPR-MOV-CC-6311	RHR DISCHARGE MOV 63-11 FAILS
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
38	3.019E-9	0.64	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	1.000E-3		HPR-MOV-CC-6373	SUMP ISOLATION MOV 63-73 FAILS TO OPEN
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
39	3.019E-9	0.64	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.000E-3		CCW-MOV-CC-70153	FAILURE OF RHR/CCW HEAT EXCHANGER MOV 70-153
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
40	3.005E-9	0.64	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	8.360E-5		CCW-MDP-CF-TBBSTART	CCF OF THERMAL BARRIER BOOSTER MDPS TO START
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW

#	Prob/Freq	Total %	Cut Set	Description
	2.000E-3		HPR-XHE-XM-RECIRC	OPERATOR FAILS TO START HIGH PRESSURE RECIRC
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
41	2.708E-9	0.58	TRANS :02-02-09-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.371E-5		STB-ACX-CF-RUN	CCF OF AIR HANDLING UNITS 1A-A & 1B-B SHUT. BOARD ROOMS TO R
	1.000E-3		STB-XHE-XL-RECOV	OPERATOR FAILS TO RECOVER LOSS OF SHUTDOWN BOARD ROOM COOLING
		EndState	->CD	Added through Event Tree Add
42	2.572E-9	0.55	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.286E-7		CCW-HTX-CF-PGHXS	CCW HEAT EXCHANGERS FAIL FROM COMMON CAUSE
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
43	2.311E-9	0.49	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.286E-7		CCW-HTX-CF-PGHXS	CCW HEAT EXCHANGERS FAIL FROM COMMON CAUSE
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
44	1.811E-9	0.38	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.099E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	1.200E-1		HPI-XHE-XM-RWSTR	OPERATOR FAILS TO REFILL THE RWST
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	5.000E-3		RHR-HTX-TM-HXB	RHR HEAT EXCHANGER HTX-B UNAVAILABLE DUE TO T & M
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS

#	Prob/Freq	Total %	Cut Set	Description
		EndState	->CD	Added through Event Tree Add
45	1.807E-9	0.38	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	5.379E-4		RHR-MDP-FR-1B	RHR MDP 1B FAILS TO RUN
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
46	1.413E-9	0.3	TRANS :02-02-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.000E-2		OPR-XHE-XM-DEPRCS1	OPERATOR FAILS TO DEPRESSURIZE RCS / SECONDARY SIDE - RAPID
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	3.577E-7		SWS-TSA-CF-PG-ALL	CCF OF 4-OF-4 ERCW TRAVELING SCREENS
		EndState	->CD	Added through Event Tree Add
47	1.310E-9	0.28	TRANS :02-14-09-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	6.000E-3		CCW-MDP-TM-CS	CCW PUMP C-S IS IN TEST OR MAINTENANCE
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	1.200E-4		SWS-MDP-FR-RA	SWS MDP RA FAILS TO RUN
	9.100E-2		SWS-XHE-XM-STBY	OPERATOR FAILS TO START/ALIGN STANDBY PUMPS
		EndState	->CD	Added through Event Tree Add
48	1.310E-9	0.28	TRANS :02-14-09-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	6.000E-3		CCW-MDP-TM-CS	CCW PUMP C-S IS IN TEST OR MAINTENANCE
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	1.200E-4		SWS-MDP-FR-JA	SWS MDP JA FAILS TO RUN
	9.100E-2		SWS-XHE-XM-STBY	OPERATOR FAILS TO START/ALIGN STANDBY PUMPS
		EndState	->CD	Added through Event Tree Add
49	1.310E-9	0.28	TRANS :02-14-09-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	6.000E-3		CCW-MDP-TM-CS	CCW PUMP C-S IS IN TEST OR MAINTENANCE
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	1.200E-4		SWS-TSA-PG-TRN2A	ERCW TRAVELING SCREEN 2A PLUGS
	9.100E-2		SWS-XHE-XM-STBY	OPERATOR FAILS TO START/ALIGN STANDBY PUMPS
		EndState	->CD	Added through Event Tree Add
50	1.310E-9	0.28	TRANS :02-14-09-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	6.000E-3		CCW-MDP-TM-CS	CCW PUMP C-S IS IN TEST OR MAINTENANCE

#	Prob/Freq	Total %	Cut Set	Description
	2.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	1.200E-4		SWS-TSA-PG-TRN1A	ERCW TRAVELING SCREEN 1A PLUGS
	9.100E-2		SWS-XHE-XM-STBY	OPERATOR FAILS TO START/ALIGN STANDBY PUMPS
		EndState	->CD	Added through Event Tree Add

C.3.14 Sequoyah SA4 (Case 6) Cutset Sequence and Report

SA4 (Case 6) Top 5 Dominant Sequences

TRANS 02-02-09-01	/RPS,/OEP,/AFW,/PORV,LOSC,/RCPT,/RSC,/BP1,BP2,/FW,HPI,/SSC1,LPI,/L1CDF
TRANS 02-02-10-01	/RPS,/OEP,/AFW,/PORV,LOSC,/RCPT,/RSD,/BP1,BP2,/FW,HPI,SSC1,/L1-CDF
TRANS 02-02-05-01	/RPS,/OEP,/AFW,/PORV,LOSC,/RCPT,/RSD,/BP1,BP2,/FW,/HPI,SSC,HPR,/L1-CDF
TRANS 02-14-02-01	/RPS,/OEP,/AFW,/PORV,LOSC,RCPT,/HPI-M,/AFW-A,/SSC,LPR,/L1-CDF
TRANS 02-14-09-01	/RPS,/OEP,/AFW,/PORV,LOSC,RCPT,HPI-M,/ACC-M,/AFW-A,/SSC,LPI,/L1-CDF

SA4 (Case 6) Top 50 Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	7.065E-8	14.94	TRANS :02-02-09-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	3.577E-7		SWS-TSA-CF-PG-ALL	CCF OF 4-OF-4 ERCW TRAVELING SCREENS
		EndState	->CD	Added through Event Tree Add
2	2.357E-8	4.98	TRANS :02-02-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	3.336E-1		OPR-XHE-XM-DEPRCS1	OPERATOR FAILS TO DEPRESSURIZE RCS / SECONDARY SIDE - RAPID
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	3.577E-7		SWS-TSA-CF-PG-ALL	CCF OF 4-OF-4 ERCW TRAVELING SCREENS
		EndState	->CD	Added through Event Tree Add
3	1.811E-8	3.83	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	6.000E-3		CCW-MDP-TM-CS	CCW PUMP C-S IS IN TEST OR MAINTENANCE
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS

#	Prob/Freq	Total %	Cut Set	Description
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
4	1.725E-8	3.65	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	9.600E-7		SWS-MOV-OC-6714	FAILURE OF SWS HEADER A DISCHARGE MOV 67-14
		EndState	->CD	Added through Event Tree Add
5	1.725E-8	3.65	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	9.600E-7		SWS-MOV-OC-67365	FAILURE OF SWS HEADER A DISCHARGE MOV 67-365
		EndState	->CD	Added through Event Tree Add
6	1.008E-8	2.13	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	6.000E-3		CCW-MDP-TM-CS	CCW PUMP C-S IS IN TEST OR MAINTENANCE
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
7	9.600E-9	2.03	TRANS :02-14-09-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	9.600E-7		SWS-MOV-OC-6714	FAILURE OF SWS HEADER A DISCHARGE MOV 67-14
		EndState	->CD	Added through Event Tree Add
8	9.600E-9	2.03	TRANS :02-14-09-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	9.600E-7		SWS-MOV-OC-67365	FAILURE OF SWS HEADER A DISCHARGE MOV 67-365
		EndState	->CD	Added through Event Tree Add
9	8.399E-9	1.78	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS

#	Prob/Freq	Total %	Cut Set	Description
	5.000E-3		RHR-HTX-TM-HXB	RHR HEAT EXCHANGER HTX-B UNAVAILABLE DUE TO T & M
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
10	8.225E-9	1.74	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	2.288E-5		CCW-FAN-CF-ALLFR	CCF OF AFW/CCW AREA FAN COOLERS TO RUN
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
11	8.225E-9	1.74	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	2.288E-5		CCW-FAN-CF-ALLFR	CCF OF AFW/CCW AREA FAN COOLERS TO RUN
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
12	6.817E-9	1.44	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	7.586E-7		CCW-MDP-CF-RUN	CCF OF CCW MDPS TO RUN
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
13	6.817E-9	1.44	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	7.586E-7		CCW-MDP-CF-RUN	CCF OF CCW MDPS TO RUN
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY

#	Prob/Freq	Total %	Cut Set	Description
				RUNNING
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
14	6.676E-9	1.41	TRANS :20-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	8.250E-5		AFW-MDP-CF-START	CCFOF AFW MOTOR-DRIVEN PUMPS TO START
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.780E-1		HPI-XHE-XM-FB1	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING (depend)
	2.000E-2		MFW-XHE-XL-ERROR	OPERATOR FAILS TO RESTORE MFW FLOW
		EndState	->CD	Added through Event Tree Add
15	6.419E-9	1.36	TRANS :20-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	8.250E-5		AFW-MDP-CF-START	CCFOF AFW MOTOR-DRIVEN PUMPS TO START
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
	2.000E-2		MFW-TDP-FS-1A	FEEDWATER PUMP 1A FAILS TO START
		EndState	->CD	Added through Event Tree Add
16	6.400E-9	1.35	TRANS :20-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.536E-7		AFW-AOV-CF-DIS	CCF OF SGs DISCHARGE AOVs TO OPEN
	5.780E-1		HPI-XHE-XM-FB1	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING (depend)
	2.000E-2		MFW-XHE-XL-ERROR	OPERATOR FAILS TO RESTORE MFW FLOW
		EndState	->CD	Added through Event Tree Add
17	6.154E-9	1.3	TRANS :20-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.536E-7		AFW-AOV-CF-DIS	CCF OF SGs DISCHARGE AOVs TO OPEN
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
	2.000E-2		MFW-TDP-FS-1A	FEEDWATER PUMP 1A FAILS TO START
		EndState	->CD	Added through Event Tree Add
18	6.038E-9	1.28	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.000E-3		CCW-MDP-FS-CS	CCW PUMP C-S FAILS TO START
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW

#	Prob/Freq	Total %	Cut Set	Description
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
19	6.038E-9	1.28	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	2.000E-3		HPR-XHE-XM-RECIRC	OPERATOR FAILS TO START HIGH PRESSURE RECIRC
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
20	5.986E-9	1.27	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	1.665E-5		CCW-FAN-CF-ALLFS	CCF OF AFW/CCW AREA FAN COOLERS TOSTART
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
21	5.986E-9	1.27	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	1.665E-5		CCW-FAN-CF-ALLFS	CCF OF AFW/CCW AREA FAN COOLERS TOSTART
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
22	5.573E-9	1.18	TRANS :02-02-08-01	

#	Prob/Freq	Total %	Cut Set	Description
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A1AA	SWS TRAIN 1A DISCH STRAINER A1AA FAILS
	1.680E-4		SWS-STR-PG-B1BB	SWS TRAIN 1B DISCH TRAINER B1BB FAILS
		EndState	->CD	Added through Event Tree Add
23	5.350E-9	1.13	TRANS :02-02-09-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.977E-7		SWS-MDP-CF-FRNR	CCF OF SWS NORMALLY RUNNING PUMPS JA/LB/PB/RA
	9.100E-2		SWS-XHE-XM-STBY	OPERATOR FAILS TO START/ALIGN STANDBY PUMPS
		EndState	->CD	Added through Event Tree Add
24	5.040E-9	1.07	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	3.000E-3		RHR-FAN-FS-RHRRMB	FAILURE OF RHR MDP-1B ROOM COOLING FAN TO START
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
25	4.768E-9	1.01	TRANS :20-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	8.250E-5		AFW-MDP-CF-START	CCFOF AFW MOTOR-DRIVEN PUMPS TO START
	5.000E-3		AFW-TDP-TM-1A	AFW TDP UNAVAILABLE DUE TO TEST AND MAINTENANCE
	5.780E-1		HPI-XHE-XM-FB1	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING (depend)
	2.000E-2		MFW-XHE-XL-ERROR	OPERATOR FAILS TO RESTORE MFW FLOW
		EndState	->CD	Added through Event Tree Add
26	4.585E-9	0.97	TRANS :20-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	8.250E-5		AFW-MDP-CF-START	CCFOF AFW MOTOR-DRIVEN PUMPS TO START
	5.000E-3		AFW-TDP-TM-1A	AFW TDP UNAVAILABLE DUE TO TEST AND MAINTENANCE
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
	2.000E-2		MFW-TDP-FS-1A	FEEDWATER PUMP 1A FAILS TO START
		EndState	->CD	Added through Event Tree Add

#	Prob/Freq	Total %	Cut Set	Description
27	4.576E-9	0.97	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	2.288E-5		CCW-FAN-CF-ALLFR	CCF OF AFW/CCW AREA FAN COOLERS TO RUN
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
28	4.576E-9	0.97	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	2.288E-5		CCW-FAN-CF-ALLFR	CCF OF AFW/CCW AREA FAN COOLERS TO RUN
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
29	4.447E-9	0.94	TRANS :02-02-09-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.126E-5		SWS-STR-CF-PG-ALL	CCF OF ALL 4 ERCW STRAINERS
	2.000E-3		SWS-XHE-XL-STR-NORM	
		EndState	->CD	Added through Event Tree Add
30	3.915E-9	0.83	TRANS :20-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	8.250E-5		AFW-MDP-CF-START	CCFOF AFW MOTOR-DRIVEN PUMPS TO START
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN
	5.780E-1		HPI-XHE-XM-FB1	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING (depend)
	2.000E-2		MFW-XHE-XL-ERROR	OPERATOR FAILS TO RESTORE MFW FLOW
		EndState	->CD	Added through Event Tree Add
31	3.793E-9	0.8	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	7.586E-7		CCW-MDP-CF-RUN	CCF OF CCW MDPS TO RUN
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
32	3.793E-9	0.8	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	7.586E-7		CCW-MDP-CF-RUN	CCF OF CCW MDPS TO RUN
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING

#	Prob/Freq	Total %	Cut Set	Description
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
33	3.765E-9	0.8	TRANS :20-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	8.250E-5		AFW-MDP-CF-START	CCFOF AFW MOTOR-DRIVEN PUMPS TO START
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN
	5.558E-1		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
	2.000E-2		MFW-TDP-FS-1A	FEEDWATER PUMP 1A FAILS TO START
		EndState	->CD	Added through Event Tree Add
34	3.577E-9	0.76	TRANS :02-03-09-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	3.577E-7		SWS-TSA-CF-PG-ALL	CCF OF 4-OF-4 ERCW TRAVELING SCREENS
		EndState	->CD	Added through Event Tree Add
35	3.577E-9	0.76	TRANS :02-14-09-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	3.577E-7		SWS-TSA-CF-PG-ALL	CCF OF 4-OF-4 ERCW TRAVELING SCREENS
		EndState	->CD	Added through Event Tree Add
36	3.360E-9	0.71	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	2.000E-3		RHR-FAN-TM-RHRRMB	RHR MDP 1B ROOM FAN UNAVAILABLE DUE TO T & M
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
37	3.360E-9	0.71	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.000E-3		CCW-MDP-FS-CS	CCW PUMP C-S FAILS TO START
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
38	3.331E-9	0.7	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	1.665E-5		CCW-FAN-CF-ALLFS	CCF OF AFW/CCW AREA FAN COOLERS TOSTART
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS

#	Prob/Freq	Total %	Cut Set	Description
		EndState	->CD	Added through Event Tree Add
39	3.331E-9	0.7	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	4.000E-2		AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
	1.665E-5		CCW-FAN-CF-ALLFS	CCF OF AFW/CCW AREA FAN COOLERS TOSTART
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
40	3.203E-9	0.68	TRANS :02-14-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	3.336E-1		OPR-XHE-XM-DEPRCS1	OPERATOR FAILS TO DEPRESSURIZE RCS / SECONDARY SIDE - RAPID
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	9.600E-7		SWS-MOV-OC-6714	FAILURE OF SWS HEADER A DISCHARGE MOV 67-14
		EndState	->CD	Added through Event Tree Add
41	3.203E-9	0.68	TRANS :02-14-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	3.336E-1		OPR-XHE-XM-DEPRCS1	OPERATOR FAILS TO DEPRESSURIZE RCS / SECONDARY SIDE - RAPID
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	9.600E-7		SWS-MOV-OC-67365	FAILURE OF SWS HEADER A DISCHARGE MOV 67-365
		EndState	->CD	Added through Event Tree Add
42	3.019E-9	0.64	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.000E-3		RHR-MOV-OO-7421	RWST ISOLATION MOV 74-21 FAILS TO CLOSE
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
43	3.019E-9	0.64	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	1.000E-3		HPR-MOV-CC-6311	RHR DISCHARGE MOV 63-11 FAILS
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA

#	Prob/Freq	Total %	Cut Set	Description
				FAILS
		EndState	->CD	Added through Event Tree Add
44	3.019E-9	0.64	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	1.000E-3		HPR-MOV-CC-6373	SUMP ISOLATION MOV 63-73 FAILS TO OPEN
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
45	3.019E-9	0.64	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.000E-3		CCW-MOV-CC-70153	FAILURE OF RHR/CCW HEAT EXCHANGER MOV 70-153
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
46	3.005E-9	0.64	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	8.360E-5		CCW-MDP-CF-TBBSTART	CCF OF THERMAL BARRIER BOOSTER MDPS TO START
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	2.000E-3		HPR-XHE-XM-RECIRC	OPERATOR FAILS TO START HIGH PRESSURE RECIRC
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
47	2.708E-9	0.57	TRANS :02-02-09-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.371E-5		STB-ACX-CF-RUN	CCF OF AIR HANDLING UNITS 1A-A & 1B-B SHUT. BOARD ROOMS TO R

#	Prob/Freq	Total %	Cut Set	Description
	1.000E-3		STB-XHE-XL-RECOV	OPERATOR FAILS TO RECOVER LOSS OF SHUTDOWN BOARD ROOM COOLING
		EndState	->CD	Added through Event Tree Add
48	2.520E-9	0.53	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.000E-2		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
	1.500E-3		RHR-MDP-FS-1B	RHR MDP 1B FAILS TO START
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
49	2.311E-9	0.49	TRANS :02-02-05-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.286E-7		CCW-HTX-CF-PGHXS	CCW HEAT EXCHANGERS FAIL FROM COMMON CAUSE
	9.100E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
50	1.859E-9	0.39	TRANS :02-02-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	3.336E-1		OPR-XHE-XM-DEPRCS1	OPERATOR FAILS TO DEPRESSURIZE RCS / SECONDARY SIDE - RAPID
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.680E-4		SWS-STR-PG-A1AA	SWS TRAIN 1A DISCH STRAINER A1AA FAILS
	1.680E-4		SWS-STR-PG-B1BB	SWS TRAIN 1B DISCH TRAINER B1BB FAILS
		EndState	->CD	Added through Event Tree Add

C.3.15 Sequoyah HA3 Cutset Sequence and Report

HA3 (Case 1) Top 5 Dominant Sequences

LOOPGR 17-06-1-01	/RPS,EPS,/AFW-B,/PORV-B,/RSD-B,/BP1,BP2,OPR-04H,DGR-O4H,/DE-OPRGR-10H4,/L1-CDF
LOERCW 04-02-10-01	LOSWS, /RPS, /OEP, /AFW1, /PORV, LOSC1, REC-SWS, /RCPT, /RSD, /BP1, BP2, /FW, HPI, SSC1, /L1-CDF
LOOPGR 17-03-10-1-01	/RPS,EPS,/AFW-B,/PORV-B,/RSD-B,/BP1,/BP2,OPR-04H,DGR-04H,AFW-MAN,SG-DEP-LT1,/DE-OPRGR-10H4,/L1-CDF
LOCCW 04-02-05-01	LOCCW, /RPS, /OEP, /AFW, /PORV, LOSC-C, REC-CCW, /RCPT, /RSD, /BP1, BP2, /FW, /HPI, SSC, HPR, /L1-CDF
LOOPGR 17-06-2-01	/RPS,EPS,/AFW-B,/PORV-B,RSD-B,/BP1,/O1,/OPR-03H,/HPI-LR,HPR-LR,/L1-CDF

HA3 (Case 1) Top 50 Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	1.002E-5	9.57	LOOPGR :17-06-1-01	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	8.051E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	5.543E-3		EPS-DGN-CF-STRT12	CCF OF UNIT 1 & 2 DIESEL GENERATORS TO START
	6.110E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
2	8.928E-6	8.53	LOERCW :04-02-10-01	
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW
	4.110E-3		IE-SWS-STR-CF-PGALL	CCF OF ALL 4 ERCW STRAINERS
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.100E-2		SWS-XHE-XL-NOREC	OPERATOR FAILS TO RECOVER ERCW
		EndState	->CD	Added through Event Tree Add
3	4.072E-6	3.89	LOOPGR :17-06-1-01	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	8.051E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	1.200E-2		EPS-DGN-TM-1B	DIESEL GENERATOR B UNAVAILABLE DUE TO TEST AND MAINTENANCE
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.537E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
4	3.426E-6	3.27	LOOPSC :17-06-1-01	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	7.962E-1		/DE-OPRSC-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	5.543E-3		EPS-DGN-CF-STRT12	CCF OF UNIT 1 & 2 DIESEL GENERATORS TO START

#	Prob/Freq	Total %	Cut Set	Description
	3.779E-1		OEP-XHE-XL-NR01HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (SWITCHYARD)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
5	3.176E-6	3.03	LOOPGR :17-03-10-1-01	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	8.051E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	1.200E-2		EPS-DGN-TM-1B	DIESEL GENERATOR B UNAVAILABLE DUE TO TEST AND MAINTENANCE
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.537E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
6	1.915E-6	1.83	LOOPGR :17-06-1-01	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	8.051E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.537E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	2.340E-1		OEP-XHE-XX-NR04HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (4HR-GR AVAIL)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
7	1.730E-6	1.65	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER

#	Prob/Freq	Total %	Cut Set	Description
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	8.760E-4		IE-CCW-HTX-PG-HX1A1	CCW HEAT EXCHANGER HX 1A-1 PLUGS
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
8	1.730E-6	1.65	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	8.760E-4		IE-CCW-HTX-PG-HX1A2	CCW HEAT EXCHANGER HX 1A-2 PLUGS
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
9	1.724E-6	1.65	LOOPGR :17-06-2-01	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.949E-1		DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	7.110E-1		/DE-OPRGR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	5.543E-3		EPS-DGN-CF-STRT12	CCF OF UNIT 1 & 2 DIESEL GENERATORS TO START
	6.110E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
10	1.697E-6	1.62	LOOPGR :17-06-1-01	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	8.051E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	5.000E-3		EPS-DGN-FS-1B	DIESEL GENERATOR B FAILS TO START
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.537E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS

#	Prob/Freq	Total %	Cut Set	Description
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
11	1.623E-6	1.55	LOERCW :03-02-05-01	
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW
	2.000E-3		HPR-XHE-XM-RECIRC	OPERATOR FAILS TO START HIGH PRESSURE RECIRC
	4.110E-3		IE-SWS-STR-CF-PGALL	CCF OF ALL 4 ERCW STRAINERS
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
12	1.599E-6	1.53	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	8.097E-4		IE-CCW-MDP-CF-FR1ABC	CCF OF CCW MDPs 1A-A, 1B-B, C-S
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
13	1.493E-6	1.43	LOOPGR :17-03-10-1-01	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	8.051E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.537E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	2.340E-1		OEP-XHE-XX-NR04HGR1	CONVOLUTION FACTOR FOR 1FTR-OPR (4HR-GR AVAIL)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
14	1.467E-6	1.4	LOOPGR :17-03-10-1-01	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)

#	Prob/Freq	Total %	Cut Set	Description
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	8.051E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	5.543E-3		EPS-DGN-CF-STRT12	CCF OF UNIT 1 & 2 DIESEL GENERATORS TO START
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.537E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
15	1.443E-6	1.38	LOOPWR :17-06-1-01	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	4.163E-1		/DE-OPRWR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	3.824E-1		OEP-XHE-XL-NR04HWR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (WEATHER-RELATED)
	5.280E-1		OEP-XHE-XX-NR04HWR1	CONVOLUTION FACTOR FOR 1FTR-OPR (4HR-WR AVAIL)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
16	1.443E-6	1.38	LOOPWR :17-06-1-01	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	4.163E-1		/DE-OPRWR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	5.543E-3		EPS-DGN-CF-STRT12	CCF OF UNIT 1 & 2 DIESEL GENERATORS TO START
	6.555E-1		OEP-XHE-XL-NR01HWR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (WEATHER-RELATED)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add

#	Prob/Freq	Total %	Cut Set	Description
17	1.375E-6	1.31	LOOPWR :17-06-3-01	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	5.837E-1		DE-OPRWR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	6.798E-1		DE-OPRWR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	3.824E-1		OEP-XHE-XL-NR04HWR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (WEATHER-RELATED)
	5.280E-1		OEP-XHE-XX-NR04HWR1	CONVOLUTION FACTOR FOR 1FTR-OPR (4HR-WR AVAIL)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
18	1.375E-6	1.31	LOOPWR :17-06-3-01	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	5.837E-1		DE-OPRWR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	6.798E-1		DE-OPRWR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	5.543E-3		EPS-DGN-CF-STRT12	CCF OF UNIT 1 & 2 DIESEL GENERATORS TO START
	6.555E-1		OEP-XHE-XL-NR01HWR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (WEATHER-RELATED)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
19	1.360E-6	1.3	LOOPWR :17-06-1-01	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	4.163E-1		/DE-OPRWR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	1.200E-2		EPS-DGN-TM-1B	DIESEL GENERATOR B UNAVAILABLE DUE TO TEST AND MAINTENANCE
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	3.824E-1		OEP-XHE-XL-NR04HWR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (WEATHER-RELATED)

#	Prob/Freq	Total %	Cut Set	Description
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
20	1.323E-6	1.26	LOOPGR :17-03-10-1-01	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	8.051E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	5.000E-3		EPS-DGN-FS-1B	DIESEL GENERATOR B FAILS TO START
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.537E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
21	1.296E-6	1.24	LOOPWR :17-06-3-01	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	5.837E-1		DE-OPRWR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	6.798E-1		DE-OPRWR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	1.200E-2		EPS-DGN-TM-1B	DIESEL GENERATOR B UNAVAILABLE DUE TO TEST AND MAINTENANCE
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	3.824E-1		OEP-XHE-XL-NR04HWR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (WEATHER-RELATED)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
22	1.200E-6	1.15	VSLOCA :03-01	
	2.000E-3		IE-VSLOCA	VERY SMALL LOCA
	3.000E-1		HPI-XHE-XM-RWSTR1	OPERATOR FAILS TO REFILL THE RWST
	2.000E-3		HPR-XHE-XM-RECIRC	OPERATOR FAILS TO START HIGH PRESSURE RECIRC
		EndState	->CD	Added through Event Tree Add

#	Prob/Freq	Total %	Cut Set	Description
23	1.200E-6	1.15	SLOCA :05-01	
	6.000E-4		IE-SLOCA	SMALL LOCA
	2.000E-3		HPR-XHE-XM-RECIRC	OPERATOR FAILS TO START HIGH PRESSURE RECIRC
		EndState	->CD	Added through Event Tree Add
24	1.151E-6	1.1	LOOPSC :17-06-1-01	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	7.962E-1		/DE-OPRSC-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	1.200E-2		EPS-DGN-TM-1B	DIESEL GENERATOR B UNAVAILABLE DUE TO TEST AND MAINTENANCE
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	7.861E-2		OEP-XHE-XL-NR04HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (SWITCHYARD)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
25	1.125E-6	1.07	LOOPWR :17-03-10-1-01	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	4.163E-1		/DE-OPRWR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	3.824E-1		OEP-XHE-XL-NR04HWR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (WEATHER-RELATED)
	5.280E-1		OEP-XHE-XX-NR04HWR1	CONVOLUTION FACTOR FOR 1FTR-OPR (4HR-WR AVAIL)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
26	1.105E-6	1.06	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	5.594E-4		IE-CCW-MDP-CF-FR1A1B	CCF OF CCW MDPs 1A-A, 1B-B

#	Prob/Freq	Total %	Cut Set	Description
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
27	1.087E-6	1.04	LOERCW :04-02-10-01	
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW
	5.003E-4		IE-SWS-TSA-CF-PGALL	ERCW TRAVELING SCREEN PLUGS (INITIATING EVENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.100E-2		SWS-XHE-XL-NOREC	OPERATOR FAILS TO RECOVER ERCW
		EndState	->CD	Added through Event Tree Add
28	1.073E-6	1.02	LOOPWR :17-03-10-3-01	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	5.837E-1		DE-OPRWR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	6.798E-1		DE-OPRWR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	3.824E-1		OEP-XHE-XL-NR04HWR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (WEATHER-RELATED)
	5.280E-1		OEP-XHE-XX-NR04HWR1	CONVOLUTION FACTOR FOR 1FTR-OPR (4HR-WR AVAIL)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
29	1.061E-6	1.01	LOOPWR :17-03-10-1-01	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	4.163E-1		/DE-OPRWR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	1.200E-2		EPS-DGN-TM-1B	DIESEL GENERATOR B UNAVAILABLE DUE TO TEST AND MAINTENANCE

#	Prob/Freq	Total %	Cut Set	Description
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	3.824E-1		OEP-XHE-XL-NR04HWR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (WEATHER-RELATED)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
30	1.011E-6	0.97	LOOPWR :17-03-10-3-01	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	5.837E-1		DE-OPRWR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	6.798E-1		DE-OPRWR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	1.200E-2		EPS-DGN-TM-1B	DIESEL GENERATOR B UNAVAILABLE DUE TO TEST AND MAINTENANCE
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	3.824E-1		OEP-XHE-XL-NR04HWR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (WEATHER-RELATED)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
31	8.979E-7	0.86	LOOPSC :17-03-10-1-01	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	7.962E-1		/DE-OPRSC-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	1.200E-2		EPS-DGN-TM-1B	DIESEL GENERATOR B UNAVAILABLE DUE TO TEST AND MAINTENANCE
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	7.861E-2		OEP-XHE-XL-NR04HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (SWITCHYARD)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)

#	Prob/Freq	Total %	Cut Set	Description
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
32	8.760E-7	0.84	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	8.760E-4		IE-CCW-HTX-PG-HX1A1	CCW HEAT EXCHANGER HX 1A-1 PLUGS
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
33	8.760E-7	0.84	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	8.760E-4		IE-CCW-HTX-PG-HX1A2	CCW HEAT EXCHANGER HX 1A-2 PLUGS
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
34	8.650E-7	0.83	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.000E-1		CCW-CFG-AP-P1BBRUN	CCW PUMP 1B-B IS RUNNING, 1A-A IS IN STANDBY
	1.000E+0		CCW-XHE-XL-1BB	OPERATOR FAILS TO RECOVER CCW PUMP 1B-B
	2.000E-2		CCW-XHE-XM-P1AA	OPERATOR FAILS TO ALIGN PUMP 1A-A
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	4.380E-2		IE-CCW-MDP-FR-1BB	CCW PUMP 1B-B FAILS TO RUN (INITIATING EVENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
35	8.650E-7	0.83	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.000E-1		CCW-CFG-AP-P1AARUN	CCW PUMP 1A-A IS RUNNING, 1B-B IS IN STANDBY
	1.000E+0		CCW-XHE-XL-1AA	OPERATOR FAILS TO RECOVER CCW PUMP 1A-A
	2.000E-2		CCW-XHE-XM-P1BB	OPERATOR FAILS TO ALIGN PUMP 1B-B
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	4.380E-2		IE-CCW-MDP-FR-1AA	CCW PUMP 1A-A FAILS TO RUN (INITIATING EVENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS

#	Prob/Freq	Total %	Cut Set	Description
		EndState	->CD	Added through Event Tree Add
36	8.483E-7	0.81	LOOPGR :17-06-1-01	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.500E-3		ACP-CRB-CC-1726	OFFSITE POWER SUPPLY BREAKER 1726 FAILS TO OPEN
	8.051E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.537E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
37	8.097E-7	0.77	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	8.097E-4		IE-CCW-MDP-CF-FR1ABC	CCF OF CCW MDPs 1A-A, 1B-B, C-S
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
38	7.008E-7	0.67	LOOPGR :17-06-2-01	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.949E-1		DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	7.110E-1		/DE-OPRGR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	1.200E-2		EPS-DGN-TM-1B	DIESEL GENERATOR B UNAVAILABLE DUE TO TEST AND MAINTENANCE
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.537E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
39	7.007E-7	0.67	LOOPGR :17-06-3-01	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.949E-1		DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.890E-1		DE-OPRGR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs

#	Prob/Freq	Total %	Cut Set	Description
	5.543E-3		EPS-DGN-CF-STRT12	CCF OF UNIT 1 & 2 DIESEL GENERATORS TO START
	6.110E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
40	6.920E-7	0.66	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	3.504E-4		IE-SWS-MOV-OC-6714	FAILURE OF SWS HEADER B DISCHARGE MOV 67-14
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
41	6.920E-7	0.66	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	3.504E-4		IE-SWS-MOV-OC-67365	FAILURE OF SWS HEADER B DISCHARGE MOV 67-365
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
42	6.617E-7	0.63	LOOPGR :17-03-10-1-01	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	2.500E-3		ACP-CRB-CC-1726	OFFSITE POWER SUPPLY BREAKER 1726 FAILS TO OPEN
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	8.051E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.537E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)

#	Prob/Freq	Total %	Cut Set	Description
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
43	6.479E-7	0.62	LOOPWR :17-06-2-01	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	5.837E-1		DE-OPRWR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	3.202E-1		/DE-OPRWR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	3.824E-1		OEP-XHE-XL-NR04HWR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (WEATHER-RELATED)
	5.280E-1		OEP-XHE-XX-NR04HWR1	CONVOLUTION FACTOR FOR 1FTR-OPR (4HR-WR AVAIL)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
44	6.479E-7	0.62	LOOPWR :17-06-2-01	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	5.837E-1		DE-OPRWR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	3.202E-1		/DE-OPRWR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	5.543E-3		EPS-DGN-CF-STRT12	CCF OF UNIT 1 & 2 DIESEL GENERATORS TO START
	6.555E-1		OEP-XHE-XL-NR01HWR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (WEATHER-RELATED)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
45	6.107E-7	0.58	LOOPWR :17-06-2-01	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	5.837E-1		DE-OPRWR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	3.202E-1		/DE-OPRWR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs

#	Prob/Freq	Total %	Cut Set	Description
	1.200E-2		EPS-DGN-TM-1B	DIESEL GENERATOR B UNAVAILABLE DUE TO TEST AND MAINTENANCE
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	3.824E-1		OEP-XHE-XL-NR04HWR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (WEATHER-RELATED)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
46	5.956E-7	0.57	LOOPSC :17-06-2-01	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	2.038E-1		DE-OPRSC-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	6.792E-1		/DE-OPRSC-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	5.543E-3		EPS-DGN-CF-STRT12	CCF OF UNIT 1 & 2 DIESEL GENERATORS TO START
	3.779E-1		OEP-XHE-XL-NR01HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (SWITCHYARD)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
47	5.666E-7	0.54	LOOPWR :17-06-1-01	
	4.830E-3		IE-LOOPWR	LOSS OF OFFSITE POWER INITIATOR (WEATHER-RELATED)
	4.163E-1		/DE-OPRWR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	5.000E-3		EPS-DGN-FS-1B	DIESEL GENERATOR B FAILS TO START
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	3.824E-1		OEP-XHE-XL-NR04HWR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (WEATHER-RELATED)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
48	5.594E-7	0.53	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.594E-4		IE-CCW-MDP-CF-FR1A1B	CCF OF CCW MDPs 1A-A, 1B-B
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add

#	Prob/Freq	Total %	Cut Set	Description
49	5.552E-7	0.53	LOOPSC :17-06-1-01	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	7.962E-1		/DE-OPRSC-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	7.861E-2		OEP-XHE-XL-NR04HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (SWITCHYARD)
	2.400E-1		OEP-XHE-XX-NR04HSC1	CONVOLUTION FACTOR FOR 1FTR-OPR (4HR-SC AVAIL)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
50	5.466E-7	0.52	LOOPGR :17-03-10-2-01	
	1.860E-2		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	1.949E-1		DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	7.110E-1		/DE-OPRGR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	1.200E-2		EPS-DGN-TM-1B	DIESEL GENERATOR B UNAVAILABLE DUE TO TEST AND MAINTENANCE
	7.462E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.537E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add

C.3.16 Sequoyah HA3 (Case 2) Cutset Sequence and Report

HA3 (Case 2) Top 5 Dominant Sequences

LOERCW 04-02-10-01	LOSWS, /RPS, /OEP, /AFW1, /PORV, LOSC1, REC-SWS, /RCPT, /RSD, /BP1, BP2, /FW, HPI, SSC1, /L1-CDF
LOCCW 04-02-05-01	LOCCW, /RPS, /OEP, /AFW, /PORV, LOSC-C, REC-CCW, /RCPT, /RSD, /BP1, BP2, /FW, /HPI, SSC, HPR, /L1-CDF
LOERCW 03-02-05-01	/RPS,/OEP,/AFW1,/PORV,LOSC1,/REC-SWS,/RCPT,/RSD,/BP1,BP2,/FW,/HPI,SSC,HPR,/L1-CDF
VSLOCA 03-01	/RPS,/FW,/HPI-CHGINJ,HPR,RFL1,/L1-CDF
SLOCA 05-01	/RPS,/FW,/HPI,SSC,HPR,/L1-CDF

HA3 (Case 2) Top 50 Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	8.928E-6	20.27	LOERCW :04-02-10-01	
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW
	4.110E-3		IE-SWS-STR-CF-PGALL	CCF OF ALL 4 ERCW STRAINERS
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.100E-2		SWS-XHE-XL-NOREC	OPERATOR FAILS TO RECOVER ERCW
		EndState	->CD	Added through Event Tree Add
2	1.730E-6	3.93	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	8.760E-4		IE-CCW-HTX-PG-HX1A1	CCW HEAT EXCHANGER HX 1A-1 PLUGS
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
3	1.730E-6	3.93	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	8.760E-4		IE-CCW-HTX-PG-HX1A2	CCW HEAT EXCHANGER HX 1A-2 PLUGS
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
4	1.623E-6	3.68	LOERCW :03-02-05-01	
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW

#	Prob/Freq	Total %	Cut Set	Description
	2.000E-3		HPR-XHE-XM-RECIRC	OPERATOR FAILS TO START HIGH PRESSURE RECIRC
	4.110E-3		IE-SWS-STR-CF-PGALL	CCF OF ALL 4 ERCW STRAINERS
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
5	1.599E-6	3.63	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	8.097E-4		IE-CCW-MDP-CF-FR1ABC	CCF OF CCW MDPs 1A-A, 1B-B, C-S
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
6	1.200E-6	2.72	VSLOCA :03-01	
	2.000E-3		IE-VSLOCA	VERY SMALL LOCA
	3.000E-1		HPI-XHE-XM-RWSTR1	OPERATOR FAILS TO REFILL THE RWST
	2.000E-3		HPR-XHE-XM-RECIRC	OPERATOR FAILS TO START HIGH PRESSURE RECIRC
		EndState	->CD	Added through Event Tree Add
7	1.200E-6	2.72	SLOCA :05-01	
	6.000E-4		IE-SLOCA	SMALL LOCA
	2.000E-3		HPR-XHE-XM-RECIRC	OPERATOR FAILS TO START HIGH PRESSURE RECIRC
		EndState	->CD	Added through Event Tree Add
8	1.175E-6	2.67	LOOPSC :17-06-1-01	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	9.840E-1		/DE-OPRSC-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
9	1.105E-6	2.51	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	5.594E-4		IE-CCW-MDP-CF-FR1A1B	CCF OF CCW MDPs 1A-A, 1B-B

#	Prob/Freq	Total %	Cut Set	Description
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
10	1.087E-6	2.47	LOERCW :04-02-10-01	
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW
	5.003E-4		IE-SWS-TSA-CF-PGALL	ERCW TRAVELING SCREEN PLUGS (INITIATING EVENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.100E-2		SWS-XHE-XL-NOREC	OPERATOR FAILS TO RECOVER ERCW
		EndState	->CD	Added through Event Tree Add
11	9.166E-7	2.08	LOOPSC :17-03-10-1-01	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	9.840E-1		/DE-OPRSC-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
12	8.760E-7	1.99	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	8.760E-4		IE-CCW-HTX-PG-HX1A1	CCW HEAT EXCHANGER HX 1A-1 PLUGS
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
13	8.760E-7	1.99	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	8.760E-4		IE-CCW-HTX-PG-HX1A2	CCW HEAT EXCHANGER HX 1A-2 PLUGS
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
14	8.650E-7	1.96	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.000E-1		CCW-CFG-AP-P1BBRUN	CCW PUMP 1B-B IS RUNNING, 1A-A IS IN STANDBY

#	Prob/Freq	Total %	Cut Set	Description
	1.000E+0		CCW-XHE-XL-1BB	OPERATOR FAILS TO RECOVER CCW PUMP 1B-B
	2.000E-2		CCW-XHE-XM-P1AA	OPERATOR FAILS TO ALIGN PUMP 1A-A
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	4.380E-2		IE-CCW-MDP-FR-1BB	CCW PUMP 1B-B FAILS TO RUN (INITIATING EVENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
15	8.650E-7	1.96	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.000E-1		CCW-CFG-AP-P1AARUN	CCW PUMP 1A-A IS RUNNING, 1B-B IS IN STANDBY
	1.000E+0		CCW-XHE-XL-1AA	OPERATOR FAILS TO RECOVER CCW PUMP 1A-A
	2.000E-2		CCW-XHE-XM-P1BB	OPERATOR FAILS TO ALIGN PUMP 1B-B
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	4.380E-2		IE-CCW-MDP-FR-1AA	CCW PUMP 1A-A FAILS TO RUN (INITIATING EVENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
16	8.097E-7	1.84	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	8.097E-4		IE-CCW-MDP-CF-FR1ABC	CCF OF CCW MDPs 1A-A, 1B-B, C-S
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
17	7.554E-7	1.71	LOOPSC :17-06-1-01	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	9.840E-1		/DE-OPRSC-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	3.738E-4		EPS-DGN-CF-RUN1	CCF OF UNIT 1 DIESEL GENERATORS TO RUN
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
18	6.920E-7	1.57	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER

#	Prob/Freq	Total %	Cut Set	Description
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	3.504E-4		IE-SWS-MOV-OC-6714	FAILURE OF SWS HEADER B DISCHARGE MOV 67-14
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
19	6.920E-7	1.57	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	3.504E-4		IE-SWS-MOV-OC-67365	FAILURE OF SWS HEADER B DISCHARGE MOV 67-365
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
20	5.892E-7	1.34	LOOPSC :17-03-10-1-01	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	9.840E-1		/DE-OPRSC-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	3.738E-4		EPS-DGN-CF-RUN1	CCF OF UNIT 1 DIESEL GENERATORS TO RUN
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
21	5.848E-7	1.33	LOOPSC :17-06-1-01	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	9.840E-1		/DE-OPRSC-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	1.200E-2		EPS-DGN-TM-1B	DIESEL GENERATOR B UNAVAILABLE DUE TO TEST AND MAINTENANCE
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS

#	Prob/Freq	Total %	Cut Set	Description
		EndState	->CD	Added through Event Tree Add
22	5.848E-7	1.33	LOOPSC :17-06-1-01	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	9.840E-1		/DE-OPRSC-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
	1.200E-2		EPS-DGN-TM-1A	DIESEL GENERATOR A UNAVAILABLE DUE TO TEST AND MAINTENANCE
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
23	5.594E-7	1.27	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.594E-4		IE-CCW-MDP-CF-FR1A1B	CCF OF CCW MDPs 1A-A, 1B-B
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
24	4.837E-7	1.1	LOOPSC :17-06-1-01	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	9.840E-1		/DE-OPRSC-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.393E-4		EPS-DGN-CF-RUN12	CCF OF UNIT 1 & 2 DIESEL GENERATORS TO RUN
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
25	4.562E-7	1.04	LOOPSC :17-03-10-1-01	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	9.840E-1		/DE-OPRSC-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	1.200E-2		EPS-DGN-TM-1B	DIESEL GENERATOR B UNAVAILABLE DUE TO TEST AND MAINTENANCE
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add

#	Prob/Freq	Total %	Cut Set	Description
26	4.562E-7	1.04	LOOPSC :17-03-10-1-01	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	9.840E-1		/DE-OPRSC-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
	1.200E-2		EPS-DGN-TM-1A	DIESEL GENERATOR A UNAVAILABLE DUE TO TEST AND MAINTENANCE
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
27	4.521E-7	1.03	LOERCW :04-03-10-01	
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW
	4.110E-3		IE-SWS-STR-CF-PGALL	CCF OF ALL 4 ERCW STRAINERS
	1.250E-2		RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
	1.100E-2		SWS-XHE-XL-NOREC	OPERATOR FAILS TO RECOVER ERCW
		EndState	->CD	Added through Event Tree Add
28	4.380E-7	0.99	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.000E-1		CCW-CFG-AP-P1AARUN	CCW PUMP 1A-A IS RUNNING, 1B-B IS IN STANDBY
	1.000E+0		CCW-XHE-XL-1AA	OPERATOR FAILS TO RECOVER CCW PUMP 1A-A
	2.000E-2		CCW-XHE-XM-P1BB	OPERATOR FAILS TO ALIGN PUMP 1B-B
	4.380E-2		IE-CCW-MDP-FR-1AA	CCW PUMP 1A-A FAILS TO RUN (INITIATING EVENT)
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
29	4.380E-7	0.99	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.000E-1		CCW-CFG-AP-P1BBRUN	CCW PUMP 1B-B IS RUNNING, 1A-A IS IN STANDBY
	1.000E+0		CCW-XHE-XL-1BB	OPERATOR FAILS TO RECOVER CCW PUMP 1B-B
	2.000E-2		CCW-XHE-XM-P1AA	OPERATOR FAILS TO ALIGN PUMP 1A-A
	4.380E-2		IE-CCW-MDP-FR-1BB	CCW PUMP 1B-B FAILS TO RUN (INITIATING EVENT)
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
30	3.773E-7	0.86	LOOPSC :17-03-10-1-01	

#	Prob/Freq	Total %	Cut Set	Description
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	9.840E-1		/DE-OPRSC-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.393E-4		EPS-DGN-CF-RUN12	CCF OF UNIT 1 & 2 DIESEL GENERATORS TO RUN
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
31	3.504E-7	0.8	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	3.504E-4		IE-SWS-MOV-OC-67365	FAILURE OF SWS HEADER B DISCHARGE MOV 67-365
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
32	3.504E-7	0.8	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	3.504E-4		IE-SWS-MOV-OC-6714	FAILURE OF SWS HEADER B DISCHARGE MOV 67-14
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
33	2.595E-7	0.59	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.000E-1		CCW-CFG-AP-P1AARUN	CCW PUMP 1A-A IS RUNNING, 1B-B IS IN STANDBY
	6.000E-3		CCW-MDP-TM-1BB	CCW PUMP 1B-B UNAVAILABLE DUE TO TEST OR MAINTENANCE
	1.000E+0		CCW-XHE-XL-1AA	OPERATOR FAILS TO RECOVER CCW PUMP 1A-A
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	4.380E-2		IE-CCW-MDP-FR-1AA	CCW PUMP 1A-A FAILS TO RUN (INITIATING EVENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
34	2.595E-7	0.59	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.000E-1		CCW-CFG-AP-P1BBRUN	CCW PUMP 1B-B IS RUNNING, 1A-A IS IN STANDBY

#	Prob/Freq	Total %	Cut Set	Description
	6.000E-3		CCW-MDP-TM-1AA	CCW PUMP 1A-A UNAVAILABLE DUE TO TEST AND MAINTENANCE
	1.000E+0		CCW-XHE-XL-1BB	OPERATOR FAILS TO RECOVER CCW PUMP 1B-B
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	4.380E-2		IE-CCW-MDP-FR-1BB	CCW PUMP 1B-B FAILS TO RUN (INITIATING EVENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
35	2.437E-7	0.55	LOOPSC :17-06-1-01	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	9.840E-1		/DE-OPRSC-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
	5.000E-3		EPS-DGN-FS-1A	DIESEL GENERATOR A FAILS TO START
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
36	2.437E-7	0.55	LOOPSC :17-06-1-01	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	9.840E-1		/DE-OPRSC-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	5.000E-3		EPS-DGN-FS-1B	DIESEL GENERATOR B FAILS TO START
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
37	2.357E-7	0.53	LOOPPC :17-06-1-01	
	2.070E-3		IE-LOOPPC	LOSS OF OFFSITE POWER INITIATOR (PLANT-CENTERED)
	9.913E-1		/DE-OPRPC-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add

#	Prob/Freq	Total %	Cut Set	Description
38	2.092E-7	0.47	ISL-RHR :3-01	
	2.092E-6		IE-ISL-RHR	ISLOCA IE 2-MOV RHR interface
	1.000E+0		ISL-PSF-RP-RHR	RHR letdown pipe ruptures
	1.000E-1		ZV-ISL-REC-RHR	ISLOCA RUPTURE IS NOT RECOVERABLE
		EndState	->CD	Added through Event Tree Add
39	1.976E-7	0.45	LOERCW :03-02-05-01	
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW
	2.000E-3		HPR-XHE-XM-RECIRC	OPERATOR FAILS TO START HIGH PRESSURE RECIRC
	5.003E-4		IE-SWS-TSA-CF-PGALL	ERCW TRAVELING SCREEN PLUGS (INITIATING EVENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
40	1.901E-7	0.43	LOOPSC :17-03-10-1-01	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	9.840E-1		/DE-OPRSC-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	5.000E-3		EPS-DGN-FS-1B	DIESEL GENERATOR B FAILS TO START
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
41	1.901E-7	0.43	LOOPSC :17-03-10-1-01	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	9.840E-1		/DE-OPRSC-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
	5.000E-3		EPS-DGN-FS-1A	DIESEL GENERATOR A FAILS TO START
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add

#	Prob/Freq	Total %	Cut Set	Description
42	1.838E-7	0.42	LOOPPC :17-03-10-1-01	
	2.070E-3		IE-LOOPPC	LOSS OF OFFSITE POWER INITIATOR (PLANT-CENTERED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	9.913E-1		/DE-OPRPC-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
43	1.515E-7	0.34	LOOPPC :17-06-1-01	
	2.070E-3		IE-LOOPPC	LOSS OF OFFSITE POWER INITIATOR (PLANT-CENTERED)
	9.913E-1		/DE-OPRPC-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	3.738E-4		EPS-DGN-CF-RUN1	CCF OF UNIT 1 DIESEL GENERATORS TO RUN
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
44	1.314E-7	0.3	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.000E-1		CCW-CFG-AP-P1AARUN	CCW PUMP 1A-A IS RUNNING, 1B-B IS IN STANDBY
	6.000E-3		CCW-MDP-TM-1BB	CCW PUMP 1B-B UNAVAILABLE DUE TO TEST OR MAINTENANCE
	1.000E+0		CCW-XHE-XL-1AA	OPERATOR FAILS TO RECOVER CCW PUMP 1A-A
	4.380E-2		IE-CCW-MDP-FR-1AA	CCW PUMP 1A-A FAILS TO RUN (INITIATING EVENT)
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
45	1.314E-7	0.3	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.000E-1		CCW-CFG-AP-P1BBRUN	CCW PUMP 1B-B IS RUNNING, 1A-A IS IN STANDBY
	6.000E-3		CCW-MDP-TM-1AA	CCW PUMP 1A-A UNAVAILABLE DUE TO TEST AND MAINTENANCE
	1.000E+0		CCW-XHE-XL-1BB	OPERATOR FAILS TO RECOVER CCW PUMP 1B-B
	4.380E-2		IE-CCW-MDP-FR-1BB	CCW PUMP 1B-B FAILS TO RUN (INITIATING EVENT)

#	Prob/Freq	Total %	Cut Set	Description
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
46	1.218E-7	0.28	LOOPSC :17-06-1-01	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	2.500E-3		ACP-CRB-CC-1718	OFFSITE POWER SUPPLY BREAKER 1718 FAILS TO OPEN
	9.840E-1		/DE-OPRSC-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
47	1.218E-7	0.28	LOOPSC :17-06-1-01	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	2.500E-3		ACP-CRB-CC-1726	OFFSITE POWER SUPPLY BREAKER 1726 FAILS TO OPEN
	9.840E-1		/DE-OPRSC-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
48	1.213E-7	0.28	LOOPSC :17-06-1-01	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	9.840E-1		/DE-OPRSC-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	5.000E-3		EPS-DGN-FS-1A	DIESEL GENERATOR A FAILS TO START
	1.200E-2		EPS-DGN-TM-1B	DIESEL GENERATOR B UNAVAILABLE DUE TO TEST AND MAINTENANCE
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
49	1.213E-7	0.28	LOOPSC :17-06-1-01	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	9.840E-1		/DE-OPRSC-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	5.000E-3		EPS-DGN-FS-1B	DIESEL GENERATOR B FAILS TO START

#	Prob/Freq	Total %	Cut Set	Description
	1.200E-2		EPS-DGN-TM-1A	DIESEL GENERATOR A UNAVAILABLE DUE TO TEST AND MAINTENANCE
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
50	1.182E-7	0.27	LOOPPC :17-03-10-1-01	
	2.070E-3		IE-LOOPPC	LOSS OF OFFSITE POWER INITIATOR (PLANT-CENTERED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	9.913E-1		/DE-OPRPC-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	3.738E-4		EPS-DGN-CF-RUN1	CCF OF UNIT 1 DIESEL GENERATORS TO RUN
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add

C.3.17 Sequoyah HA3 (Case 3) Cutset Sequence and Report

HA3 Top 5 Dominant Sequences

LOERCW 15-01	/RPS,/OEP,AFW1,/REC-SWS,/HPI03,BLEED,/L1-CDF
LOERCW 18-01	/RPS,/OEP,AFW1,RCS-SWS,/L1-CDF
LOERCW 14-01	/RPS,/OEP,AFW1,/REC-SWS,/HPI03,/BLEED,SSCR,HP03,/L1-CDF
LOOPSC 17-45-2-01	/RPS,EPS,AFW-B,OP-01H,DGR-01H,DE-OPRSC-02H1,/DE-OPRSC-09H2,/L1-CDF
LODCII 20-1	/RPS,/OEP,AFW,MFW,/HPI,BLEED,/L1-CDF

HA3 Top 50 Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	8.219E-5	27.7	LOERCW :15-01	
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW
	2.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
	4.110E-3		IE-SWS-STR-CF-PGALL	CCF OF ALL 4 ERCW STRAINERS
		EndState	->CD	Added through Event Tree Add
2	4.521E-5	15.24	LOERCW :18-01	
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW
	4.110E-3		IE-SWS-STR-CF-PGALL	CCF OF ALL 4 ERCW STRAINERS
	1.100E-2		SWS-XHE-XL-NOREC	OPERATOR FAILS TO RECOVER ERCW
		EndState	->CD	Added through Event Tree Add
3	3.288E-5	11.08	LOERCW :15-01	

#	Prob/Freq	Total %	Cut Set	Description
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW
	4.110E-3		IE-SWS-STR-CF-PGALL	CCF OF ALL 4 ERCW STRAINERS
	8.000E-3		PPR-SRV-CC-340A	PORV PCV-68-340A FAILS TO OPEN ON DEMAND
		EndState	->CD	Added through Event Tree Add
4	3.288E-5	11.08	LOERCW :15-01	
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW
	4.110E-3		IE-SWS-STR-CF-PGALL	CCF OF ALL 4 ERCW STRAINERS
	8.000E-3		PPR-SRV-CC-334	PORV PCV-68-334 FAILS TO OPEN ON DEMAND
		EndState	->CD	Added through Event Tree Add
5	1.001E-5	3.37	LOERCW :15-01	
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW
	2.000E-2		HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
	5.003E-4		IE-SWS-TSA-CF-PGALL	ERCW TRAVELING SCREEN PLUGS (INITIATING EVENT)
		EndState	->CD	Added through Event Tree Add
6	8.219E-6	2.77	LOERCW :14-01	
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW
	2.000E-3		HPR-XHE-XM-RECIRC	OPERATOR FAILS TO START HIGH PRESSURE RECIRC
	4.110E-3		IE-SWS-STR-CF-PGALL	CCF OF ALL 4 ERCW STRAINERS
		EndState	->CD	Added through Event Tree Add
7	5.928E-6	2	LOOPSC :17-45-2-01	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	1.000E+0		DE-OPRSC-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Switchgear)
	9.803E-1		/DE-OPRSC-09H2	DE for fail to recover OSP at 9 hrs, given fail to recover in first 2 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
		EndState	->CD	Added through Event Tree Add
8	5.503E-6	1.85	LOERCW :18-01	
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW
	5.003E-4		IE-SWS-TSA-CF-PGALL	ERCW TRAVELING SCREEN PLUGS (INITIATING EVENT)
	1.100E-2		SWS-XHE-XL-NOREC	OPERATOR FAILS TO RECOVER ERCW
		EndState	->CD	Added through Event Tree Add
9	4.002E-6	1.35	LOERCW :15-01	
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW
	5.003E-4		IE-SWS-TSA-CF-PGALL	ERCW TRAVELING SCREEN PLUGS (INITIATING EVENT)
	8.000E-3		PPR-SRV-CC-340A	PORV PCV-68-340A FAILS TO OPEN ON DEMAND
		EndState	->CD	Added through Event Tree Add
10	4.002E-6	1.35	LOERCW :15-01	
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW

#	Prob/Freq	Total %	Cut Set	Description
	5.003E-4		IE-SWS-TSA-CF-PGALL	ERCW TRAVELING SCREEN PLUGS (INITIATING EVENT)
	8.000E-3		PPR-SRV-CC-334	PORV PCV-68-334 FAILS TO OPEN ON DEMAND
		EndState	->CD	Added through Event Tree Add
11	3.811E-6	1.28	LOOPSC :17-45-2-01	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	1.000E+0		DE-OPRSC-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Switchgear)
	9.803E-1		/DE-OPRSC-09H2	DE for fail to recover OSP at 9 hrs, given fail to recover in first 2 hrs
	3.738E-4		EPS-DGN-CF-RUN1	CCF OF UNIT 1 DIESEL GENERATORS TO RUN
		EndState	->CD	Added through Event Tree Add
12	2.950E-6	0.99	LOOPSC :17-45-2-01	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	1.000E+0		DE-OPRSC-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Switchgear)
	9.803E-1		/DE-OPRSC-09H2	DE for fail to recover OSP at 9 hrs, given fail to recover in first 2 hrs
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
	1.200E-2		EPS-DGN-TM-1A	DIESEL GENERATOR A UNAVAILABLE DUE TO TEST AND MAINTENANCE
		EndState	->CD	Added through Event Tree Add
13	2.950E-6	0.99	LOOPSC :17-45-2-01	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	1.000E+0		DE-OPRSC-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Switchgear)
	9.803E-1		/DE-OPRSC-09H2	DE for fail to recover OSP at 9 hrs, given fail to recover in first 2 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	1.200E-2		EPS-DGN-TM-1B	DIESEL GENERATOR B UNAVAILABLE DUE TO TEST AND MAINTENANCE
		EndState	->CD	Added through Event Tree Add
14	2.440E-6	0.82	LOOPSC :17-45-2-01	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	1.000E+0		DE-OPRSC-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Switchgear)
	9.803E-1		/DE-OPRSC-09H2	DE for fail to recover OSP at 9 hrs, given fail to recover in first 2 hrs
	2.393E-4		EPS-DGN-CF-RUN12	CCF OF UNIT 1 & 2 DIESEL GENERATORS TO RUN
		EndState	->CD	Added through Event Tree Add
15	2.400E-6	0.81	LODCII :20-01	
	6.000E-4		IE-LODCII	LOSS OF DC BUS II

#	Prob/Freq	Total %	Cut Set	Description
	4.000E-3		AFW-MDP-TM-1A	AFW MDP 1A UNAVAILABLE DUE TO TEST AND MAINTENANCE
		EndState	->CD	Added through Event Tree Add
16	2.400E-6	0.81	LODCI :20-01	
	6.000E-4		IE-LODCI	LOSS OF DC BUS I
	4.000E-3		AFW-MDP-TM-1B	AFW MDP 1B UNAVAILABLE DUE TO TEST AND MAINTENANCE
		EndState	->CD	Added through Event Tree Add
17	1.730E-6	0.58	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	8.760E-4		IE-CCW-HTX-PG-HX1A1	CCW HEAT EXCHANGER HX 1A-1 PLUGS
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
18	1.730E-6	0.58	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	8.760E-4		IE-CCW-HTX-PG-HX1A2	CCW HEAT EXCHANGER HX 1A-2 PLUGS
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
19	1.599E-6	0.54	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	8.097E-4		IE-CCW-MDP-CF-FR1ABC	CCF OF CCW MDPs 1A-A, 1B-B, C-S
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
20	1.229E-6	0.41	LOOPSC :17-45-2-01	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	1.000E+0		DE-OPRSC-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Switchgear)
	9.803E-1		/DE-OPRSC-09H2	DE for fail to recover OSP at 9 hrs, given fail to recover in first 2 hrs

#	Prob/Freq	Total %	Cut Set	Description
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
	5.000E-3		EPS-DGN-FS-1A	DIESEL GENERATOR A FAILS TO START
		EndState	->CD	Added through Event Tree Add
21	1.229E-6	0.41	LOOPSC :17-45-2-01	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	1.000E+0		DE-OPRSC-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Switchgear)
	9.803E-1		/DE-OPRSC-09H2	DE for fail to recover OSP at 9 hrs, given fail to recover in first 2 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	5.000E-3		EPS-DGN-FS-1B	DIESEL GENERATOR B FAILS TO START
		EndState	->CD	Added through Event Tree Add
22	1.200E-6	0.4	VSLOCA :03-01	
	2.000E-3		IE-VSLOCA	VERY SMALL LOCA
	3.000E-1		HPI-XHE-XM-RWSTR1	OPERATOR FAILS TO REFILL THE RWST
	2.000E-3		HPR-XHE-XM-RECIRC	OPERATOR FAILS TO START HIGH PRESSURE RECIRC
		EndState	->CD	Added through Event Tree Add
23	1.200E-6	0.4	SLOCA :05-01	
	6.000E-4		IE-SLOCA	SMALL LOCA
	2.000E-3		HPR-XHE-XM-RECIRC	OPERATOR FAILS TO START HIGH PRESSURE RECIRC
		EndState	->CD	Added through Event Tree Add
24	1.191E-6	0.4	LOOPPC :17-45-2-01	
	2.070E-3		IE-LOOPPC	LOSS OF OFFSITE POWER INITIATOR (PLANT-CENTERED)
	1.000E+0		DE-OPRPC-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr
	9.892E-1		/DE-OPRPC-09H2	DE for fail to recover OSP at 9 hrs, given fail to recover in first 2 hrs
	2.411E-2		EPS-DGN-FR-1A	DIESEL GENERATOR A FAILS TO RUN
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
		EndState	->CD	Added through Event Tree Add
25	1.144E-6	0.39	LOMFW :19-01	
	1.000E-1		IE-LOMFW	LOSS OF MAIN FEEDWATER
	2.288E-5		CCW-FAN-CF-ALLFR	CCF OF AFW/CCW AREA FAN COOLERS TO RUN
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
		EndState	->CD	Added through Event Tree Add
26	1.144E-6	0.39	LOMFW :19-01	
	1.000E-1		IE-LOMFW	LOSS OF MAIN FEEDWATER
	2.288E-5		CCW-FAN-CF-ALLFR	CCF OF AFW/CCW AREA FAN COOLERS TO RUN
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
		EndState	->CD	Added through Event Tree Add
27	1.105E-6	0.37	LOCCW :04-02-05-01	

#	Prob/Freq	Total %	Cut Set	Description
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	5.594E-4		IE-CCW-MDP-CF-FR1A1B	CCF OF CCW MDPs 1A-A, 1B-B
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
28	1.001E-6	0.34	LOERCW :14-01	
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW
	2.000E-3		HPR-XHE-XM-RECIRC	OPERATOR FAILS TO START HIGH PRESSURE RECIRC
	5.003E-4		IE-SWS-TSA-CF-PGALL	ERCW TRAVELING SCREEN PLUGS (INITIATING EVENT)
		EndState	->CD	Added through Event Tree Add
29	9.152E-7	0.31	LOCHS :11-01	
	8.000E-2		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	2.288E-5		CCW-FAN-CF-ALLFR	CCF OF AFW/CCW AREA FAN COOLERS TO RUN
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
		EndState	->CD	Added through Event Tree Add
30	9.152E-7	0.31	LOCHS :11-01	
	8.000E-2		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	2.288E-5		CCW-FAN-CF-ALLFR	CCF OF AFW/CCW AREA FAN COOLERS TO RUN
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
		EndState	->CD	Added through Event Tree Add
31	9.000E-7	0.3	LODCII :20-01	
	6.000E-4		IE-LODCII	LOSS OF DC BUS II
	1.500E-3		AFW-MDP-FS-1A	AFW MOTOR-DRIVEN PUMP 1A FAILS TO START
		EndState	->CD	Added through Event Tree Add
32	9.000E-7	0.3	LODCI :20-01	
	6.000E-4		IE-LODCI	LOSS OF DC BUS I
	1.500E-3		AFW-MDP-FS-1B	AFW MOTOR-DRIVEN PUMP 1B FAILS TO START
		EndState	->CD	Added through Event Tree Add
33	8.760E-7	0.3	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	8.760E-4		IE-CCW-HTX-PG-HX1A1	CCW HEAT EXCHANGER HX 1A-1 PLUGS
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
34	8.760E-7	0.3	LOCCW :04-14-02-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER

#	Prob/Freq	Total %	Cut Set	Description
	8.760E-4		IE-CCW-HTX-PG-HX1A2	CCW HEAT EXCHANGER HX 1A-2 PLUGS
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
35	8.650E-7	0.29	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.000E-1		CCW-CFG-AP-P1BBRUN	CCW PUMP 1B-B IS RUNNING, 1A-A IS IN STANDBY
	1.000E+0		CCW-XHE-XL-1BB	OPERATOR FAILS TO RECOVER CCW PUMP 1B-B
	2.000E-2		CCW-XHE-XM-P1AA	OPERATOR FAILS TO ALIGN PUMP 1A-A
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	4.380E-2		IE-CCW-MDP-FR-1BB	CCW PUMP 1B-B FAILS TO RUN (INITIATING EVENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
36	8.650E-7	0.29	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	5.000E-1		CCW-CFG-AP-P1AARUN	CCW PUMP 1A-A IS RUNNING, 1B-B IS IN STANDBY
	1.000E+0		CCW-XHE-XL-1AA	OPERATOR FAILS TO RECOVER CCW PUMP 1A-A
	2.000E-2		CCW-XHE-XM-P1BB	OPERATOR FAILS TO ALIGN PUMP 1B-B
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	4.380E-2		IE-CCW-MDP-FR-1AA	CCW PUMP 1A-A FAILS TO RUN (INITIATING EVENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
37	8.326E-7	0.28	LOMFW :19-01	
	1.000E-1		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.665E-5		CCW-FAN-CF-ALLFS	CCF OF AFW/CCW AREA FAN COOLERS TOSTART
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
		EndState	->CD	Added through Event Tree Add
38	8.326E-7	0.28	LOMFW :19-01	
	1.000E-1		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.665E-5		CCW-FAN-CF-ALLFS	CCF OF AFW/CCW AREA FAN COOLERS TOSTART
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
		EndState	->CD	Added through Event Tree Add
39	8.097E-7	0.27	LOCCW :04-14-02-01	

#	Prob/Freq	Total %	Cut Set	Description
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	8.097E-4		IE-CCW-MDP-CF-FR1ABC	CCF OF CCW MDPs 1A-A, 1B-B, C-S
	1.000E-3		RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
		EndState	->CD	Added through Event Tree Add
40	7.653E-7	0.26	LOOPPC :17-45-2-01	
	2.070E-3		IE-LOOPPC	LOSS OF OFFSITE POWER INITIATOR (PLANT-CENTERED)
	1.000E+0		DE-OPRPC-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr
	9.892E-1		/DE-OPRPC-09H2	DE for fail to recover OSP at 9 hrs, given fail to recover in first 2 hrs
	3.738E-4		EPS-DGN-CF-RUN1	CCF OF UNIT 1 DIESEL GENERATORS TO RUN
		EndState	->CD	Added through Event Tree Add
41	7.200E-7	0.24	LOERCW :15-01	
	1.000E+0		IE-LOERCW	TOTAL LOSS OF ERCW
	4.110E-3		IE-SWS-STR-CF-PGALL	CCF OF ALL 4 ERCW STRAINERS
	1.752E-4		PPR-SRV-CF-PORVS	CCF OF PORVs TO OPEN
		EndState	->CD	Added through Event Tree Add
42	7.200E-7	0.24	LODCII :20-01	
	6.000E-4		IE-LODCII	LOSS OF DC BUS II
	1.200E-3		AFW-AOV-CC-3164	INLET AOV 3164 TO SG 1 (FROM MDP-A) FAILS
		EndState	->CD	Added through Event Tree Add
43	7.200E-7	0.24	LODCII :20-01	
	6.000E-4		IE-LODCII	LOSS OF DC BUS II
	1.200E-3		AFW-AOV-CC-3156	INLET AOV 3156 TO SG 2 (FROM MDP-A) FAILS
		EndState	->CD	Added through Event Tree Add
44	7.200E-7	0.24	LODCI :20-01	
	6.000E-4		IE-LODCI	LOSS OF DC BUS I
	1.200E-3		AFW-AOV-CC-3171	INLET AOV 3171 TO SG 4 (FROM MDP-B) FAILS
		EndState	->CD	Added through Event Tree Add
45	7.200E-7	0.24	LODCI :20-01	
	6.000E-4		IE-LODCI	LOSS OF DC BUS I
	1.200E-3		AFW-AOV-CC-3148	INLET AOV 3148 TO SG 3 (FROM MDP-B) FAILS
		EndState	->CD	Added through Event Tree Add
46	6.920E-7	0.23	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	3.504E-4		IE-SWS-MOV-OC-6714	FAILURE OF SWS HEADER B DISCHARGE MOV 67-14
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS

#	Prob/Freq	Total %	Cut Set	Description
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
47	6.920E-7	0.23	LOCCW :04-02-05-01	
	1.000E+0		IE-LOCCW	TOTAL LOSS OF COMPONENT COOLING WATER
	1.000E-2		CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
	3.504E-4		IE-SWS-MOV-OC-67365	FAILURE OF SWS HEADER B DISCHARGE MOV 67-365
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
48	6.661E-7	0.22	LOCHS :11-01	
	8.000E-2		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.665E-5		CCW-FAN-CF-ALLFS	CCF OF AFW/CCW AREA FAN COOLERS TOSTART
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
		EndState	->CD	Added through Event Tree Add
49	6.661E-7	0.22	LOCHS :11-01	
	8.000E-2		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.665E-5		CCW-FAN-CF-ALLFS	CCF OF AFW/CCW AREA FAN COOLERS TOSTART
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
		EndState	->CD	Added through Event Tree Add
50	6.146E-7	0.21	LOOPSC :17-45-2-01	
	1.040E-2		IE-LOOPSC	LOSS OF OFFSITE POWER INITIATOR (SWITCHYARD-RELATED)
	2.500E-3		ACP-CRB-CC-1718	OFFSITE POWER SUPPLY BREAKER 1718 FAILS TO OPEN
	1.000E+0		DE-OPRSC-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Switchgear)
	9.803E-1		/DE-OPRSC-09H2	DE for fail to recover OSP at 9 hrs, given fail to recover in first 2 hrs
	2.411E-2		EPS-DGN-FR-1B	DIESEL GENERATOR B FAILS TO RUN
		EndState	->CD	Added through Event Tree Add

C.3.18 Sequoyah SS1 Cutset Sequence and Report

SS1 Top 5 Dominant Sequences

LOOPGR 17-06-1-01	/RPS,EPS,/AFW-B,/PORV-B,/RSD-B,/BP1,BP2,OPR-04H,DGR-O4H,/DE-OPRGR-10H4,/L1-CDF
LOOPGR 17-03-10-1-01	/RPS,EPS,/AFW-B,/PORV-B,/RSD-B,/BP1,/BP2,OPR-04H,DGR-04H,AFW-MAN,SG-DEP-LT1,/DE-OPRGR-10H4,/L1-CDF
LOOPGR 17-06-2-01	/RPS,EPS,/AFW-B,/PORV-B,RSD-B,/BP1,/O1,/OPR-03H,/HPI-LR,HPR-LR,/L1-CDF
LOOPGR 17-45-2-01	/RPS,EPS,AFW-B,OPR-01H,DGR-01H,DE-OPRGR-02H1,/DE-OPRGR-09H2,/L1-CDF
LOOPGR 17-03-10-2-01	/RPS,EPS,/AFW-B,/PORV-B,/RSD-B,/BP1,/BP2,OPR-04H,DGR-O4H,AFW-MAN,SG-DEP-LT1,DE-OPRGR-10H4,/DE-OPRGR-17H10,/L1-CDF

SS1 Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	2.008E-2	40.12	LOOPGR :17-06-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	6.500E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
2	1.566E-2	31.29	LOOPGR :17-03-10-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	8.393E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	6.500E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
3	2.735E-3	5.46	LOOPGR :17-06-2-01	

#	Prob/Freq	Total %	Cut Set	Description
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	1.607E-1		DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	7.110E-1		/DE-OPRGR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	6.500E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
4	2.532E-3	5.06	LOOPGR :17-45-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	5.826E-1		DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	9.135E-1		/DE-OPRGR-09H2	DE for fail to recover OSP at 9 hrs, given fail to recover in first 2 hrs
	9.172E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
		EndState	->CD	Added through Event Tree Add
5	2.133E-3	4.26	LOOPGR :17-03-10-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	1.607E-1		DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	7.110E-1		/DE-OPRGR-17H10	DE for fail to recover OSP at 17 hrs, given fail to recover in first 10 hrs
	6.500E-1		EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
	1.864E-1		OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add

#	Prob/Freq	Total %	Cut Set	Description
6	1.986E-3	3.97	LOOPGR :17-45-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	7.000E-3		AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
	4.174E-1		/DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	9.172E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
		EndState	->CD	Added through Event Tree Add
7	1.809E-3	3.61	LOOPGR :17-45-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	5.000E-3		AFW-TDP-TM-1A	AFW TDP UNAVAILABLE DUE TO TEST AND MAINTENANCE
	5.826E-1		DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	9.135E-1		/DE-OPRGR-09H2	DE for fail to recover OSP at 9 hrs, given fail to recover in first 2 hrs
	9.172E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
		EndState	->CD	Added through Event Tree Add
8	1.485E-3	2.97	LOOPGR :17-45-2-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN
	5.826E-1		DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	9.135E-1		/DE-OPRGR-09H2	DE for fail to recover OSP at 9 hrs, given fail to recover in first 2 hrs
	9.172E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
		EndState	->CD	Added through Event Tree Add
9	1.418E-3	2.83	LOOPGR :17-45-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	5.000E-3		AFW-TDP-TM-1A	AFW TDP UNAVAILABLE DUE TO TEST AND MAINTENANCE
	4.174E-1		/DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	9.172E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR

#	Prob/Freq	Total %	Cut Set	Description
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
		EndState	->CD	Added through Event Tree Add
10	1.165E-3	2.33	LOOPGR :17-45-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	4.106E-3		AFW-TDP-FR-1A	AFW TURBINE DRIVEN PUMP FAILS TO RUN
	4.174E-1		/DE-OPRGR-02H1	DE for fail to recover OSP at 2 hr, given it was not recovered in first 1 hr (Grid)
	9.172E-1		EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
	7.410E-1		OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
		EndState	->CD	Added through Event Tree Add

C.3.19 Sequoyah SS3 Cutset Sequence and Report

SS3 Dominant Sequence

LOMFW 20-01	/RPS,/OEP,AFW,MFW,/HPI,BLEED,/L1-CDF

SS3 Cutset

#	Prob/Freq	Total %	Cut Set	Description
Total	3.000E-1	100	Displaying 1 of 9895 Cut Sets.	
1	3.000E-1	100	LOMFW :20-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
		EndState	->CD	Added through Event Tree Add

C.3.20 Sequoyah SS2 (Case 1) Cutset Sequence and Report

SS2 (Case 1) Top 90 Percent Dominant Sequences

LOMFW 24-07-01	RPS,/PPR,/AFW-A,BORATION,/BLEED,/L1-CDF
LOMFW 24-21-01	RPS,PP,/L1-CDF

SS2 (Case 1) Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	2.000E-2	33.31	LOMFW :24-07-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	2.000E-2		CVC-XHE-XM-BOR	OPERATOR FAILS TO INITIATE EMERGENCY BORATION
		EndState	->CD	Added through Event Tree Add
2	1.400E-2	23.32	LOMFW :24-21-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER

#	Prob/Freq	Total %	Cut Set	Description
	1.400E-2		RCS-PHN-MODPOOR	MODERATOR TEMP COEFFICIENT NOT ENOUGH NEGATIVE
		EndState	->CD	Added through Event Tree Add
3	8.000E-3	13.32	LOMFW :24-21-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	8.000E-3		PPR-SRV-CC-SRV1	SRV-1 (68-563) FAILS TO OPEN
		EndState	->CD	Added through Event Tree Add
4	8.000E-3	13.32	LOMFW :24-21-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	8.000E-3		PPR-SRV-CC-SRV2	SRV-2 (68-564) FAILS TO OPEN
		EndState	->CD	Added through Event Tree Add
5	8.000E-3	13.32	LOMFW :24-21-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	8.000E-3		PPR-SRV-CC-SRV3	SRV-3 (68-565) FAILS TO OPEN
		EndState	->CD	Added through Event Tree Add
6	3.516E-3	5.86	LOMFW :24-21-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	5.930E-2		PPR-MOV-FC-332	PORV BLOCK VALVE FCV-68-332 CLOSED DURING POWER (PSA)
	5.930E-2		PPR-MOV-FC-333	PORV BLOCK VALVE FCV-68-333 CLOSED DURING POWER (PSA)
		EndState	->CD	Added through Event Tree Add

C.3.21 Sequoyah SS2 (Case 2) Cutset Sequence and Report

SS2 Top 90 Percent Dominant Sequences

TRANS 24-07-01	RPS,/PPR,/AFW-A,BORATION,/BLEED,/L1-CDF
TRANS 24-21-01	RPS,PPR,/L1-CDF

SS2 Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	2.000E-2	33.31	TRANS :24-07-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	2.000E-2		CVC-XHE-XM-BOR	OPERATOR FAILS TO INITIATE EMERGENCY BORATION
		EndState	->CD	Added through Event Tree Add
2	1.400E-2	23.32	TRANS :24-21-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.400E-2		RCS-PHN-MODPOOR	MODERATOR TEMP COEFFICIENT NOT ENOUGH NEGATIVE
		EndState	->CD	Added through Event Tree Add
3	8.000E-3	13.32	TRANS :24-21-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	8.000E-3		PPR-SRV-CC-SRV1	SRV-1 (68-563) FAILS TO OPEN
		EndState	->CD	Added through Event Tree Add

#	Prob/Freq	Total %	Cut Set	Description
4	8.000E-3	13.32	TRANS :24-21-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	8.000E-3		PPR-SRV-CC-SRV2	SRV-2 (68-564) FAILS TO OPEN
		EndState	->CD	Added through Event Tree Add
5	8.000E-3	13.32	TRANS :24-21-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	8.000E-3		PPR-SRV-CC-SRV3	SRV-3 (68-565) FAILS TO OPEN
		EndState	->CD	Added through Event Tree Add
6	3.516E-3	5.86	TRANS :24-21-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	5.930E-2		PPR-MOV-FC-332	PORV BLOCK VALVE FCV-68-332 CLOSED DURING POWER (PSA)
	5.930E-2		PPR-MOV-FC-333	PORV BLOCK VALVE FCV-68-333 CLOSED DURING POWER (PSA)
		EndState	->CD	Added through Event Tree Add

C.3.22 Sequoyah SS6 (Case 1) Cutset Sequence and Report

SS6 (Case 1) Top 90 Percent Dominant Sequences

LOCHS 02-14-02-01	/RPS,/OEP,/AFW,/PORV,LOSC,RCPT,/HPI-M,/AFW-A,/SSC,LPR,/L1-CDF
LOCHS-02-14-10-01	/RPS,/OEP,/AFW,/PORV,LOSC,RCPT,HPI-M,/ACC-M,/AFW-A,SSC1,/L1-CDF

SS6 (Case1) Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	3.161E-3	47.91	LOCHS :02-14-02-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	6.322E-3		CCW-MDP-CF-RUN	CCF OF CCW MDPS TO RUN
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
		EndState	->CD	Added through Event Tree Add
2	3.161E-3	47.91	LOCHS :02-14-02-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	6.322E-3		CCW-MDP-CF-RUN	CCF OF CCW MDPS TO RUN
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
		EndState	->CD	Added through Event Tree Add
3	1.680E-4	2.55	LOCHS :02-14-02-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
4	1.200E-4	1.82	LOCHS :02-14-10-01	
	1.000E+0		IE-LOCHS	LOSS OF CONDENSER HEAT SINK
	1.200E-4		SWS-TSA-PG-TRN1A	ERCW TRAVELING SCREEN 1A PLUGS
		EndState	->CD	Added through Event Tree Add

C.3.23 Sequoyah SS6 (Case 2) Cutset Sequence and Report

SS6 (Case 2) Top 90 Percent Dominant Sequences

LOMFW 02-14-02-01	/RPS,/OEP,/AFW,/PORV,LOSC,RCPT,/HPI-M,/AFW-A,/SSC,LPR,/L1-CDF
LOMFW 02-14-10-01	/RPS,/OEP,/AFW,/PORV,LOSC,RCPT,HPI-M,/ACC-M,/AFW-A,SSC1,/L1-CDF

SS6 (Case 2) Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	3.161E-3	47.91	LOMFW :02-14-02-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	6.322E-3		CCW-MDP-CF-RUN	CCF OF CCW MDPS TO RUN
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY RUNNING
		EndState	->CD	Added through Event Tree Add
2	3.161E-3	47.91	LOMFW :02-14-02-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	6.322E-3		CCW-MDP-CF-RUN	CCF OF CCW MDPS TO RUN
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
		EndState	->CD	Added through Event Tree Add
4	1.680E-4	2.55	LOMFW :02-14-02-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
		EndState	->CD	Added through Event Tree Add
5	1.200E-4	1.82	LOMFW :02-14-10-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.200E-4		SWS-TSA-PG-TRN2A	ERCW TRAVELING SCREEN 2A PLUGS
		EndState	->CD	Added through Event Tree Add

C.3.24 Sequoyah SS6 (Case 3) Cutset Sequence and Report

SS6 (Case 3) Top 90 Percent Dominant Sequences

TRANS 02-14-02-01	/RPS,/OEP,/AFW,/PORV,LOSC,RCPT,/HPI-M,/AFW-A,/SSC,LPR,/L1-CDF
TRANS 02-14-10-01	/RPS,/OEP,/AFW,/PORV,LOSC,/RCPT,/RSD,/BP1,BP2,/FW,HPI,SSC1,/L1-CDF

SS6 (Case 3) Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	3.161E-3	47.91	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	6.322E-3		CCW-MDP-CF-RUN	CCF OF CCW MDPS TO RUN
	5.000E-1		CCW-SYS-FC-1ARUN	CCW PUMP 1A-A IS NORMALLY RUNNING
2	3.161E-3	47.91	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	6.322E-3		CCW-MDP-CF-RUN	CCF OF CCW MDPS TO RUN
	5.000E-1		CCW-SYS-FC-1BRUN	CCW PUMP 1B-B IS NORMALLY

#	Prob/Freq	Total %	Cut Set	Description
				RUNNING
3	1.680E-4	2.55	TRANS :02-14-02-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.680E-4		SWS-STR-PG-A2AA	SWS TRAIN 2A DISCH STRAINER A2AA FAILS
4	1.200E-4	1.82	TRANS :02-14-10-01	
	1.000E+0		IE-TRANS	GENERAL PLANT TRANSIENT
	1.200E-4		SWS-MDP-FR-RA	SWS MDP RA FAILS TO RUN

C.3.25 Sequoyah SG1 Cutset Sequence and Report

SG1 Dominant Sequences

LOOPGR 17-06-1-01	/RPS,EPS,/AFW-B,/PORV-B,/RSD-B,/BP1,BP2,OPR-04H,DGR-O4H,/DE-OPRGR-10H4,/L1-CDF
LOOPGR 17-03-10-1-01	/RPS,EPS,/AFW-B,/PORV-B,/RSD-B,/BP1,/BP2,OPR-04H,DGR-04H,AFW-MAN,SG-DEP-LT1,/DE-OPRGR-10H4,/L1-CDF

SG1 Top 90 Percent Cutsets

#	Prob/Freq	Total %	Cut Set	Description
1	1.916E-1	61.33	LOOPGR :17-06-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	9.700E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	2.000E-1		RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add
2	1.494E-1	47.84	LOOPGR :17-03-10-1-01	
	1.000E+0		IE-LOOPGR	LOSS OF OFFSITE POWER INITIATOR (GRID-RELATED)
	3.000E-1		AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
	9.700E-1		/DE-OPRGR-10H4	DE for fail to recover OSP at 10 hrs, given fail to recover in first 4 hrs
	6.500E-1		PCS-XHE-XM-SGS1	OPERATOR FAILS TO DEPRESSURIZE SGs (DEPENDENT)
	9.875E-1		/RCS-MDP-LK-BP1	RCP SEAL STAGE 1 INTEGRITY (BINDING/POPPING OPEN) FAILS
	8.000E-1		/RCS-MDP-LK-BP2	RCP SEAL STAGE 2 INTEGRITY (BINDING/POPPING OPEN) FAILS
		EndState	->CD	Added through Event Tree Add

C.3.26 Sequoyah SG2 Cutset Sequence and Report

SG2 Dominant Sequence

LOMFW 24-21-01	RPS,PPR,/L1-CDF

SG2 Cutset

#	Prob/Freq	Total %	Cut Set	Description
1	1.000E+0	100	LOMFW :24-21-01	
	1.000E+0		IE-LOMFW	LOSS OF MAIN FEEDWATER
	1.000E+0		<TRUE>	SYSTEM GENERATED FAILURE EVENT
		EndState	->CD	Added through Event Tree Add

APPENDIX D ET TOP SYSTEM DEFINITIONS

D.1 Peach Bottom ET Top System Definitions

D.1.1 Peach Bottom IORV ET

IE-IORV Initiating inadvertent open relief valve.

RPS Success or failure of the reactor protection system (RPS) to insert enough negative reactivity by the control rods to shut down the reactor.

OEP Success or failure of the offsite electrical power supply. Success implies the offsite electrical power supply is available to power plant loads and emergency supplies are not needed.

PCS Success or failure of the power conversion system. Success implies the turbine bypass lines open and reactor steam is being condensed in the main condenser. Makeup to the condenser and operation of one feedwater train is required.

HPI Success or failure of high pressure injection. Success implies operation of the RCIC pump with a flow path from both the suppression pool and the CST to the reactor vessel, or operation of the HPCI pump with a flow path from both the suppression pool and the CST to the reactor vessel. Success is assumed to require realignment from the CST to the suppression pool at some point before a loss of steam pressure shuts down the pump turbines.

CRD Success or failure of one-pump CRD. Success implies one CRD pump is able to inject through either the cooling water or charging water headers

DEP Success or failure of manual depressurization. Success implies the operators manually open sufficient SRVs to depressurize the reactor for low pressure injection.

LPI Success or failure of low pressure injection. Success implies operation of any two of the four core spray pumps and injection through at least one core spray injection line, or operation of any one of the four RHR pumps and injection through at least one low-pressure coolant injection line.

VA Success or failure of the alternate low pressure injection. Success implies one HPSW pump provides coolant to the reactor through the LPCI injection line. Successful alignment of alternate injection may have to occur in a very short time span following the occurrence of the initiating event if the preferred injection systems experience demand failures.

RHR Success or failure of RHR. Success implies operation of any one of the four RHR pumps and its associated heat exchanger and injection through at least one suppression pool cooling line, containment spray header, or depressurization and injection through one shutdown cooling return line.

PCSR Success or failure of recovery of the power conversion system. In the most general case recovery implies the full PCS function described above. However,

in cases where short term injection has been successful, recovery may require only the steam condensing function of the power conversion system.

CVS — Success or failure of containment venting. Success conservatively implies all available vent paths are opened.

LI — Success or failure of late injection. Success is sequence dependent. Generally, success implies one CRD pump is able to inject through either the cooling water or charging water headers or one HPSW pump provides coolant to the reactor through the LPCI injection line.

D.1.2 Peach Bottom LOCHS ET

IE-LOCHS — Loss of condenser heat sink initiating event.

RPS — Success or failure of the reactor protection system (RPS) to insert enough negative reactivity by the control rods to shut down the reactor.

OEP — Success or failure of the offsite electrical power supply. Success implies the offsite electrical power supply is available to power plant loads and emergency supplies are not needed.

PPR — Success or failure of reactor pressure vessel pressure relief. Success implies that a high pressure transient occurs and a sufficient number of SRVs open to protect the reactor from overpressure.

SRV — Success or failure of the safety relief valves to reclose. Success implies all relief valves that opened then closed.

HPI — Success or failure of high pressure injection. Success implies operation of the RCIC or HPCI pump with a flow path from the CST to the reactor vessel. Realignment from the CST to the suppression pool is not required unless the CST is unavailable.

SPC — Success or failure of the suppression pool cooling mode of RHR. Success implies operation of any 1-of-4 RHR pumps and its associated heat exchanger and injection through at least one suppression pool cooling line.

DEP — Success or failure of manual depressurization. Success implies the operators manually open at least two SRVs to depressurize the reactor for low pressure injection.

CRD — Success or failure of two-pump CRD injection. Success implies two CRD pumps are able to inject through either the cooling water or charging water headers. Success requires initial injection success with HPI for two hours before enhanced CRD will provided adequate injection.

CDS — Success or failure of the condensate system. Success implies at least one pump operating and sufficient makeup to the condenser hotwell to maintain injection for the mission.

LPI — Success or failure of low pressure injection. Success implies operation of 2-of-4 core spray pumps and injection through at least one core spray injection line, or operation of 1-of-4 RHR pumps and injection through at least one low-pressure coolant injection line.

VA — Success or failure of the alternate low pressure injection. Success implies one high pressure service water pump provides coolant to the reactor.

RHR — Success or failure of RHR. Success implies operation of any one of the four RHR pumps and its associated heat exchanger and injection through at least one suppression pool cooling line, containment spray header, or depressurization and injection through one shutdown cooling return line.

PCSR — Success or failure of recovery of the power conversion system. In the most general case recovery implies the full PCS function described above. However, in cases where short term injection has been successful, recovery may require only the steam condensing function of the power conversion system.

CVS — Success or failure of containment venting. Success implies one vent path is opened.

LI — Success or failure of late injection. The injection sources that may be credited are sequence dependent. The most common case is where containment failure may cause failure of the operating injection source. In other cases success may be achieved with CRD injection, high pressure service water injection, or condensate injection. CRD success implies one CRD pump is able to inject through either the cooling water or charging water headers.

D.1.3 Peach Bottom LOMFW ET

IE-LOMFW — Loss of feedwater initiating event.

RPS — Success or failure of the reactor protection system (RPS) to insert enough negative reactivity by the control rods to shut down the reactor.

OEP — Success or failure of the offsite electrical power supply. Success implies the offsite electrical power supply is available to power plant loads and emergency supplies are not needed.

PPR — Success or failure of reactor pressure vessel pressure relief. Success implies that a high pressure transient occurs and a sufficient number of SRVs open to protect the reactor from overpressure.

SRV — Success or failure of the safety relief valves to reclose. Success implies all relief valves that opened then closed.

HPI — Success or failure of high pressure injection. Success implies operation of the RCIC or HPCI pump with a flow path from the CST to the reactor vessel. Realignment from the CST to the suppression pool is not required unless the CST is unavailable.

SPC	Success or failure of the suppression pool cooling mode of RHR. Success implies operation of any one of the four RHR pumps and its associated heat exchanger and injection through at least one suppression pool cooling line.
DEP	Success or failure of manual depressurization. Success implies the operators manually open sufficient SRVs to depressurize the reactor for low pressure injection.
CRD	Success or failure of two-pump CRD injection. Success implies two CRD pumps are able to inject through either the cooling water or charging water headers. Success requires initial injection success with HPI for two hours before enhanced CRD will provided adequate injection.
CDS	Success or failure of the condensate system. Success implies at least one pump operating and sufficient makeup to the condenser hotwell to maintain injection for the mission.
LPI	Success or failure of low pressure injection. Success implies operation of 2-of-4 core spray pumps and injection through at least one core spray injection line, or operation of 1-of-4 RHR pumps and injection through at least one low-pressure coolant injection line.
VA	Success or failure of the alternate low pressure injection. Success implies one HPSW pump provides coolant to the reactor through the LPCI injection line.
CND	Success or failure of steam condensation in the main condenser. Success implies the turbine bypass lines open and reactor steam is being condensed in the main condenser. Makeup to the condenser is required.
RHR	Success or failure of RHR. Success implies operation of any one of the four RHR pumps and its associated heat exchanger and injection through at least one suppression pool cooling line, containment spray header, or depressurization and injection through one shutdown cooling return line.
PCSR	Success or failure of recovery of the power conversion system. In the most general case recovery implies the full PCS function described above. However, in cases where short term injection has been successful, recovery may require only the steam condensing function of the power conversion system.
CVS	Success or failure of containment venting. Success implies one vent path is opened.
LI	Success or failure of late injection. The injection sources that may be credited are sequence dependent. The most common case is where containment failure may cause failure of the operating injection source. In other cases success may be achieved with CRD injection, RHR service water injection, or condensate injection. CRD success implies one CRD pump is able to inject through either the cooling water or charging water headers.

D.1.4 Peach Bottom LOOPGR ET

IE-LOOPGR Initiating event loss-of-offsite power (grid-related).

RPS Success or failure of the reactor protection system (RPS) to insert enough negative reactivity by the control rods to shut down the reactor.

EPS Success or failure of the emergency power system to power at least one Class 1E Division. Sequences with EPS success credit recovery of offsite power in different timeframes through the use of sequence flagsets as described in Table 3-4. Sequences with EPS failure transfer to the station blackout event tree.

PPR Success or failure of the safety relief valves to open. Success implies a sufficient number of relief valves opened to relieve overpressure given an over-pressure transient.

SRV Success or failure of the safety relief valves to close given they opened. Success implies that all relief valves that opened close.

HPI Success or failure of high pressure injection. Success implies operation of the either the RCIC pump or the HPCI pump with a flow path from both the suppression pool and the CST to the reactor vessel. Success is assumed to require realignment from the CST to the suppression pool at some point before a loss of steam pressure shuts down the turbine.

SPC Success or failure of the suppression pool cooling mode of RHR (early demand). Success implies operation of any one of the four RHR pumps and its associated heat exchanger and injection through at least one suppression pool cooling line.

DEP Success or failure of manual depressurization. Success implies the operators manually open sufficient SRVs to depressurize the reactor for low pressure injection.

CRD Success or failure of two-pump CRD injection. Success implies two CRD pumps are able to inject through either the cooling water or charging water headers. Success requires initial injection success with HPI for two hours before enhanced CRD will provided adequate injection.

LPI Success or failure of low pressure injection. Success implies successful operation of either the low pressure coolant injection mode of the RHR system or operation of the core spray system. Success of the low pressure coolant injection mode of RHR implies operation of any one of the four RHR pumps and injection through at least one low-pressure coolant injection line. Success of the core spray system requires of any two of the four core spray pumps and injection through at least one core spray injection line.

VA Success or failure of the alternate low pressure injection. Success implies one HPSW pump provides coolant to the reactor through the LPCI injection line. Successful alignment of alternate injection may have to occur in a very short time

span following the occurrence of the initiating event if the preferred injection systems experience demand failures.

RHR — Success or failure of RHR. Success implies operation of any one of the four RHR pumps and its associated heat exchanger and injection through at least one suppression pool cooling line, containment spray header, or depressurization and injection through one shutdown cooling return line.

CVS — Success or failure of containment venting. Success conservatively implies all available vent paths are opened.

LI — Success or failure of late injection. Success is sequence dependent. Generally, success implies one CRD pump is able to inject through either the cooling water or charging water headers or one HPSW pump provides coolant to the reactor through the LPCI injection line.

D.1.5 Peach Bottom IE-SLOCA ET

IE-SLOCA — Initiating event small LOCA. The small LOCA initiating event is defined as a steam or liquid break that can be mitigated with either HPCI or RCIC.

RPS — Success or failure of the reactor protection system (RPS) to insert enough negative reactivity by the control rods to shut down the reactor.

VSS — Success or failure of vapor suppression. Success implies that no drywell vacuum breakers stick open.

PCS — Success or failure of the power conversion system. Success implies the turbine bypass lines open and reactor steam is being condensed in the main condenser. Makeup to the condenser and operation of one feedwater train is required.

HPI — Success or failure of high pressure injection. Success implies operation of the RCIC pump with a flow path from both the suppression pool and the CST to the reactor vessel, or operation of the HPCI pump with a flow path from both the suppression pool and the CST to the reactor vessel. Success is assumed to require realignment from the CST to the suppression pool at some point before a loss of steam pressure shuts down the pump turbines.

DEP — Success or failure of manual depressurization. Success implies the operators manually open sufficient SRVs to depressurize the reactor for low pressure injection.

LPI — Success or failure of low pressure injection. Success implies operation of any two of the four core spray pumps and injection through at least one core spray injection line, or operation of any one of the four RHR pumps and injection through at least one low-pressure coolant injection line.

VA — Success or failure of the alternate low pressure injection. Success implies one HPSW pump provides coolant to the reactor through the LPCI injection line. Successful alignment of alternate injection may have to occur in a very short time

span following the occurrence of the initiating event if the preferred injection systems experience demand failures.

SPC — Success or failure of the suppression pool cooling mode of RHR. Success implies operation of any one of the four RHR pumps and its associated heat exchanger and injection through at least one suppression pool cooling line.

SDC — Success or failure of the shutdown cooling mode of RHR. Success implies operation of any one of the four RHR pumps and its associated heat exchanger and injection through at least one shutdown cooling line.

PCSR — Success or failure of recovery of the power conversion system. In the most general case recovery implies the full PCS function described above. However, in cases where short term injection has been successful, recovery may require only the steam condensing function of the power conversion system.

CVS — Success or failure of containment venting. Success conservatively implies all available vent paths are opened.

LI — Success or failure of late injection.

D.1.6 Peach Bottom IE-TRANS ET

IE-TRANS — General transient initiating event.

RPS — Success or failure of the reactor protection system (RPS) to insert enough negative reactivity by the control rods to shut down the reactor.

OEP — Success or failure of the offsite electrical power supply. Success implies the offsite electrical power supply is available to power plant loads and emergency supplies are not needed.

PCS — Success or failure of the power conversion system. Success implies the turbine bypass lines open and reactor steam is being condensed in the main condenser. Makeup to the condenser and operation of one feedwater train is required.

PPR — Success or failure of reactor pressure vessel pressure relief. Success implies that a high pressure transient occurs and a sufficient number of SRVs open to protect the reactor from overpressure.

SRV — Success or failure of the safety relief valves to reclose. Success implies all relief valves that opened then closed.

HPI — Success or failure of high pressure injection. Success implies operation of the either the RCIC pump or the HPCI pump with a flow path from both the suppression pool and the CST to the reactor vessel. Success is assumed to require realignment from the CST to the suppression pool at some point before a loss of steam pressure shuts down the turbine.

SPC — Success or failure of the suppression pool cooling mode of RHR. Success implies operation of any one of the four RHR pumps and its associated heat exchanger and injection through at least one suppression pool cooling line.

DEP — Success or failure of manual depressurization. Success implies the operators manually open sufficient SRVs to depressurize the reactor for low pressure injection.

CRD — Success or failure of two-pump CRD injection. Success implies two CRD pumps are able to inject through either the cooling water or charging water headers. Success requires initial injection success with HPI for two hours before enhanced CRD will provided adequate injection.

CDS — Success or failure of the condensate system. Success implies at least one pump operating and sufficient makeup to the condenser hotwell to maintain injection for the mission. Vacuum drag through both drag lines is assumed to provide adequate makeup to the hotwell.

LPI — Success or failure of low pressure injection. Success implies successful operation of either the low pressure coolant injection mode of the RHR system or operation of the core spray system. Success of the low pressure coolant injection mode of RHR implies operation of any one of the four RHR pumps and injection through at least one low-pressure coolant injection line. Success of the core spray system requires of any two of the four core spray pumps and injection through at least one core spray injection line.

VA — Success or failure of the alternate low pressure injection. Success implies one HPSW pump provides coolant to the reactor through the LPCI injection line. Successful alignment of alternate injection may have to occur in a very short time span following the occurrence of the initiating event if the preferred injection systems experience demand failures.

CND — Success or failure of steam condensation in the main condenser. Success implies the turbine bypass lines open and reactor steam is being condensed in the main condenser. Makeup to the condenser is required.

RHR — Success or failure of RHR. Success implies operation of any one of the four RHR pumps and its associated heat exchanger and injection through at least one suppression pool cooling line, containment spray header, or depressurization and injection through one shutdown cooling return line.

PCSR — Success or failure of recovery of the power conversion system. In the most general case recovery implies the full PCS function described above. However, in cases where short term injection has been successful, recovery may require only the steam condensing function of the power conversion system.

CVS — Success or failure of containment venting. Success conservatively implies all available vent paths are opened.

LI — Success or failure of late injection. The injection sources that may be credited are sequence dependent. The most common case is where containment failure may cause failure of the operating injection source. In other cases success may be achieved with CRD injection, RHR service water injection, or condensate

injection. CRD success implies one CRD pump is able to inject through either the cooling water or charging water headers.

D.2 Surry ET Top System Definitions

D.2.1 Surry LOCHS ET

IE-LOCHS Initiating event loss of condenser heat sink transient.

RPS This top represents the success or failure of the reactor protection system (RPS) to insert enough negative reactivity by the control rods to shutdown the reactor.

AFW The AFW top event represents the success or failure of auxiliary feedwater (AFW). Success or failure of the AFW system to remove decay heat via the steam generators is questioned given the isolation of the MFW system. Main feedwater is initially tripped on a low T_{ave} signal. Success implies automatic actuation and operation of the AFW system. The AFW system supplies sufficient cooling water to at least one steam generator. The success criteria are one-of-three AFW trains supplying at least one-of-three steam generators.

MFW The MFW top event represents the success or failure of main feedwater (MFW). Success or failure of the MFW system to remove decay heat via the steam generators is questioned given the AFW system is unavailable. Main feedwater is initially tripped on a low T_{ave} signal; however, it can be restored given the event is not a loss of MFW. The MFW system supplies sufficient cooling water to at least one-of-three steam generators.

PORV Success or failure of the power operated relief valves (PORVs) or safety relief valves (SRVs) in maintaining the RCS boundary integrity. Success requires that no PORVs or SRVs opened, or if they opened, success requires that all opened PORVs/SRVs close once RCS pressure is lower than the relief pressure setpoints.

LOSC The success or failure of RCP seal cooling from either the component cooling water or charging (CVC) systems is represented in this top event. Success requires the CCW or CVC to provide sufficient cooling the RCPs to eliminate the potential of a RCP seal LOCA. Failure to provide cooling to the RCP seals leads to a potential RCP seal LOCA.

HPI Success or failure of the high pressure injection (HPI) system to provide makeup water to the RCS. Success implies automatic actuation and operation of the high pressure injection system (i.e., charging pumps). The pumps take suction from the RWST and provide flow to the RCS cold legs. The HPI system provides sufficient water to keep the core covered. The success criteria are one-of-three charging trains.

FAB Success or failure of feed and bleed cooling given secondary cooling is unavailable. Success requires high pressure injection and one PORV to open to remove decay heat from the RCS. An operator is required to open the PORV and the PORV block valve if they are closed. The success criteria are one-of-three HPI pumps and one-of-two PORVs open to create the bleed path.

CSR Success or failure of containment spray recirculation (CSR). Success requires the inside or outside containment spray pumps to take suction from the containment sump and cool the water down by running it through their respective heat exchangers. The cooled water is then sprayed into containment to lower the containment pressure and temperature. The CSR system will keep the sump water cool enough to provide a net positive suction head for the LPI pumps. The success criteria are one-of-two inside CSR pumps or one-of-two outside CSR pumps.

HPR Success or failure of high pressure recirculation. Success requires the HPI pumps to take suction from the discharge of the LPI pumps and deliver the water to the RCS. HPR will provide long-term cooling for the reactor given the HPI system was successful in supplying early makeup water to the reactor. HPR is required if residual heat removal cannot be established. The decay heat will be removed from the containment sump by the CSR pump train heat exchangers. An operator action is required to align the LPI pump discharge to the HPI pump suction and verify that the containment sump valves are open and the RWST suction valves are closed. The success criteria are one-of-three charging pumps and one-of-two LPI trains.

LPR Success or failure of the low pressure recirculation (LPR). Success requires the LPI pump trains to take suction from the containment sump and discharge the sump water into the RCS cold legs. The decay heat will be removed from the containment sump by the CSR pump train heat exchangers. The success criteria are one-of-two LPI pump trains

D.2.2 Surry LOMFW ET

IE-LOMFW Loss of main feedwater initiating event transient.

RPS This top represents the success or failure of the reactor protection system (RPS) to insert enough negative reactivity by the control rods to shutdown the reactor.

AFW The AFW top event represents the success or failure of auxiliary feedwater (AFW). Success or failure of the AFW system to remove decay heat via the steam generators is questioned given the isolation of the MFW system. Main feedwater is initially tripped on a low T_{ave} signal. Success implies automatic actuation and operation of the AFW system. The AFW system supplies sufficient cooling water to at least one steam generator. The success criteria are one-of-three AFW trains supplying at least one-of-three steam generators.

PORV Success or failure of the power operated relief valves (PORVs) or safety relief valves (SRVs) in maintaining the RCS boundary integrity. Success requires that no PORVs or SRVs opened, or if they opened, success requires that all opened PORVs/SRVs reclose once RCS pressure is lower than the relief pressure setpoints.

LOSC The success or failure of RCP seal cooling from either the component cooling water or charging (CVC) systems is represented in this top event. Success requires the CCW or CVC to provide sufficient cooling the RCPs to eliminate the

potential of a RCP seal LOCA. Failure to provide cooling to the RCP seals, leads to a potential RCP seal LOCA.

HPI — Success or failure of the high pressure injection (HPI) system to provide makeup water to the RCS. Success implies automatic actuation and operation of the high pressure injection system (i.e., charging pumps). The pumps take suction from the RWST and provide flow to the RCS cold legs. The HPI system provides sufficient water to keep the core covered. The success criteria are one-of-three charging trains.

FAB — Success or failure of feed and bleed cooling given secondary cooling is unavailable is represented by this top event. Success requires one PORV to open and remove decay heat from the RCS. An operator is required to open the PORV and the PORV block valve if they are closed. Success also requires HPI to provide flow to the RCS cold legs. The success criteria are one-of-two PORVs open to create the bleed path and one-of-three HPI trains feeding at least one-of-three cold legs.

SSCR — Success or failure recovering secondary cooling. Success implies the operator recovers either AFW or MFW and closes any PORVs which were opened for feed and bleed cooling.

SSC — Success or failure of secondary side cooldown. Success requires the operator to cooldown the RCS by opening the turbine bypass valves (TBVs) or the atmospheric dump valves (ADVs). Successful cooldown is a prerequisite for alignment of the residual heat removal (RHR) system for heat removal. Success requires either the pressurizer sprays or the PORVs to depressurize the RCS in order for the low pressure injection pumps to perform sump recirculation. The success criteria are one-of-three PORVs to open or one-of-two pressurizer spray lines.

RHR — Success or failure of residual heat removal. Success implies the RCS pressure and temperature are within the requirements to allow the RCS hot leg (to RHR pump suction) suction valves to be opened and provide a suction source to the RHR pumps. The RHR heat exchangers will slowly cool down the reactor. This system requires an operator action to open the RCS hot leg valves which provide the suction source for the pumps. The success criteria are one-of-two RHR pumps providing sufficient flow through one-of-two heat exchangers.

CSR — Success or failure of containment spray recirculation (CSR). Success requires the inside or outside containment spray pumps to take suction from the containment sump and cool the water down by running it through their respective heat exchangers. The cooled water is then sprayed into containment to lower the containment pressure and temperature. The CSR system will keep the sump water cool enough to provide a net positive suction head for the LPI pumps. The success criteria are one-of-two inside CSR pumps or one-of-two outside CSR pumps.

HPR — Success or failure of high pressure recirculation. Success requires the HPI pumps to take suction from the discharge of the LPI pumps and deliver the water to the RCS. HPR will provide long-term cooling for the reactor given the HPI

system was successful in supplying early makeup water to the reactor. HPR is required if residual heat removal cannot be established. The decay heat will be removed from the containment sump by the CSR pump train heat exchangers. An operator action is required to align the LPI pump discharge to the HPI pump suction and verify that the containment sump valves are open and the RWST suction valves are closed. The success criteria are one-of-three charging pumps and one-of-two LPI trains.

LPR — Success or failure of the low pressure recirculation (LPR). Success requires the LPI pump trains to take suction from the containment sump and discharge the sump water into the RCS cold legs. The decay heat will be removed from the containment sump by the CSR pump train heat exchangers. The success criteria are one-of-two LPI pump trains.

D.2.3 Surry LOOPGR ET

IE-LOOPGR — Initiating event loss of offsite power (grid-related).

RPS — This top represents the success or failure of the reactor protection system (RPS) to insert enough negative reactivity by the control rods to shutdown the reactor.

EPS — Success or failure of onsite emergency power (i.e., diesel generators) is represented by this top event. Success implies that at least one onsite emergency diesel generator is providing sufficient ac power to its division bus.

AFW — The AFW top event represents the success or failure of auxiliary feedwater. Main feedwater is unavailable due to the initiating event. Given MFW is unavailable, the AFW system is required to remove decay heat via the steam generators. Success implies automatic actuation and operation of the AFW system. The AFW system supplies sufficient cooling water to at least one steam generator. The success criteria are one-of-three AFW trains supplying at least one-of-three steam generators.

PORV — This top represents the success or failure of the power operated relief valves. Success requires that no PORVs opened given the transient. Failure implies that the RCS pressure increased to a point that caused at least one PORV to lift and relieve RCS pressure.

This top also contains the success or failure of the PORVs to reclose. Success implies that all opened PORVs reclose once RCS pressure is lower than the relief pressure setpoints for the PORVs or the operator closes the PORV block valve(s).

LOSC — The success or failure of RCP seal cooling from either the component cooling water or charging (CVC) systems is represented in this top event. Success requires the CCW or CVC to provide sufficient cooling the RCPs to eliminate the potential of a RCP seal LOCA. Failure to provide cooling to the RCP seals, leads to a potential RCP seal LOCA.

HPI — This top event represents the success or failure of the high pressure injection system to provide makeup water to the RCS. Success implies automatic

actuation and operation of the HPI system. The pumps take suction from the refueling water storage tank (RWST) and provide flow to the RCS cold legs. The HPI system provides sufficient water to keep the core covered. The success criteria are one-of-three charging trains supplying at least one-of-three cold legs.

FAB — Success or failure of the feed and bleed cooling given secondary cooling is unavailable. Success requires high pressure injection and one PORV to open and remove decay heat from the RCS. An operator is required to open the PORVs and the PORV block valves if they are closed. The success criteria are HPI and one-of-two PORVs open to create the bleed path

OPR-06H — This top event represents success or failure to recover offsite power within 6 hours. Success implies the operators were able to restore offsite ac power to the division buses with sufficient time to recover secondary side cooling prior to RWST depletion and recirculation sump switchover.

CSR — Success or failure of containment spray recirculation (CSR). Success requires the inside or outside containment spray pumps to take suction from the containment sump and cool the water down by running it through their respective heat exchangers. The cooled water is then sprayed into containment to lower the containment pressure and temperature. The CSR system will keep the sump water cool enough to provide a net positive suction head for the LPI pumps. The success criteria are one-of-two inside CSR pumps or one-of-two outside CSR pumps.

HPR — Success or failure of high pressure recirculation. Success requires the HPI pumps to take suction from the discharge of the LPI pumps and deliver the water to the RCS. HPR will provide long-term cooling for the reactor given the HPI system was successful in supplying early makeup water to the reactor. HPR is required if residual heat removal cannot be established. The decay heat will be removed from the containment sump by the CSR pump train heat exchangers. An operator action is required to align the LPI pump discharge to the HPI pump suction and verify that the containment sump valves are open and the RWST suction valves are closed. The success criteria are one-of-three charging pumps and one-of-two LPI trains.

D.2.4 Surry SLOCA ET

IE-SLOCA — Initiating event small LOCA. The small LOCA initiating event is defined as a steam or liquid break that exceeds normal charging makeup other than a steam generator tube rupture.

RPS — This top represents the success or failure of the reactor protection system (RPS) to insert enough negative reactivity by the control rods to shutdown the reactor.

AFW — The AFW top event represents the success or failure of auxiliary feedwater (AFW). Success or failure of the AFW system to remove decay heat via the steam generators is questioned given the isolation of the MFW system. Main feedwater is initially tripped on a low T_{ave} signal. Success implies automatic actuation and operation of the AFW system. The AFW system supplies sufficient

cooling water to at least one steam generator. The success criteria are one-of-three AFW trains supplying at least one-of-three steam generators.

HPI — This top event represents the success or failure of the high pressure injection system to provide makeup water to the RCS. Success implies automatic actuation and operation of the HPI system. The pumps take suction from the refueling water storage tank (RWST) and provide flow to the RCS cold legs. The HPI system provides sufficient water to keep the core covered. The success criteria are one-of-three HPI trains feeding at least one-of-three cold legs.

FAB — Success or failure of feed and bleed cooling given secondary cooling is unavailable is represented by this top event. Success requires one PORV to open and remove decay heat from the RCS. An operator is required to open the PORVs and the PORV block valves if they are closed. Success also requires HPI to provide flow to the RCS cold legs. The success criteria are one-of-two PORVs open to create the bleed path and one-of-three HPI trains feeding at least one-of-three cold legs.

SSCR — Success or failure recovering secondary cooling. Success implies the operator has recovered either AFW or MFW and closed any PORVs which were used for feed and bleed cooling.

SSC — Success or failure of secondary side cooldown. Success requires the operator to cooldown the RCS by opening the turbine bypass valves (TBVs) or the atmospheric dump valves (ADVs). Successful cooldown will allow alignment of the residual heat removal (RHR) system for heat removal.
Success requires either the pressurizer sprays or the PORVs to depressurize the RCS in order for the low pressure injection pumps to perform sump recirculation. The success criteria are one-of-three PORVs to open or one-of-two pressurizer spray lines.

LPI — Success or failure of the low pressure injection (LPI) system to provide makeup water to the RCS. Success implies automatic actuation and operation of the low pressure injection system once RCS pressure has been lowered to below the LPI pump shutoff head. The pumps take suction from the RWST and provide flow to the RCS cold legs. The LPI system provides sufficient water to keep the core covered. The success criteria are one-of-two LPI pump trains.

RHR — Success or failure of residual heat removal. Success implies the RCS pressure and temperature are within the requirements to allow the RCS hot leg (to RHR pump suction) suction valves to be opened and provide a suction source to the RHR pumps. The RHR heat exchangers will slowly cool down the reactor. This system requires an operator action to open the RCS hot leg valves which provide the suction source for the pumps. The success criteria are one-of-two RHR pumps providing sufficient flow through one-of-two heat exchangers.

HPR — Success or failure of high pressure recirculation. Success requires the HPI pumps to take suction from the discharge of the LPI pumps and deliver the water to the RCS. HPR will provide long-term cooling for the reactor given the HPI system was successful in supplying early makeup water to the reactor. HPR is required if residual heat removal cannot be established. The decay heat will be

removed from the containment sump by the CSR pump train heat exchangers. An operator action is required to align the LPI pump discharge to the HPI pump suction and verify that the containment sump valves are open and the RWST suction valves are closed. The success criteria are one-of-three charging pumps and one-of-two LPI trains.

LPR — Success or failure of the low pressure recirculation (LPR). Success requires the LPI pump trains to take suction from the containment sump and discharge the sump water into the RCS cold legs. The decay heat will be removed from the containment sump by the CSR pump train heat exchangers. The success criteria are one-of-two LPI pump trains.

CSR — Success or failure of containment spray recirculation (CSR). Success requires the inside or outside containment spray pumps to take suction from the containment sump and cool the water down by running it through their respective heat exchangers. The cooled water is then sprayed into containment to lower the containment pressure and temperature. The CSR system will keep the sump water cool enough to provide a net positive suction head for the LPI pumps. The success criteria are one-of-two inside CSR pumps or one-of-two outside CSR pumps.

D.2.5 Surry TRANS ET

IE-TRANS — Initiating event transient.

RPS — This top represents the success or failure of the reactor protection system (RPS) to insert enough negative reactivity by the control rods to shutdown the reactor.

AFW — The AFW top event represents the success or failure of auxiliary feedwater (AFW). Success or failure of the AFW system to remove decay heat via the steam generators is questioned given the isolation of the MFW system. Main feedwater is initially tripped on a low T_{ave} signal. Success implies automatic actuation and operation of the AFW system. The AFW system supplies sufficient cooling water to at least one steam generator. The success criteria are one-of-three AFW trains supplying at least one-of-three steam generators.

MFW — The MFW top event represents the success or failure of main feedwater (MFW). Success or failure of the MFW system to remove decay heat via the steam generators is questioned given the AFW system is unavailable. Main feedwater is initially tripped on a low T_{ave} signal; however, it can be restored given the event is not a loss of MFW. The MFW system supplies sufficient cooling water to at least one-of-three steam generators.

PORV — Success or failure of the power operated relief valves (PORVs) or safety relief valves (SRVs) in maintaining the RCS boundary integrity. Success requires that no PORVs or SRVs open, or if they open, success requires that all open PORVs/SRVs close once RCS pressure is lower than the pressure relief setpoints.

LOSC — The success or failure of RCP seal cooling from either the component cooling water or charging (CVC) systems is represented in this top event. Success

requires the CCW or CVC to provide sufficient cooling the RCPs to eliminate the potential of a RCP seal LOCA. Failure to provide cooling to the RCP seals, leads to a potential RCP seal LOCA.

HPI — This top event represents the success or failure of the high pressure injection system to provide makeup water to the RCS. Success implies automatic actuation and operation of the HPI system. The pumps take suction from the refueling water storage tank (RWST) and provide flow to the RCS cold legs. The HPI system provides sufficient water to keep the core covered. The success criteria are one-of-three HPI trains feeding at least one-of-three cold legs.

FAB — Success or failure of feed and bleed cooling given secondary cooling is unavailable is represented by this top event. Success requires one PORV to open and remove decay heat from the RCS. An operator is required to open the PORV and the PORV block valve if they are closed. Success also requires HPI to provide flow to the RCS cold legs. The success criteria are one-of-two PORVs open to create the bleed path and one-of-three HPI trains feeding at least one-of-three cold legs.

SSCR — Success or failure recovering secondary cooling. Success implies the operator has recovered either AFW or MFW and closed any PORVs which were used for feed and bleed cooling.

SSC — Success or failure of secondary side cooldown. Success requires the operator to cooldown the RCS by opening the turbine bypass valves (TBVs) or the atmospheric dump valves (ADVs). Successful cooldown will allow alignment of the residual heat removal (RHR) system for heat removal.
Success requires either the pressurizer sprays or the PORVs to depressurize the RCS in order for the low pressure injection pumps to perform sump recirculation. The success criteria are one-of-three PORVs to open or one-of-two pressurizer spray lines.

RHR — Success or failure of residual heat removal. Success implies the RCS pressure and temperature are within the requirements to allow the RCS hot leg (to RHR pump suction) suction valves to be opened and provide a suction source to the RHR pumps. The RHR heat exchangers will slowly cool down the reactor. This system requires an operator action to open the RCS hot leg valves which provide the suction source for the pumps. The success criteria are one-of-two RHR pumps providing sufficient flow through one-of-two heat exchangers.

CSR — Success or failure of containment spray recirculation (CSR). Success requires the inside or outside containment spray pumps to take suction from the containment sump and cool the water down by running it through their respective heat exchangers. The cooled water is then sprayed into containment to lower the containment pressure and temperature. The CSR system will keep the sump water cool enough to provide a net positive suction head for the LPI pumps. The success criteria are one-of-two inside CSR pumps or one-of-two outside CSR pumps.

HPR — Success or failure of high pressure recirculation. Success requires the HPI pumps to take suction from the discharge of the LPI pumps and deliver the water

to the RCS. HPR will provide long-term cooling for the reactor given the HPI system was successful in supplying early makeup water to the reactor. HPR is required if residual heat removal cannot be established. The decay heat will be removed from the containment sump by the CSR pump train heat exchangers. An operator action is required to align the LPI pump discharge to the HPI pump suction and verify that the containment sump valves are open and the RWST suction valves are closed. The success criteria are one-of-three charging pumps and one-of-two LPI trains.

LPR — Success or failure of the low pressure recirculation (LPR). Success requires the LPI pump trains to take suction from the containment sump and discharge the sump water into the RCS cold legs. The decay heat will be removed from the containment sump by the CSR pump train heat exchangers. The success criteria are one-of-two LPI pump trains.

D.3 Sequoyah ET Top System Definitions

D2.1 Sequoyah LOCHS ET

IE-LOCHS — Initiating event loss of condenser heat sink transient.

RPS — This top represents the success or failure of the reactor protection system (RPS) to insert enough negative reactivity by the control rods to shutdown the reactor.

OEP — This top event represents a conditional loss of offsite power given the transient.

AFW — This top event represents the success or failure of the auxiliary feedwater (AFW) system to remove decay heat via the steam generators. The main feedwater system will isolate given a reactor trip. This will require the use of the AFW system to provide flow to the steam generators. Success implies automatic actuation and operation of the AFW system. The AFW system supplies sufficient cooling water to the steam generators. The success criteria are one-of-three AFW trains to two-of-four steam generators.

PORV — This top represents the success or failure of the power operated relief valves. Success requires that no PORVs opened given the transient. Failure implies that the RCS pressure increased to a point that caused at least one PORV to lift and relieve RCS pressure.

This top also contains the success or failure of the PORVs to reclose. Success implies that all opened PORVs reclose once RCS pressure is lower than the relief pressure setpoints for the PORVs or the operator closes the PORV block valve(s).

LOSC — The success or failure of RCP seal cooling from either the 1A train of component cooling water or charging (CVC) systems is represented in this top event. Success requires the CCW train 1A or CVC to provide sufficient cooling to the RCPs to eliminate the potential of a RCP seal LOCA. Failure to provide cooling to the RCP seals, leads to a potential RCP seal LOCA.

HPI This top event represents the success or failure of the high pressure injection system to provide makeup water to the RCS. Success implies automatic actuation and operation of the HPI system (i.e., safety injection (SI) pumps and charging (CVC) pumps). The pumps take suction from the refueling water storage tank (RWST) and provide flow to the RCS cold legs. The HPI system provides sufficient water to keep the core covered. The success criteria are one-of-two SI trains or one-of-two CVC trains supplying at least two-of-four cold legs.

FAB Success or failure of feed and bleed cooling is represented by this top event. Feed and bleed cooling is required given secondary cooling is unavailable. Success requires two PORVs open to remove decay heat from the RCS. An operator is required to open the PORVs and the PORV block valves if they are closed. Success also requires the HPI system to provide flow to the RCS cold legs. The success criteria are two-of-two PORVs open to create the bleed path and one-of-four SI or CVC trains.

SSCR This top event represents the success or failure of recovering secondary cooling. Success implies that either AFW or MFW has been successfully recovered by an operator along with the closing of both PORVs which were used for feed and bleed cooling. This top is only questioned when feed and bleed cooling has been successful.

SSC This top represents the success or failure of secondary side cool down to the point when residual heat removal can be initiated. Success requires opening the steam generator atmospheric dump valves (ADVs) or turbine bypass valves (TBVs) to start cool down of the secondary side in order to utilize low pressure injection pumps for residual heat removal. The success criteria are three-of-four steam generator ADVs or three-of-three TBVs. Success requires either the pressurizer sprays or the PORVs to depressurize the RCS in order for the low pressure injection pumps to perform sump recirculation or residual heat removal. The success criteria are one-of-two PORVs to open or auxiliary pressurizer spray line.

RHR Success or failure of residual heat removal is represented by this top event. Success implies the RCS pressure and temperature are within the requirements to allow the RCS hot leg (to RHR pump suction) suction valves to be opened and provide a suction source to the RHR pumps. The dedicated RHR pump train heat exchangers will slowly cool down the reactor. This system requires an operator action to open the RCS hot leg valves which provide the suction source for the pumps. The success criterion is one-of-two RHR pumps providing sufficient flow through their respective heat exchangers

HPR This top event represents the success or failure of high pressure recirculation. Success requires the HPI pumps (SI and CVC pumps) to take suction from the discharge of the RHR pumps and deliver the water to the RCS. HPR will provide long-term cooling for the reactor given the HPI system was successful in supplying early makeup water to the reactor. HPR is required if residual heat removal cannot be established. The decay heat will be removed from the containment sump by the RHR pump train heat exchangers. An operator action is required to align the RHR pump discharge to the HPI pump suction and verify

that the containment sump valves are open and the RWST suction valves are closed. The success criteria are one-of-two RHR trains (and their respective heat exchangers) providing flow to one-of-four HPI trains (one-of-two SI or one-of-two CVC trains).

D2.2 Sequoyah LOMFW ET

IE-LOMFW Initiating event loss of main feedwater transient.

RPS This top represents the success or failure of the reactor protection system (RPS) to insert enough negative reactivity by the control rods to shutdown the reactor.

OEP This top event represents a conditional loss of offsite power given the transient.

AFW This top event represents the success or failure of the auxiliary feedwater (AFW) system to remove decay heat via the steam generators. The main feedwater system will isolate given a reactor trip. This will require the use of the AFW system to provide flow to the steam generators. Success implies automatic actuation and operation of the AFW system. The AFW system supplies sufficient cooling water to the steam generators. The success criteria are one-of-three AFW trains to two-of-four steam generators.

MFW Success or failure of main feedwater is represented by this top event. Main feedwater pumps trip given the initiating event; however, the MFW system could potentially be restored to provide decay heat removal depending upon the type of MFW trip (initiating event) to the steam generators. MFW is only questioned if AFW is unavailable.

PORV This top represents the success or failure of the power operated relief valves. Success requires that no PORVs opened given the transient. Failure implies that the RCS pressure increased to a point that caused at least one PORV to lift and relieve RCS pressure.

This top also contains the success or failure of the PORVs to reclose. Success implies that all opened PORVs reclose once RCS pressure is lower than the relief pressure setpoints for the PORVs or the operator closes the PORV block valve(s).

LOSC The success or failure of RCP seal cooling from either the 1A train of component cooling water or charging (CVC) systems is represented in this top event. Success requires the CCW train 1A or CVC to provide sufficient cooling to the RCPs to eliminate the potential of a RCP seal LOCA. Failure to provide cooling to the RCP seals, leads to a potential RCP seal LOCA.

HPI This top event represents the success or failure of the high pressure injection system to provide makeup water to the RCS. Success implies automatic actuation and operation of the HPI system (i.e., safety injection (SI) pumps and charging (CVC) pumps). The pumps take suction from the refueling water storage tank (RWST) and provide flow to the RCS cold legs. The HPI system provides sufficient water to keep the core covered. The success criteria are one-of-two SI trains or one-of-two CVC trains supplying at least two-of-four cold legs.

FAB — Success or failure of feed and bleed cooling is represented by this top event. Feed and bleed cooling is required given secondary cooling is unavailable. Success requires two PORVs open to remove decay heat from the RCS. An operator is required to open the PORVs and the PORV block valves if they are closed. Success also requires the HPI system to provide flow to the RCS cold legs. The success criteria are two-of-two PORVs open to create the bleed path and one-of-four SI or CVC trains.

SSCR — This top event represents the success or failure of recovering secondary cooling. Success implies that either AFW or MFW has been successfully recovered by an operator along with the closing of both PORVs which were used for feed and bleed cooling. This top is only questioned when feed and bleed cooling has been successful.

SSC — This top represents the success or failure of secondary side cool down to the point when residual heat removal can be initiated. Success requires opening the steam generator atmospheric dump valves (ADVs) or turbine bypass valves (TBVs) to start cool down of the secondary side in order to utilize low pressure injection pumps for residual heat removal. The success criteria are three-of-four steam generator ADVs or three-of-three TBVs. Success requires either the pressurizer sprays or the PORVs to depressurize the RCS in order for the low pressure injection pumps to perform sump recirculation or residual heat removal. The success criteria are one-of-two PORVs to open or auxiliary pressurizer spray line.

RHR — Success or failure of residual heat removal is represented by this top event. Success implies the RCS pressure and temperature are within the requirements to allow the RCS hot leg (to RHR pump suction) suction valves to be opened and provide a suction source to the RHR pumps. The dedicated RHR pump train heat exchangers will slowly cool down the reactor. This system requires an operator action to open the RCS hot leg valves which provide the suction source for the pumps. The success criterion is one-of-two RHR pumps providing sufficient flow through their respective heat exchangers

HPR — This top event represents the success or failure of high pressure recirculation. Success requires the HPI pumps (SI and CVC pumps) to take suction from the discharge of the RHR pumps and deliver the water to the RCS. HPR will provide long-term cooling for the reactor given the HPI system was successful in supplying early makeup water to the reactor. HPR is required if residual heat removal cannot be established. The decay heat will be removed from the containment sump by the RHR pump train heat exchangers. An operator action is required to align the RHR pump discharge to the HPI pump suction and verify that the containment sump valves are open and the RWST suction valves are closed. The success criteria are one-of-two RHR trains (and their respective heat exchangers) providing flow to one-of-four HPI trains (one-of-two SI or one-of-two CVC trains).

D2.3 Sequoyah LOOPGR ET

IE-LOOPGR Initiating event loss of offsite power (grid-related).

RPS This top represents the success or failure of the reactor protection system (RPS) to insert enough negative reactivity by the control rods to shutdown the reactor.

EPS Success or failure of onsite emergency power (i.e., diesel generators) is represented by this top event. Success implies that at least one onsite emergency diesel generator is providing sufficient ac power to its division bus.

AFW This top event represents the success or failure of the auxiliary feedwater (AFW) system to remove decay heat via the steam generators. The main feedwater system will isolate given a reactor trip. This will require the use of the AFW system to provide flow to the steam generators. Success implies automatic actuation and operation of the AFW system. The AFW system supplies sufficient cooling water to the steam generators. The success criteria are one-of-three AFW trains to two-of-four steam generators.

PORV This top represents the success or failure of the power operated relief valves. Success requires that no PORVs opened given the transient. Failure implies that the RCS pressure increased to a point that caused at least one PORV to lift and relieve RCS pressure.

This top also contains the success or failure of the PORVs to reclose. Success implies that all opened PORVs reclose once RCS pressure is lower than the relief pressure setpoints for the PORVs or the operator closes the PORV block valve(s).

LOSC The success or failure of RCP seal cooling from either the 1A train of component cooling water or charging (CVC) systems is represented in this top event. Success requires the CCW train 1A or CVC to provide sufficient cooling to the RCPs to eliminate the potential of a RCP seal LOCA. Failure to provide cooling to the RCP seals, leads to a potential RCP seal LOCA.

HPI This top event represents the success or failure of the high pressure injection system to provide makeup water to the RCS. Success implies automatic actuation and operation of the HPI system (i.e., safety injection (SI) pumps and charging (CVC) pumps). The pumps take suction from the refueling water storage tank (RWST) and provide flow to the RCS cold legs. The HPI system provides sufficient water to keep the core covered. The success criteria are one-of-two SI trains or one-of-two CVC trains supplying at least two-of-four cold legs.

FAB Success or failure of feed and bleed cooling is represented by this top event. Feed and bleed cooling is required given secondary cooling is unavailable. Success requires two PORVs open to remove decay heat from the RCS. An operator is required to open the PORVs and the PORV block valves if they are closed. Success also requires the HPI system to provide flow to the RCS cold legs. The success criteria are two-of-two PORVs open to create the bleed path and one-of-four SI or CVC trains.

OPR-02H This top event represents success or failure to recover offsite power within 2 hours. Success implies the operators were able to restore offsite ac power to the division buses with sufficient time to allow for RCS depressurization to the RHR initiation conditions prior to RWST depletion.

OPR-06H This top event represents success or failure to recover offsite power within 6 hours. Success implies the operators were able to restore offsite ac power to the division buses with sufficient time to recover secondary side cooling prior to RWST depletion and recirculation sump switchover.

SSC This top represents the success or failure of secondary side cool down to the point when residual heat removal can be initiated. Success requires opening the steam generator atmospheric dump valves (ADVs) or turbine bypass valves (TBVs) to start cool down of the secondary side in order to utilize low pressure injection pumps for residual heat removal. The success criteria are three-of-four steam generator ADVs or three-of-three TBVs.

Success requires either the pressurizer sprays or the PORVs to depressurize the RCS in order for the low pressure injection pumps to perform sump recirculation or residual heat removal. The success criteria are one-of-two PORVs to open or auxiliary pressurizer spray line.

RHR Success or failure of residual heat removal is represented by this top event. Success implies the RCS pressure and temperature are within the requirements to allow the RCS hot leg (to RHR pump suction) suction valves to be opened and provide a suction source to the RHR pumps. The dedicated RHR pump train heat exchangers will slowly cool down the reactor. This system requires an operator action to open the RCS hot leg valves which provide the suction source for the pumps. The success criterion is one-of-two RHR pumps providing sufficient flow through their respective heat exchangers

HPR This top event represents the success or failure of high pressure recirculation. Success requires the HPI pumps (SI and CVC pumps) to take suction from the discharge of the RHR pumps and deliver the water to the RCS. HPR will provide long-term cooling for the reactor given the HPI system was successful in supplying early makeup water to the reactor. HPR is required if residual heat removal cannot be established. The decay heat will be removed from the containment sump by the RHR pump train heat exchangers. An operator action is required to align the RHR pump discharge to the HPI pump suction and verify that the containment sump valves are open and the RWST suction valves are closed. The success criteria are one-of-two RHR trains (and their respective heat exchangers) providing flow to one-of-four HPI trains (one-of-two SI or one-of-two CVC trains).

D.2.4 Sequoyah VSLOCA ET

IE-VSLOCA Initiating event very small LOCA. The very small LOCA initiating event is defined as a steam or liquid break that exceeds normal charging makeup other than a steam generator tube rupture.

RPS This top represents the success or failure of the reactor protection system (RPS) to insert enough negative reactivity by the control rods to shutdown the reactor.

FW This top event represents the success or failure of the feedwater system (AFW and MFW). Main feedwater is initially tripped following a reactor trip. The MFW system can be restored for decay heat removal via the steam generators by an operator restoring MFW. MFW is only questioned if AFW is unavailable.

Auxiliary feedwater (AFW) system is used to remove decay heat via the steam generators given MFW is not available. The main feedwater system will isolate given a reactor trip. This will require the use of the AFW system to provide flow to the steam generators. Success implies automatic actuation and operation of the AFW system. The AFW system supplies sufficient cooling water to the steam generators. The success criteria are one-of-three AFW trains to two-of-four steam generators.

HPI-CHGINJ This top event represents the success or failure of the charging system to provide makeup water to the RCS. Success implies automatic actuation and operation of the charging (CVC) pumps. The pumps take suction from the refueling water storage tank (RWST) and provide flow to the RCS cold legs. The charging system provides sufficient water to keep the core covered. The success criteria are one-of-two CVC trains supplying at least two-of-four cold legs.

FAB Success or failure of feed and bleed cooling is represented by this top event. Feed and bleed cooling is required given secondary cooling is unavailable. Success requires two PORVs open to remove decay heat from the RCS. An operator is required to open the PORVs and the PORV block valves if they are closed. Success also requires the HPI system to provide flow to the RCS cold legs. The success criteria are two-of-two PORVs.

SSCR This top event represents the success or failure of recovering secondary cooling. Success implies that either AFW or MFW has been successfully recovered by an operator along with the closing of both PORVs which were used for feed and bleed cooling. This top is only questioned when feed and bleed cooling has been successful.

SSC This top represents the success or failure of secondary side cool down to the point when residual heat removal can be initiated. Success requires opening the steam generator atmospheric dump valves (ADVs) or turbine bypass valves (TBVs) to start cool down of the secondary side in order to utilize low pressure injection pumps for residual heat removal. The success criteria are three-of-four steam generator ADVs or three-of-three TBVs. Success requires either the pressurizer sprays or the PORVs to depressurize the RCS in order for the low pressure injection pumps to perform sump recirculation or residual heat removal. The success criteria are one-of-two PORVs to open or auxiliary pressurizer spray line.

LPI This top event represents the success or failure of the low pressure injection system to provide makeup water to the RCS. Success implies automatic actuation and operation of the low pressure injection system once RCS pressure

has been lowered to below the LPI pump shutoff head. The pumps take suction from the RWST and provide flow to the RCS cold legs. The LPI system provides sufficient water to keep the core covered. The success criteria are one-of-two LPI trains.

RHR — Success or failure of residual heat removal is represented by this top event. Success implies the RCS pressure and temperature are within the requirements to allow the RCS hot leg (to LPI pump suction) suction valves to be opened and provide a suction source to the LPI pumps. The RHR heat exchangers will slowly cool down the reactor. This system requires an operator action to open the RCS hot leg valves which provide the suction source for the pumps and align the pump discharge through the RHR heat exchangers. The success criteria are one-of-two LPI pumps providing sufficient flow through one-of-two RHR heat exchangers.

LPR — The LPR top event represents the success or failure of the low pressure injection system to provide sump recirculation to the RCS. Success requires an operator action to initiate sump recirculation once RCS pressure has been lowered to below the LPI pump shutoff head. The pumps take suction from the containment sump and pass the water through the RHR heat exchangers to slowly cool down the reactor. The success criteria are one-of-two LPI trains and one-of-two heat exchangers.

HPR — This top event represents the success or failure of high pressure recirculation. Success requires the HPI pumps (SI and CVC pumps) to take suction from the discharge of the RHR pumps and deliver the water to the RCS. HPR will provide long-term cooling for the reactor given the HPI system was successful in supplying early makeup water to the reactor. HPR is required if residual heat removal cannot be established. The decay heat will be removed from the containment sump by the RHR pump train heat exchangers. An operator action is required to align the RHR pump discharge to the HPI pump suction and verify that the containment sump valves are open and the RWST suction valves are closed. The success criteria are one-of-two RHR trains (and their respective heat exchangers) providing flow to one-of-four HPI trains (one-of-two SI or one-of-two CVC trains).

RFL1 — This top event represents the success or failure of RWST refill. Success requires an operator to refill the RWST using the primary makeup pumps.

D.2.5 Sequoyah TRANS ET

IE-TRANS — Initiating event transient.

RPS — This top represents the success or failure of the reactor protection system (RPS) to insert enough negative reactivity by the control rods to shutdown the reactor.

OEP — This top event represents a conditional loss of offsite power given the transient.

AFW — This top event represents the success or failure of the auxiliary feedwater (AFW) system to remove decay heat via the steam generators. The main feedwater system will isolate given a reactor trip. This will require the use of the AFW

system to provide flow to the steam generators. Success implies automatic actuation and operation of the AFW system. The AFW system supplies sufficient cooling water to the steam generators. The success criteria are one-of-three AFW trains to two-of-four steam generators.

MFW — Main feedwater is initially tripped following a reactor trip. The MFW system can be restored for decay heat removal via the steam generators by an operator restoring MFW. MFW is only questioned if AFW is unavailable.

PORV — This top represents the success or failure of the power operated relief valves. Success requires that no PORVs opened given the transient. Failure implies that the RCS pressure increased to a point that caused at least one PORV to lift and relieve RCS pressure.

This top also contains the success or failure of the PORVs to reclose. Success implies that all opened PORVs reclose once RCS pressure is lower than the relief pressure setpoints for the PORVs or the operator closes the PORV block valve(s).

LOSC — The success or failure of RCP seal cooling from either the 1A train of component cooling water or charging (CVC) systems is represented in this top event. Success requires the CCW train 1A or CVC to provide sufficient cooling to the RCPs to eliminate the potential of a RCP seal LOCA. Failure to provide cooling to the RCP seals, leads to a potential RCP seal LOCA.

HPI — This top event represents the success or failure of the high pressure injection system to provide makeup water to the RCS. Success implies automatic actuation and operation of the HPI system (i.e., safety injection (SI) pumps and charging (CVC) pumps). The pumps take suction from the refueling water storage tank (RWST) and provide flow to the RCS cold legs. The HPI system provides sufficient water to keep the core covered. The success criteria are one-of-two SI trains or one-of-two CVC trains supplying at least two-of-four cold legs.

FAB — Success or failure of feed and bleed cooling is represented by this top event. Feed and bleed cooling is required given secondary cooling is unavailable. Success requires two-of-two PORVs open to remove decay heat from the RCS. An operator is required to open the PORVs and the PORV block valves if they are closed. Success also requires the HPI system to provide flow to the RCS cold legs. The success criteria are two-of-two PORVs open to create the bleed path and one-of-four SI or CVC trains.

SSCR — This top event represents the success or failure of recovering secondary cooling. Success implies that either AFW or MFW has been successfully recovered by an operator along with the closing of both PORVs which were used for feed and bleed cooling. This top is only questioned when feed and bleed cooling has been successful.

SSC — This top represents the success or failure of secondary side cool down to the point when residual heat removal can be initiated. Success requires opening the steam generator atmospheric dump valves (ADVs) or turbine bypass valves

(TBVs) to start cool down of the secondary side in order to utilize low pressure injection pumps for residual heat removal. The success criteria are three-of-four steam generator ADVs or three-of-three TBVs. Success requires either the pressurizer sprays or the PORVs to depressurize the RCS in order for the low pressure injection pumps to perform sump recirculation or residual heat removal. The success criteria are one-of-two PORVs to open or auxiliary pressurizer spray line.

RHR — Success or failure of residual heat removal is represented by this top event. Success implies the RCS pressure and temperature are within the requirements to allow the RCS hot leg (to RHR pump suction) suction valves to be opened and provide a suction source to the RHR pumps. The dedicated RHR pump train heat exchangers will slowly cool down the reactor. This system requires an operator action to open the RCS hot leg valves which provide the suction source for the pumps. The success criterion is one-of-two RHR pumps providing sufficient flow through their respective heat exchangers

HPR — This top event represents the success or failure of high pressure recirculation. Success requires the HPI pumps (SI and CVC pumps) to take suction from the discharge of the RHR pumps and deliver the water to the RCS. HPR will provide long-term cooling for the reactor given the HPI system was successful in supplying early makeup water to the reactor. HPR is required if residual heat removal cannot be established. The decay heat will be removed from the containment sump by the RHR pump train heat exchangers. An operator action is required to align the RHR pump discharge to the HPI pump suction and verify that the containment sump valves are open and the RWST suction valves are closed. The success criteria are one-of-two RHR trains (and their respective heat exchangers) providing flow to one-of-four HPI trains (one-of-two SI or one-of-two CVC trains).

APPENDIX E MODIFIED HEPS USING SPAR HRA

E.1 Peach Bottom Modified HEPs using SPAR HRA

E.1.1 MU6 (Case 1); MA6 (Case1, Case 3, Case 5)

IAS-XHE-XM-ALTR: Operator Fails to Start/Control Feedwater Injection

Performance Shaping Factors (PSFs)	*PSF Level for Diagnosis*	*PSF Multiplier for Diagnosis*	*PSF Level for Action*	*PSF Multiplier for Action*
Available Time		--	Nominal Time	1
Stress		--	High	2
Complexity		--	Moderately Complex	2
Experience/Training		--	Nominal	1
Procedures		--	Nominal	1
Ergonomics/HMI		--	Nominal	1
Fitness for Duty		--	Nominal	1
Work Processes		--	Nominal	1
Subtotal HEP	Diagnosis HEP: 0.000E+00		Action HEP: 4.000E-03	
Total Modified HEP: 4.000E-03				

MFW-XHE-XO-ERROR: Operator Fails to Start/Control Feedwater Injection

Performance Shaping Factors (PSFs)	*PSF Level for Diagnosis*	*PSF Multiplier for Diagnosis*	*PSF Level for Action*	*PSF Multiplier for Action*
Available Time		--	Barely Enough	10
Stress		--	Nominal Time	1
Complexity		--	Nominal	1
Experience/Training		--	Low	3
Procedures		--	Nominal	1
Ergonomics/HMI		--	Nominal	1
Fitness for Duty		--	Nominal	1
Work Processes		--	Nominal	1
Subtotal HEP	Diagnosis HEP: 0.000E+00		Action HEP: 3.000E-02	
Total Modified HEP: 3.000E-02				

RCI-XHE-XL-RSTRT: Operator Fails to Recover RCIC (Failure to Restart)

- It is assumed that operator would not be able to perform this action in this scenario.

E.1.2 MU6 (Case 2); MA6 (Case 2, Case 4, Case 6)

ADS-XHE-XM-MDEPR: Operator Fails to Depressurize the Reactor

Performance Shaping Factors (PSFs)	*PSF Level for Diagnosis*	*PSF Multiplier for Diagnosis*	*PSF Level for Action*	*PSF Multiplier for Action*
Available Time	Nominal time	1	Nominal time	1
Stress	High	2	High	2
Complexity	Nominal	1	Nominal	1
Experience/Training	High	0.5	High	0.5
Procedures	Nominal	1	Nominal	1
Ergonomics/HMI	Nominal	1	Nominal	1
Fitness for Duty	Nominal	1	Nominal	1
Work Processes	Nominal	1	Poor	5
Subtotal HEP:	Diagnosis HEP:1.000E-02		Action HEP: 5.000E-03	
Total Modified HEP: 1.500E-02				

HCI-XHE-XO-ERROR: Operator Fails to Start/Control HPCI Injection

Performance Shaping Factors (PSFs)	*PSF Level for Diagnosis*	*PSF Multiplier for Diagnosis*	*PSF Level for Action*	*PSF Multiplier for Action*
Available Time		--	Nominal time	1
Stress		--	high	2
Complexity		--	moderately complex	2
Experience/Training		--	Nominal	1
Procedures		--	Nominal	1
Ergonomics/HMI		--	Nominal	1
Fitness for Duty		--	Nominal	1
Work Processes		--	Poor	5
Subtotal HEP	Diagnosis HEP: 0.000E+00		Action HEP: 1.963E-02	
Total Modified HEP: 1.963E-02				

HCI-XHE-XO-ERROR1: Dependent human action: Operator Fails to Start/Control HPCI Injection; Operator Fails to Start/Control RCIC Injection

Performance Shaping Factors (PSFs)	*PSF Level for Diagnosis*	*PSF Multiplier for Diagnosis*	*PSF Level for Action*	*PSF Multiplier for Action*
Available Time		--	Nominal time	1
Stress		--	high	2
Complexity		--	Moderately complex	2
Experience/Training		--	Nominal	1
Procedures		--	Nominal	1
Ergonomics/HMI		--	Nominal	1
Fitness for Duty		--	Nominal	1
Work Processes		--	Poor	5
Subtotal HEP	Diagnosis HEP: 0.000E+00	Action HEP: 1.963E-02		
Dependency is modeled.			Dep=(1+6*P)/7	Moderate Dependence, Same Crew, Not Close in Time, Same Location, Additional Cues
Total Modified HEP: 1.597E-01				

HPI-XHE-XO-ERROR: Operator Fails to Start/Control High Pressure Injection

Performance Shaping Factors (PSFs)	*PSF Level for Diagnosis*	*PSF Multiplier for Diagnosis*	*PSF Level for Action*	*PSF Multiplier for Action*
Available Time		--	Nominal time	1
Stress		--	High	2
Complexity		--	Moderately Complex	2
Experience/Training		--	Nominal	1
Procedures		--	Nominal	1
Ergonomics/HMI		--	Nominal	1
Fitness for Duty		--	Nominal	1
Work Processes		--	Poor	5
Subtotal HEP	Diagnosis HEP: 0.000E+00		Action HEP: 1.963E-02	
Total Modified HEP: 1.963E-02				

LPI-XHE-XM-ERROR: Operator Fails to Control Low Pressure Injection

Performance Shaping Factors (PSFs)	*PSF Level for Diagnosis*	*PSF Multiplier for Diagnosis*	*PSF Level for Action*	*PSF Multiplier for Action*
Available Time		--	Nominal time	1
Stress		--	High	2
Complexity		--	Highly Complex	5
Experience/Training		--	High	0.5
Procedures		--	Nominal	1
Ergonomics/HMI		--	Nominal	1
Fitness for Duty		--	Nominal	1
Work Processes		--	Poor	2
Subtotal HEP	Diagnosis HEP: 0.000E+00		Action HEP: 9.911E-03	
Total Modified HEP: 9.911E-03				

MFW-XHE-XO-ERROR: Operator Fails to Start/Control Feedwater Injection

Performance Shaping Factors (PSFs)	*PSF Level for Diagnosis*	*PSF Multiplier for Diagnosis*	*PSF Level for Action*	*PSF Multiplier for Action*
Available Time		--	Nominal time	1
Stress		--	High	2
Complexity		--	Highly Complex	5
Experience/Training		--	Nominal	1
Procedures		--	Nominal	1
Ergonomics/HMI		--	Nominal	1
Fitness for Duty		--	Nominal	1
Work Processes		--	Normal	1
Subtotal HEP	Diagnosis HEP: 0.000E+00		Action HEP: 3.000E-02	
Total Modified HEP: 3.000E-02				

PCS-XHE-XO-ERROR: Operator Fails to Maintain Feedwater Injection

Performance Shaping Factors (PSFs)	*PSF Level for Diagnosis*	*PSF Multiplier for Diagnosis*	*PSF Level for Action*	*PSF Multiplier for Action*
Available Time		--	Barely Enough Time	10
Stress		--	Nominal	1
Complexity		--	Nominal	1
Experience/Training		--	Low	3
Procedures		--	Nominal	1
Ergonomics/HMI		--	Nominal	1
Fitness for Duty		--	Nominal	1
Work Processes		--	Nominal	1
Subtotal HEP	Diagnosis HEP: 0.000E+00		Action HEP: 3.000E-02	
Total Modified HEP: 3.000E-02				

RCI-XHE-XO-ERROR: Operator Fails to Start/Control RCIC Injection

Performance Shaping Factors (PSFs)	*PSF Level for Diagnosis*	*PSF Multiplier for Diagnosis*	*PSF Level for Action*	*PSF Multiplier for Action*
Available Time		--	Nominal time	1
Stress		--	High	2
Complexity		--	Moderately Complex	2
Experience/Training		--	High	0.5
Procedures		--	Nominal	1
Ergonomics/HMI		--	Nominal	1
Fitness for Duty		--	Nominal	1
Work Processes		--	Poor	5
Subtotal HEP	Diagnosis HEP: 0.000E+00		Action HEP: 9.911E-03	
Total Modified HEP: 9.911E-03				

E.2 Surry Modified HEPs Using SPAR HRA

E.2.1 SU4.1 (Case 1); SA4.1 (Case 1, Case 3, Case 5)

CCW-XHE-XM-HTXB: Operator Fails to Open CCW Train B Heat Exchanger Valves

Performance Shaping Factors (PSFs)	*PSF Level for Diagnosis*	*PSF Multiplier for Diagnosis*	*PSF Level for Action*	*PSF Multiplier for Action*
Available Time		--	Barely Enough Time	10
Stress		--	Nominal	1
Complexity		--	Nominal	1
Experience/Training		--	Nominal	1
Procedures		--	Nominal	1
Ergonomics/HMI		--	Nominal	1
Fitness for Duty		--	Nominal	1
Work Processes		--	Poor	5
Subtotal HEP	Diagnosis HEP: 0.000E+00		Action HEP: 5.00E-02	
Total Modified HEP: 5.00E-02				

ISL-XHE-XD-DIAG: Operators Fails to Diagnose ISLOCA

Performance Shaping Factors (PSFs)	*PSF Level for Diagnosis*	*PSF Multiplier for Diagnosis*	*PSF Level for Action*	*PSF Multiplier for Action*
Available Time	Nominal	1		--
Stress	High	2		--
Complexity	Moderately Complex	2		--
Experience/Training	Low	3		--
Procedures	Nominal	1		--
Ergonomics/HMI	Nominal	1		--
Fitness for Duty	Nominal	1		--
Work Processes	Nominal	1		--
Subtotal HEP	Diagnosis HEP: 2.878E-02		Action HEP: 0.000E-00	
Total Modified HEP: 2.878E-02				

OPR-XHE-XE-SGTR: Operator Fails to Diagnose SGTR and Start 1-E-3 SGTR Step 3 Isolate Ruptured SG

Performance Shaping Factors (PSFs)	*PSF Level for Diagnosis*	*PSF Multiplier for Diagnosis*	*PSF Level for Action*	*PSF Multiplier for Action*
Available Time	Nominal	1	Nominal	1
Stress	High	2	High	2
Complexity	Moderately Complex	2	Moderately Complex	2
Experience/Training	High	0.5	Nominal	1
Procedures		1	Nominal	1
Ergonomics/HMI		1	Nominal	1
Fitness for Duty		1	Nominal	1
Work Processes		1	Nominal	1
Subtotal HEP	Diagnosis HEP: 2.000E-02		Action HEP: 4.000E-3	
Total Modified HEP: 2.380E-02				

OPR-XHE-XM-TRIP: Operator Fails to Trip the Reactor Coolant Pumps

Performance Shaping Factors (PSFs)	*PSF Level for Diagnosis*	*PSF Multiplier for Diagnosis*	*PSF Level for Action*	*PSF Multiplier for Action*
Available Time		--	Barely Enough Time	10
Stress		--	High	2
Complexity		--	Nominal	1
Experience/Training		--	Nominal	1
Procedures		--	Nominal	1
Ergonomics/HMI		--	Nominal	1
Fitness for Duty		--	Nominal	1
Work Processes		--	Nominal	1
Subtotal HEP	Diagnosis HEP: 0.000E+00		Action HEP: 2.000E-02	
Total Modified HEP: 2.000E-02				

PPR-XHE-XM-BLK: Operator Fails to Close Block Valve

Performance Shaping Factors (PSFs)	*PSF Level for Diagnosis*	*PSF Multiplier for Diagnosis*	*PSF Level for Action*	*PSF Multiplier for Action*
Available Time	Nominal	1	Nominal	1
Stress	High	2	High	2
Complexity	Moderately Complex	2	Moderately Complex	2
Experience/Training	High	0.5	Nominal	1
Procedures		1	Nominal	1
Ergonomics/HMI		1	Nominal	1
Fitness for Duty		1	Nominal	1
Work Processes		1	Nominal	1
Subtotal HEP	Diagnosis HEP: 2.000E-02		Action HEP: 4.000E-3	
Total Modified HEP: 2.380E-02				

SWS-XHE-XL-SWSUP: Operator Fails to Recover Service Water to CCW Heat Exchangers

Performance Shaping Factors (PSFs)	PSF Level for Diagnosis	PSF Multiplier for Diagnosis	PSF Level for Action	PSF Multiplier for Action
Available Time	Nominal	1	Barely Enough Time	10
Stress	Nominal	1	Nominal	1
Complexity	Obvious Diagnosis	0.1	Nominal	1
Experience/Training	Nominal	1	Nominal	1
Procedures	Nominal	1	Nominal	1
Ergonomics/HMI	Nominal	1	Nominal	1
Fitness for Duty	Nominal	1	Nominal	1
Work Processes	Nominal	1	Poor	5
Subtotal HEP	Diagnosis HEP: 1.000E-3		Action HEP: 5.000E 02	
Total Modified HEP: 5.10E 02				

SWS-XHE-XM-MKUP: Operator Fails to Start the Backup SWS Pumps

Performance Shaping Factors (PSFs)	PSF Level for Diagnosis	PSF Multiplier for Diagnosis	PSF Level for Action	PSF Multiplier for Action
Available Time	Nominal	1	Nominal	1
Stress	Very High	3	Nominal	1
Complexity	Very Complex	3	Nominal	1
Experience/Training	Nominal	1	Nominal	1
Procedures	Nominal	1	Nominal	1
Ergonomics/HMI	Nominal	1	Nominal	1
Fitness for Duty	Nominal	1	Nominal	1
Work Processes	Nominal	1	Nominal	1
Subtotal HEP	Diagnosis HEP: 9.000E-2		Action HEP: 1.000E 03	
Total Modified HEP: 9.100E-02				

E.2.2 SU4.1 (Case 2); SA4.1 (Case 2, Case 4, Case 6)

AFW-XHE-XM-XTIE: Operator Fails to Initiate AFW Cross-connect

Performance Shaping Factors (PSFs)	*PSF Level for Diagnosis*	*PSF Multiplier for Diagnosis*	*PSF Level for Action*	*PSF Multiplier for Action*
Available Time		--	Just enough time	1
Stress		--	Extreme	5
Complexity		--	Highly complex	5
Experience/Training		--	Low	3
Procedures		--	Nominal	1
Ergonomics/HMI		--	Nominal	1
Fitness for Duty		--	Nominal	1
Work Processes		--	Poor	5
Dependency is not modeled				
Subtotal HEP	Diagnosis HEP: 0.000E+00		Action HEP: 7.896E-01	
Total Modified HEP: 7.896E-01				

CCW-XHE-XM-HTXB: Operator Fails to Open CCW Train B Heat Exchanger Valves

Performance Shaping Factors (PSFs)	*PSF Level for Diagnosis*	*PSF Multiplier for Diagnosis*	*PSF Level for Action*	*PSF Multiplier for Action*
Available Time		--	Barely Enough Time	10
Stress		--	Nominal	1
Complexity		--	Nominal	1
Experience/Training		--	Nominal	1
Procedures		--	Nominal	1
Ergonomics/HMI		--	Nominal	1
Fitness for Duty		--	Nominal	1
Work Processes		--	Poor	5
Subtotal HEP	Diagnosis HEP: 0.000E+00		Action HEP: 5.00E-02	
Total Modified HEP: 5.00E-02				

CDS-XHE-XM-LVL: Operator Fails to Maintain Hotwell Level

Performance Shaping Factors (PSFs)	*PSF Level for Diagnosis*	*PSF Multiplier for Diagnosis*	*PSF Level for Action*	*PSF Multiplier for Action*
Available Time		--	Barely Enough Time	10
Stress		--	High	2
Complexity		--	Nominal	1
Experience/Training		--	Nominal	1
Procedures		--	Nominal	1
Ergonomics/HMI		--	Nominal	1
Fitness for Duty		--	Nominal	1
Work Processes		--	Nominal	1
Subtotal HEP	Diagnosis HEP: 0.000E+00		Action HEP: 2.000E-02	
Total Modified HEP: 2.000E-02				

CHW-XHE-XE-BCKUP: Operator Fails to Align Backup Chilled Water Supply

Performance Shaping Factors (PSFs)	*PSF Level for Diagnosis*	*PSF Multiplier for Diagnosis*	*PSF Level for Action*	*PSF Multiplier for Action*
Available Time		--	Barely Enough Time	10
Stress		--	high	2
Complexity		--	Nominal	1
Experience/Training		--	Nominal	1
Procedures		--	Nominal	1
Ergonomics/HMI		--	Nominal	1
Fitness for Duty		--	Nominal	1
Work Processes		--	Nominal	1
Subtotal HEP	Diagnosis HEP: 0.000E+00		Action HEP: 2.000E-02	
Total Modified HEP: 2.000E-02				

HPI-XHE-XL-RWST2: Operator Fails to Align HPI Suction to the U2 RWST

Performance Shaping Factors (PSFs)	*PSF Level for Diagnosis*	*PSF Multiplier for Diagnosis*	*PSF Level for Action*	*PSF Multiplier for Action*
Available Time		--	Just enough time	10
Stress		--	Extreme	5
Complexity		--	Highly complex	5
Experience/Training		--	Nominal	1
Procedures		--	Nominal	1
Ergonomics/HMI		--	Nominal	1
Fitness for Duty		--	Nominal	1
Work Processes		--	Poor	5
Subtotal HEP	Diagnosis HEP: 0.000E+00		Action HEP: 5.558E-01	
Total Modified HEP: 5.558E-01				

HPI-XHE-XM-ALT: Operator Fails to Establish Alternate HPI Injection Path

Performance Shaping Factors (PSFs)	*PSF Level for Diagnosis*	*PSF Multiplier for Diagnosis*	*PSF Level for Action*	*PSF Multiplier for Action*
Available Time		--	Nominal time	1.000E+00
Stress		--	High	2.000E+00
Complexity		--	moderately complex	2.000E+00
Experience/Training		--	Nominal	1.000E+00
Procedures		--	Nominal	1.000E+00
Ergonomics/HMI		--	Nominal	1.000E+00
Fitness for Duty		--	Nominal	1.000E+00
Work Processes		--	Poor	5.000E+00
Subtotal HEP	Diagnosis HEP: 0.000E+00		Action HEP: 1.963E-02	
Total Modified HEP: 2.000E-02				

HPI-XHE-XM-FB: Operator Fails to Initiate Feed and Bleed Cooling

Performance Shaping Factors (PSFs)	*PSF Level for Diagnosis*	*PSF Multiplier for Diagnosis*	*PSF Level for Action*	*PSF Multiplier for Action*
Available Time		--	Just enough time	1.000E+01
Stress		--	Extreme	5.000E+00
Complexity		--	Highly complex	5.000E+00
Experience/Training		--	Nominal	1.000E+00
Procedures		--	Nominal	1.000E+00
Ergonomics/HMI		--	Nominal	1.000E+00
Fitness for Duty		--	Nominal	1.000E+00
Work Processes		--	Poor	5.000E+00
Subtotal HEP	Diagnosis HEP: 0.000E+00		Action HEP: 5.558E-01	
Total Modified HEP: 5.558E-01				

HPI-XHE-XM-FB1: Operator Fails to Initiate Feed and Bleed Cooling (depend)

Performance Shaping Factors (PSFs)	*PSF Level for Diagnosis*	*PSF Multiplier for Diagnosis*	*PSF Level for Action*	*PSF Multiplier for Action*
Available Time		--	Just enough time	1.000E+01
Stress		--	Extreme	5.000E+00
Complexity		--	Highly complex	5.000E+00
Experience/Training		--	Nominal	1.000E+00
Procedures		--	Nominal	1.000E+00
Ergonomics/HMI		--	Nominal	1.000E+00
Fitness for Duty		--	Nominal	1.000E+00
Work Processes		--	Poor	5.000E+00
Dependency is modeled.			Dep=(1+6*P)/7	Moderate Dependence, Different Crew, Not Close in Time, Different Location, Additional Cues
Subtotal HEP	Diagnosis HEP: 0.000E+00		Action HEP: 5.78E-01	
Total Modified HEP: 5.78E-01				

HPI-XHE-XM-THRTL: Operator Fails to Control/Terminate Safety Injection Flow

Performance Shaping Factors (PSFs)	*PSF Level for Diagnosis*	*PSF Multiplier for Diagnosis*	*PSF Level for Action*	*PSF Multiplier for Action*
Available Time		--	Barely Enough Time	10
Stress		--	High	2
Complexity		--	Nominal	1
Experience/Training		--	Nominal	1
Procedures		--	Nominal	1
Ergonomics/HMI		--	Nominal	1
Fitness for Duty		--	Nominal	1
Work Processes		--	Nominal	1
Subtotal HEP	Diagnosis HEP: 0.000E+00		Action HEP: 2.000E-02	
Total Modified HEP: 2.000E-02				

HPI-XHE-XM-MDP1C: Operator Fails to Start and Align HPI MDP 1C

Performance Shaping Factors (PSFs)	*PSF Level for Diagnosis*	*PSF Multiplier for Diagnosis*	*PSF Level for Action*	*PSF Multiplier for Action*
Available Time		0.000E+00	Just enough time	1.000E+01
Stress		0.000E+00	Extreme	5.000E+00
Complexity		0.000E+00	Moderately complex	2.000E+00
Experience/Training		0.000E+00	Nominal	1.000E+00
Procedures		0.000E+00	Nominal	1.000E+00
Ergonomics/HMI		0.000E+00	Nominal	1.000E+00
Fitness for Duty		0.000E+00	Nominal	1.000E+00
Work Processes		0.000E+00	Poor	5.000E+00
Subtotal HEP	Diagnosis HEP: 0.000E+00		Action HEP: 3.336E-01	
Total Modified HEP: 3.336E-01				

ISL-XHE-XD-DIAG: Operators Fails to Diagnose ISLOCA

Performance Shaping Factors (PSFs)	*PSF Level for Diagnosis*	*PSF Multiplier for Diagnosis*	*PSF Level for Action*	*PSF Multiplier for Action*
Available Time	Nominal	1		--
Stress	High	2		--
Complexity	Moderately Complex	2		--
Experience/Training	Low	3		--
Procedures	Nominal	1		--
Ergonomics/HMI	Nominal	1		--
Fitness for Duty	Nominal	1		--
Work Processes	Nominal	1		--
Subtotal HEP	Diagnosis HEP: 2.878E-02		Action HEP: 0.000E-00	
Total Modified HEP: 2.878E-02				

OPR-XHE-XE-SGTR: Operator Fails to Diagnose SGTR and Start 1-E-3 SGTR Step 3 Isolate Ruptured SG

Performance Shaping Factors (PSFs)	*PSF Level for Diagnosis*	*PSF Multiplier for Diagnosis*	*PSF Level for Action*	*PSF Multiplier for Action*
Available Time	Nominal	1	Nominal	1
Stress	High	2	High	2
Complexity	Moderately Complex	2	Moderately Complex	2
Experience/Training	High	0.5	Nominal	1
Procedures		1	Nominal	1
Ergonomics/HMI		1	Nominal	1
Fitness for Duty		1	Nominal	1
Work Processes		1	Nominal	1
Subtotal HEP	Diagnosis HEP: 2.000E-02		Action HEP: 4.000E-3	
Total Modified HEP: 2.380E-02				

OPR-XHE-XM-TRIP: Operator Fails to Trip the Reactor Coolant Pumps

Performance Shaping Factors (PSFs)	*PSF Level for Diagnosis*	*PSF Multiplier for Diagnosis*	*PSF Level for Action*	*PSF Multiplier for Action*
Available Time		--	Barely Enough Time	10
Stress		--	High	2
Complexity		--	Nominal	1
Experience/Training		--	Nominal	1
Procedures		--	Nominal	1
Ergonomics/HMI		--	Nominal	1
Fitness for Duty		--	Nominal	1
Work Processes		--	Nominal	1
Subtotal HEP	Diagnosis HEP: 0.000E+00		Action HEP: 2.000E-02	
Total Modified HEP: 2.000E-02				

PPR-XHE-XM-BLK: Operator Fails to Close Block Valve

Performance Shaping Factors (PSFs)	*PSF Level for Diagnosis*	*PSF Multiplier for Diagnosis*	*PSF Level for Action*	*PSF Multiplier for Action*
Available Time	Nominal	1	Nominal	1
Stress	High	2	High	2
Complexity	Moderately Complex	2	Moderately Complex	2
Experience/Training	High	0.5	Nominal	1
Procedures		1	Nominal	1
Ergonomics/HMI		1	Nominal	1
Fitness for Duty		1	Nominal	1
Work Processes		1	Nominal	1
Subtotal HEP	Diagnosis HEP: 2.000E-02		Action HEP: 4.000E-3	
Total Modified HEP: 2.380E-02				

SWS-XHE-XL-SWSUP: Operator Fails to Recover Service Water to CCW Heat Exchangers

Performance Shaping Factors (PSFs)	PSF Level for Diagnosis	PSF Multiplier for Diagnosis	PSF Level for Action	PSF Multiplier for Action
Available Time	Nominal	1	Barely Enough Time	10
Stress	Nominal	1	Nominal	1
Complexity	Obvious Diagnosis	0.1	Nominal	1
Experience/Training	Nominal	1	Nominal	1
Procedures	Nominal	1	Nominal	1
Ergonomics/HMI	Nominal	1	Nominal	1
Fitness for Duty	Nominal	1	Nominal	1
Work Processes	Nominal	1	Poor	5
Subtotal HEP	Diagnosis HEP: 1.000E-3		Action HEP: 5.000E 02	
Total Modified HEP: 5.10E 02				

SWS-XHE-XM-MKUP: Operator Fails to Start the Backup SWS Pumps

Performance Shaping Factors (PSFs)	PSF Level for Diagnosis	PSF Multiplier for Diagnosis	PSF Level for Action	PSF Multiplier for Action
Available Time	Nominal	1	Nominal	1
Stress	Very High	3	Nominal	1
Complexity	Very Complex	3	Nominal	1
Experience/Training	Nominal	1	Nominal	1
Procedures	Nominal	1	Nominal	1
Ergonomics/HMI	Nominal	1	Nominal	1
Fitness for Duty	Nominal	1	Nominal	1
Work Processes	Nominal	1	Nominal	1
Subtotal HEP	Diagnosis HEP: 9.000E-2		Action HEP: 1.000E 03	
Total Modified HEP: 9.100E-02				

APPENDIX F BASIC EVENT DESCRIPTIONS

F.1 Peach Bottom Applicable Basic Events

PBOT BE Name	PBOT BE Description
ADS-XHE-XM-ADSBT	OPERATOR FAILS TO VALVE IN ADS NITROGEN BOTTLE BANK
ADS-XHE-XM-MDEPR	OPERATOR FAILS TO DEPRESSURIZE THE REACTOR
CDS-TNK-HW-CST	CONDENSATE STORAGE TANK FAILURE
CDS-XHE-XM-RFLLT	OPERATOR FAILS TO REFILL THE CONDENSATE STORATE TANK
CFAILED	CONTAINMENT FAILURE CAUSES LOSS OF ALL INJECTION
CWG-XHE-XL-NR01H	OPERATOR FAILS TO ESTABLISH CONOWINGO TIE LINE SETUP IN 1 HOUR
CWG-XHE-XL-NR02H	OPERATOR FAILS TO ESTABLISH CONOWINGO TIE LINE SETUP IN 2 HOURS
CWG-XHE-XL-NR04H	OPERATOR FAILS TO ESTABLISH CONOWINGO TIE LINE SETUP IN 4 HOURS
CWG-XHE-XL-NR05H	OPERATOR FAILS TO ESTABLISH CONOWINGO TIE LINE SETUP IN 5 HOURS
CWG-XHE-XL-NR06H	OPERATOR FAILS TO ESTABLISH CONOWINGO TIE LINE SETUP IN 6 HOURS
CWG-XHE-XL-NR08H	OPERATOR FAILS TO ESTABLISH CONOWINGO TIE LINE SETUP IN 8 HOURS
CWG-XHE-XL-NR10H	OPERATOR FAILS TO ESTABLISH CONOWINGO TIE LINE SETUP IN 10 HOURS
CWG-XHE-XL-NR12H	OPERATOR FAILS TO ESTABLISH CONOWINGO TIE LINE SETUP IN 12 HOURS
DCP-BAT-CF-BATT	COMMON CAUSE FAILURE OF DIVISION 1-4 BATTERIES
DCP-BAT-CF-U2BATT	COMMON CAUSE FAILURE OF DIVISION 1-4 BATTERIES
DCP-BAT-LP-BATTA	DIVISION I BATTERIES FAIL
DCP-BAT-LP-BATTB	DIVISION II BATTERIES FAIL
DCP-BAT-LP-BATTC	DIVISION III BATTERIES FAIL
DCP-BAT-LP-BATTD	DIVISION IV BATTERIES FAIL
DCP-BCH-CF-CHRS	BATTERY CHARGERS FAIL FROM COMMON CAUSE
DCP-BCH-CF-U2CHRS	BATTERY CHARGERS FAIL FROM COMMON CAUSE
DCP-BDC-LP-DI	DIVISION I 125VDC BUS FAILS
DCP-BDC-LP-DII	DIVISION II 125VDC BUS FAILS
DCP-BDC-LP-DIII	DIVISION III 125VDC BUS FAILS
DCP-BDC-LP-DIV	DIVISION IV 125VDC BUS FAILS
EHV-SYS-FC-HVAC	EMERGENCY HVAC IS UNAVAILABLE
EPS-DGN-CF-START	DIESELS FAIL FROM COMMON CAUSE TO START
EPS-DGN-FS-DGA	DIESEL GENERATOR A FAILS TO START
EPS-DGN-FS-DGB	DIESEL GENERATOR B FAILS TO START
EPS-DGN-FS-DGC	DIESEL GENERATOR C FAILS TO START
EPS-DGN-FS-DGD	DIESEL GENERATOR D FAILS TO START
EPS-DGN-TM-DGA	DG A IS UNAVAILABLE BECAUSE OF MAINTENANCE

PBOT BE Name	PBOT BE Description
EPS-DGN-XX-NR30M4	CORRECTION-CONVOLUTION FACTOR FOR CCF-FTR-OPR (30MIN AVAIL)
EPS-SEQ-CF-DGNS	DG LOAD SEQUENCERS FAIL FROM COMMON CAUSE
EPS-SEQ-FO-DGA	DG A LOAD SEQUENCER FAILS TO OPERATE
EPS-SEQ-FO-DGB	DG B LOAD SEQUENCER FAILS TO OPERATE
EPS-SEQ-FO-DGC	DG C LOAD SEQUENCER FAILS TO OPERATE
EPS-SEQ-FO-DGD	DG D LOAD SEQUENCER FAILS TO OPERATE
EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
EPS-XHE-XL-NR02H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 2 HOURS
EPS-XHE-XL-NR03H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 3 HOURS
EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
EPS-XHE-XL-NR05H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 5 HOURS
EPS-XHE-XL-NR06H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 6 HOURS
EPS-XHE-XL-NR07H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 7 HOURS
EPS-XHE-XL-NR08H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 8 HOURS
EPS-XHE-XL-NR30M	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 30 MINUTES
EPS-XHE-XL-NR90M	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 90 MINUTES
EPS-XHE-XM-RCOOL	OPERATOR FAILS TO ESTABLISH ROOM COOLING WITHOUT EHV
FWS-XHE-XM-ERRLT	OPERATOR FAILS TO ALIGN FIREWATER
HCI-XHE-XM-RCOOL	OPERATOR FAILS TO ESTABLISH ROOM COOLING WITHOUT ESW
HCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
HCI-XHE-XO-ERROR1	OPERATOR FAILS TO START/CONTROL HPCI INJECTION
HPI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL HIGH PRESSURE INJECTION
IAS-XHE-XM-ALTR	OPERATOR FAILS TO ALIGN ALTERNATE AIR SUPPLY
IE-LOACB-E12	LOSS OF 4160 VAC BUS E12 (20A15)
LPI-XHE-XM-ERROR	OPERATOR FAILS TO CONTROL LOW PRESSURE INJECTION
MFW-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL FEEDWATER INJECTION
MSS-MSV-OC-STEAM	MAIN STEAM ISOLATION VALVES FAIL TO REMAIN OPEN
OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
OEP-XHE-XL-NR01HPC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (PLANT-CENTERED)
OEP-XHE-XL-NR01HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (SWITCHYARD)

PBOT BE Name	PBOT BE Description
OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
OEP-XHE-XL-NR02HPC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (PLANT-CENTERED)
OEP-XHE-XL-NR02HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (SWITCHYARD)
OEP-XHE-XL-NR03HPC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 3 HOURS (PLANT-CENTERED)
OEP-XHE-XL-NR03HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 3 HOURS (SWITCHYARD)
OEP-XHE-XL-NR04HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (SWITCHYARD)
OEP-XHE-XL-NR05HPC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 5 HOURS (PLANT-CENTERED)
OEP-XHE-XL-NR05HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 5 HOURS (SWITCHYARD)
OEP-XHE-XL-NR06HPC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 6 HOURS (PLANT-CENTERED)
OEP-XHE-XL-NR06HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 6 HOURS (SWITCHYARD)
OEP-XHE-XL-NR07HPC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 7 HOURS (PLANT-CENTERED)
OEP-XHE-XL-NR07HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 7 HOURS (SWITCHYARD)
OEP-XHE-XL-NR08HPC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 8 HOURS (PLANT-CENTERED)
OEP-XHE-XL-NR08HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 8 HOURS (SWITCHYARD)
OEP-XHE-XL-NR12HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 12 HOURS (GRID-RELATED)
OEP-XHE-XL-NR30MGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 30 MINUTES (GRID-RELATED)
OEP-XHE-XL-NR30MSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 30 MINUTES (SWITCHYARD)
OEP-XHE-XL-NR90MGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 90 MINUTES (GRID-RELATED)
OEP-XHE-XL-NR90MSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 90 MINUTES (SWITCHYARD)
OEP-XHE-XL-NR90MWR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 90 MINUTES (WEATHER-RELATED)
PCS-XHE-XL-LTLCHS	OPERATORS FAIL TO RECOVER THE POWER CONVERSION SYSTEM
PCS-XHE-XO-ERROR	OPERATOR FAILS TO MAINTAIN FEEDWATER INJECTION
RCI-XHE-XL-RSTRT	OPERATOR FAILS TO RECOVER RCIC FAILURE TO RESTART
RCI-XHE-XM-RCOOL	OPERATOR FAILS TO ESTABLISH ROOM COOLING WITHOUT ESW
RCI-XHE-XO-ERRLT	OPERATOR ACTIONS TO EXTEND RCIC OPERATION DURING

PBOT BE Name	PBOT BE Description
	SBO FAIL
RCI-XHE-XO-ERROR	OPERATOR FAILS TO START/CONTROL RCIC INJECTION
RHR-MDP-CF-START	RHR PUMPS FAIL FROM COMMON CAUSE TO START
RPS-SYS-FC-ARI	ALTERNATE ROD INSERTION FAILS
RPS-SYS-FC-ELECT	TRIP SYSTEM ELECTRICAL FAILURES
RPS-SYS-FC-HCU	HCU COMPONENTS FAIL
RPS-SYS-FC-MECH	CONTROL ROD DRIVE MECHANICAL FAILURE
RPS-SYS-FC-PSOVS	HCU SCRAM PILOT SOVS FAIL
RPS-SYS-FC-RELAY	TRIP SYSTEM RELAYS FAIL
RPS-XHE-XM-SCRAM	MANUAL SCRAM FAILS
SPC-MOV-CF-INJEC	SPC INJECTION VALVES FAIL BY COMMON CAUSE

F.2 Surry Applicable Basic Events

Surry BE Name	Surry BE Description
AFW-MDP-FS-1P3B	AFW MOTOR-DRIVEN PUMP 1-FW-P-3B FAILS TO START
AFW-TDP-FS-1P2	AFW TURBINE DRIVEN PUMP 1-FW-P-2 FAILS TO START
AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
AFW-XHE-XM-CNTRL1	OPERATOR FAILS TO CONTROL AFW TDP FLOW GIVEN SBO AND LOSS OF INST. AIR
AFW-XHE-XM-XTIE	OPERATOR FAILS TO INITIATE AFW CROSSCONNECT
CCW-XHE-XM-HTXB	OPERATOR FAILS TO OPEN CCW TRAIN B HTX VALVES
CDS-TNK-FC-U2CST	FAILURE OF UNIT 2 CST
CHW-XHE-XE-BCKUP	OPERATOR FAILS TO ALIGN BACKUP CHILLED WATER SUPPLY
CSR-LIC-CF-100ABCD	RWST LEVEL CHANNEL 1CS-LIC-100A LOSS OF FUNCTION (PSA)
CSR-XHE-XM-MISCALIB	RWST LEVEL CHANNELS 1-CS-LC-100A/B/C/D MISCALIBRATED
CSR-XHE-XR-FLANGE	TEST FLANGES LEFT BLANKED AFTER 1-PT-17.6 (VALUE FROM PSA)
CSR-XHE-XR-RSP2A	OPERATOR FAILS TO RESTORE OSR MDP-A AFTER T & M
CSR-XHE-XR-RSP2B	OPERATOR FAILS TO RESTORE OSR MDP-B AFTER T & M
DCP-BAT-CF-1AB	COMMON CAUSE FAILURE OF UNIT 1 BATTERIES
DCP-BAT-CF-2AB	COMMON CAUSE FAILURE OF UNIT 2 BATTERIES
DCP-BAT-LP-1BATB4HR	BATTERY 1B 1-EPD-B-1B FAILURE AT 4 HOURS
DCP-BAT-LP-2BATA4HR	BATTERY 2A 2-EPD-B-2A FAILURE AT 4 HOURS
DCP-BAT-LP-BATTA	FAILURE OF UNIT 1 TRAIN A 125V DC BATTERY
DCP-BAT-LP-BATTB	FAILURE OF UNIT 1 TRAIN B 125V DC BATTERY
DCP-BDC-LP-1A	FAILURE OF 125V DC BUS 1A
DCP-BDC-LP-1B	FAILURE OF 125V DC BUS 1B
DCP-BDC-LP-1E	125 VDC BUS 1E IS UNAVAILABLE
DCP-BDC-LP-1F	125 VDC BUS 1F IS UNAVAILABLE
DCP-BDC-LP-2A	FAILURE OF 125V DC BUS 2A
DCP-BDC-LP-2B	FAILURE OF 125V DC BUS 2B
EPS-DGN-CF-FSALL	COMMON CAUSE FAILURE OF DIESEL GENERATORS TO START

Surry BE Name	Surry BE Description
EPS-DGN-FS-DG1	DIESEL GENERATOR 1 FAILS TO START
EPS-DGN-FS-DG3	DIESEL GENERATOR 3 FAILS TO START
EPS-DGN-FS-SBO	SBO DIESEL GENERATOR FAILS TO START
EPS-DGN-TM-DG1	DIESEL GENERATOR 1 UNAVAILABLE DUE TO T & M
EPS-DGN-TM-DG3	DIESEL GENERATOR 3 UNAVAILABLE DUE TO T & M
EPS-SEQ-CF-DG123	CCF OF DG1/2/3 SEQUENCENCERS TO OPERATE
EPS-SEQ-FO-DG1	DG1 SEQUENCENCER FAILS
EPS-SEQ-FO-DG3	DG3 SEQUENCENCER FAILS
EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
EPS-XHE-XL-NR02H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 2 HOURS
EPS-XHE-XL-NR03H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 3 HOURS
EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
EPS-XHE-XL-NR05H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 5 HOURS
EPS-XHE-XL-NR06H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 6 HOURS
EPS-XHE-XL-NR06H4	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 6 HOURS (GIVEN FAILURE AT 4)
EPS-XHE-XL-NR07H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 7 HOURS
EPS-XHE-XL-NR07H4	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 7 HOURS (GIVEN FAILURE AT 4)
EPS-XHE-XL-NR08H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 8 HOURS
EPS-XHE-XL-NR13H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 13 HOURS
EPS-XHE-XL-NR30M	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 30 MINUTES
HPI-XHE-XL-RWST2	OPERATOR FAILS TO ALIGN HPI SUCTION TO THE U2 RWST
HPI-XHE-XM-ALT	OPERATOR FAILS TO ESTABLISH ALTERNATE HPI INJECTION PATH
HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
HPI-XHE-XM-FB1	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING (DEPEND)
HPI-XHE-XM-MDP1C	OPERATOR FAILS TO START AND ALIGN HPI MDP 1C
HPI-XHE-XM-THRTL	OPERATOR FAILS TO THROTTLE HPI TO REDUCE PRESSURE
HPR-XHE-XM-RECIRC	1-ES-1.3 TRANSFER TO COLD LEG RECIRCULATION
IE-LOACB-1J	LOSS OF 4160 VAC BUS 1J
ISL-XHE-XD-DIAG	OPERATORS FAIL TO DIAGNOSE ISLOCA
LPR-SMP-PG-SL	CONTAINMENT RECIRCULATION SUMP PLUGS - Small LOCA
OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
OEP-XHE-XL-NR01HPC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (PLANT-CENTERED)
OEP-XHE-XL-NR01HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (SWITCHYARD)
OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)

Surry BE Name	Surry BE Description
OEP-XHE-XL-NR02HPC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (PLANT-CENTERED)
OEP-XHE-XL-NR02HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (SWITCHYARD)
OEP-XHE-XL-NR03HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 3 HOURS (GRID-RELATED)
OEP-XHE-XL-NR03HPC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 3 HOURS (PLANT-CENTERED)
OEP-XHE-XL-NR03HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 3 HOURS (SWITCHYARD)
OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
OEP-XHE-XL-NR04HPC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (PLANT-CENTERED)
OEP-XHE-XL-NR04HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (SWITCHYARD)
OEP-XHE-XL-NR05HPC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 5 HOURS (PLANT-CENTERED)
OEP-XHE-XL-NR05HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 5 HOURS (SWITCHYARD)
OEP-XHE-XL-NR06H4	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 06 HOURS (GIVEN FAILURE AT 4)
OEP-XHE-XL-NR06HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 6 HOURS (GRID-RELATED)
OEP-XHE-XL-NR06HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 6 HOURS (SWITCHYARD)
OEP-XHE-XL-NR07H4	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 07 HOURS (GIVEN FAILURE AT 4)
OEP-XHE-XL-NR07HPC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 7 HOURS (PLANT-CENTERED)
OEP-XHE-XL-NR07HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 7 HOURS (SWITCHYARD)
OEP-XHE-XL-NR08HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 8 HOURS (GRID-RELATED)
OEP-XHE-XL-NR08HPC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 8 HOURS (PLANT-CENTERED)
OEP-XHE-XL-NR08HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 8 HOURS (SWITCHYARD)
OEP-XHE-XL-NR30MGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 30 MINUTES (GRID-RELATED)
OEP-XHE-XL-NR90MSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 90 MINUTES (SWITCHYARD)
OPR-XHE-XE-SGTR	OPERATOR FAILS TO DIAGNOSE SGTR AND 1-E-3 SGTR STEP 3 ISOLATE RUPTURED SG
OPR-XHE-XM-TRIP	OPERATOR FAILS TO TRIP THE REACTOR COOLANT PUMPS
PPR-MOV-FC-RC1535	BLOCK VALVE 1535 CLOSED DUE TO PORV LEAKING
PPR-MOV-FC-RC1536	BLOCK VALVE 1536 CLOSED DUE TO PORV LEAKING

Surry BE Name	Surry BE Description
PPR-SRV-CO-TRAN	PORVs/SRVs OPEN DURING TRANSIENT
PPR-SRV-OO-155-1A	FAILURE OF SRV 155-1A TO RECLOSE
PPR-XHE-XM-BLK	OPERATOR FAILS TO CLOSE BLOCK VALVE
RPS-BME-CF-RTBAB	CCF OF RTB-A AND RTB-B (MECHANICAL)
RPS-CCP-TM-CHA	CH-A IN T&M
RPS-CCX-CF-4OF6	CCF 4 ANALOG PROCESS LOGIC MODULES IN 2 OF 3 CHANNELS
RPS-CCX-CF-6OF8	CCF 6 ANALOG PROCESS LOGIC MODULES IN 3 OF 4 CHANNELS
RPS-ROD-CF-RCCAS	CCF 10 OR MORE RCCAS FAIL TO DROP
RPS-TXX-CF-4OF6	CCF 4 BISTABLES IN 2 0F 3 CHANNELS
RPS-TXX-CF-6OF8	CCF 6 BISTABLES IN 3 OF 4 CHANNELS
RPS-UVL-CF-UVDAB	CCF UV DRIVERS TRAINS A AND B (2 0F 2)
RPS-XHE-XE-NSGNL	OPERATOR FAILS TO RESPOND WITH NO RPS SIGNAL PRESENT
RPS-XHE-XE-SIGNL	OPERATOR FAILS TO RESPOND WITH RPS SIGNAL PRESENT
SWS-XHE-XL-SWSUP	OPERATOR FAILS TO RECOVER SERVICE WATER TO CCW HTXs
SWS-XHE-XM-ISOL	FAILURE TO VERIFY/ISOLATE SWS/CW INLET MOVs (AP-12, STEP 11)
SWS-XHE-XM-MKUP	OPERATOR FAILS TO START THE BACKUP SWS PUMPS

F.3 Sequoyah Applicable Basic Events

SEQH BE Name	SEQH BE Description
AFW-MDP-FS-1A	AFW MOTOR-DRIVEN PUMP 1A FAILS TO START
AFW-MDP-FS-1B	AFW MOTOR-DRIVEN PUMP 1B FAILS TO START
AFW-TDP-FS-1A	AFW TURBINE DRIVEN PUMP FAILS TO START
AFW-XHE-XM-CNTRL	OPERATOR FAILS TO CONTROL AFW TDP
AFW-XHE-XM-LCVAIR	OPERATOR FAILS TO TAKE CONTROL OF AFW LCVs (LOSS OF AIR)
AFW-XHE-XM-RFL	OPERATOR FAILS TO REFILL THE CST
AFW-XHE-XM-ROOM	OPERATOR FAILS TO OPEN PUMP ROOM DOORS
AFW-XHE-XR-FANAC	OPERATOR FAILS TO RESTORE TDP AC POWERED FAN
AFW-XHE-XR-FANDC	OPERATOR FAILS TO RESTORE TDP DC POWERED FAN
CCW-XHE-XM-ISOL	OPERATOR FAILS TO ISOLATE RUPTURED HTX
CCW-XHE-XM-STBY	OPERATOR FAILS TO START STANDBY CCW PUMP
CVC-XHE-XM-VCTSWAP	OPERATOR FAILS TO SWAP SUCTION FROM VCT TO RWST (LOCCW
DCP-BAT-CF-BATT	CCF OF 125VDC BATTERYS
DCP-BAT-CF-DG12	CCF OF 125VDC UNIT 1&2 DG BATTERIES
DCP-BAT-CF-DG1AB	CCF OF 125VDC UNIT 1 DG BATTERIES
DCP-BAT-LP-BATI	DIVISION I (1A) BATTERY BAT I FAILS
DCP-BAT-LP-BATII	DIVISION II (1B) BATTERY BAT II FAILS
DCP-BAT-LP-DG1A	DIESEL GENERATOR 1A BATTERY DG1A FAILS
DCP-BAT-LP-DG1B	DIESEL GENERATOR 1B BATTERY DG1B FAILS
DCP-BAT-LP-SCBAT	SWITCHYARD BATTERY FAILS
DCP-BCH-LP-CH1A	DIESEL GENERATOR 1A BATTERY CHARGER CH1A FAILS

SEQH BE Name	SEQH BE Description
DCP-BCH-LP-CH1B	DIESEL GENERATOR 1B BATTERY CHARGER CH1B FAILS
DCP-BCH-LP-CHI	DIVISION I (1A) BATTERY CHARGER I FAILS
DCP-BCH-LP-CHII	DIVISION II (1B) BATTERY CHARGER II FAILS
DCP-BDC-LP-DG1A	DIESEL GENERATOR 1A 125VDC POWER BUS FAILS
DCP-BDC-LP-DG1B	DIESEL GENERATOR 1B 125VDC POWER BUS FAILS
DCP-BDC-LP-DI	DIVISION I (1A) 125VDC POWER BUS FAILS
DCP-BDC-LP-DII	DIVISION II (1B) 125VDC POWER BUS FAILS
DCP-BDC-LP-DIII	DIVISION III (2A) 125V DC POWER BUS FAILS
DCP-BDC-LP-DIV	DIVISION IV (2B) 125V DC POWER BUS FAILS
EPS-DGN-CF-STRT1	CCF OF UNIT 1 DIESEL GENERATORS TO START
EPS-DGN-CF-STRT12	CCF OF UNIT 1 & 2 DIESEL GENERATORS TO START
EPS-DGN-FS-1A	DIESEL GENERATOR A FAILS TO START
EPS-DGN-FS-1A	DIESEL GENERATOR A FAILS TO START
EPS-DGN-FS-1A	DIESEL GENERATOR A FAILS TO START
EPS-DGN-FS-1A	DIESEL GENERATOR A FAILS TO START
EPS-DGN-FS-1B	DIESEL GENERATOR B FAILS TO START
EPS-DGN-TM-1A	DIESEL GENERATOR A UNAVAILABLE DUE TO TEST AND MAINTENANCE
EPS-DGN-TM-1B	DIESEL GENERATOR B UNAVAILABLE DUE TO TEST AND MAINTENANCE
EPS-HTX-PG-DG1A	DIESEL GENERATOR A COOLING JACKET HEAT EXCHS FAIL
EPS-HTX-PG-DG1B	DIESEL GENERATOR B COOLING JACKET HEAT EXCHS FAIL
EPS-XHE-XL-NR01H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 1 HOUR
EPS-XHE-XL-NR02H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 2 HOURS
EPS-XHE-XL-NR03H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 3 HOURS
EPS-XHE-XL-NR04H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 4 HOURS
EPS-XHE-XL-NR05H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 5 HOURS
EPS-XHE-XL-NR06H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 6 HOURS
EPS-XHE-XL-NR06H4	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 6 HOURS (GIVEN FAILURE AT 4)
EPS-XHE-XL-NR07H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 7 HOURS
EPS-XHE-XL-NR07H4	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 7 HOURS (GIVEN FAILURE AT 4)
EPS-XHE-XL-NR08H	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 8 HOURS
EPS-XHE-XL-NR30M	OPERATOR FAILS TO RECOVER EMERGENCY DIESEL IN 30 MINUTES
EPS-XHE-XL-SEQ	OPERATOR FAILS TO RECOVER DG LOAD SEQUENCERS
HPI-XHE-XM-FB	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING
HPI-XHE-XM-FB1	OPERATOR FAILS TO INITIATE FEED AND BLEED COOLING (depend)
HPI-XHE-XM-RWSTR1	OPERATOR FAILS TO REFILL THE RWST
HPI-XHE-XM-THRTL	OPERATOR FAILS TO CONTROL/TERMINATE SAFETY INJECTION FLOW
HPR-XHE-XM-RECIRC	OPERATOR FAILS TO START HIGH PRESSURE RECIRC

SEQH BE Name	SEQH BE Description
ISL-XHE-XD-DIAG	OPERATORS FAIL TO DIAGNOSE ISLOCA
OEP-XHE-XL-NR01HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (GRID-RELATED)
OEP-XHE-XL-NR01HPC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (PLANT-CENTERED)
OEP-XHE-XL-NR01HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 1 HOUR (SWITCHYARD)
OEP-XHE-XL-NR02HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (GRID-RELATED)
OEP-XHE-XL-NR02HPC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (PLANT-CENTERED)
OEP-XHE-XL-NR02HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 2 HOURS (SWITCHYARD)
OEP-XHE-XL-NR03HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 3 HOURS (GRID-RELATED)
OEP-XHE-XL-NR03HPC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 3 HOURS (PLANT-CENTERED)
OEP-XHE-XL-NR03HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 3 HOURS (SWITCHYARD)
OEP-XHE-XL-NR04HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (GRID-RELATED)
OEP-XHE-XL-NR04HPC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (PLANT-CENTERED)
OEP-XHE-XL-NR04HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 4 HOURS (SWITCHYARD)
OEP-XHE-XL-NR05HPC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 5 HOURS (PLANT-CENTERED)
OEP-XHE-XL-NR05HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 5 HOURS (SWITCHYARD)
OEP-XHE-XL-NR06H4PC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 06 HOURS (GIVEN FAILURE AT 4)
OEP-XHE-XL-NR06H4SC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 06 HOURS (GIVEN FAILURE AT 4)
OEP-XHE-XL-NR06HGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 6 HOURS (GRID-RELATED)
OEP-XHE-XL-NR06HPC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 6 HOURS (PLANT-CENTERED)
OEP-XHE-XL-NR06HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 6 HOURS (SWITCHYARD)
OEP-XHE-XL-NR07H4PC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 07 HOURS (GIVEN FAILURE AT 4)
OEP-XHE-XL-NR07H4SC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 07 HOURS (GIVEN FAILURE AT 4)
OEP-XHE-XL-NR07HPC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 7 HOURS (PLANT-CENTERED)
OEP-XHE-XL-NR07HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 7 HOURS (SWITCHYARD)

SEQH BE Name	SEQH BE Description
OEP-XHE-XL-NR08HPC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 8 HOURS (PLANT-CENTERED)
OEP-XHE-XL-NR08HSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 8 HOURS (SWITCHYARD)
OEP-XHE-XL-NR30MGR	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 30 MINUTES (GRID-RELATED)
OEP-XHE-XL-NR30MPC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 30 MINUTES (PLANT-CENTERED)
OEP-XHE-XL-NR30MSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 30 MINUTES (SWITCHYARD)
OEP-XHE-XL-NR90MPC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 90 MINUTES (PLANT-CENTERED)
OEP-XHE-XL-NR90MSC	OPERATOR FAILS TO RECOVER OFFSITE POWER IN 90 MINUTES (SWITCHYARD)
OPR-XHE-XM-DEPRCS1	OPERATOR FAILS TO DEPRESSURIZE RCS / SECONDARY SIDE - RAPID
PCS-XHE-XM-CDOWN3	OPERATOR FAILS TO INITIATE COOLDOWN (GIVEN SGTR)
PPR-MOV-FC-3323	BOTH PORV BLOCK VALVES FCV-68-332/333 CLOSED DURING POWER (PSA)
PPR-MOV-OO-332	PORV BLOCK VALVE FCV-68-332 FAILS TO CLOSE
PPR-MOV-OO-333	PORV BLOCK VALVE FCV-68-333 FAILS TO CLOSE
PPR-SRV-CO-TRAN	PORVs/SRVs OPEN DURING TRANSIENT
PPR-SRV-OO-334	PORV 334 FAILS TO RECLOSE AFTER OPENING
PPR-SRV-OO-340A	PORV 340A FAILS TO RECLOSE AFTER OPENING
PPR-SRV-OO-SR1	FAILURE OF SRV 1 (68-563) TO RECLOSE
PPR-XHE-XM-BLK	OPERATOR FAILS TO CLOSE PZR BLOCK VALVE
RCP-XHE-XM-TRIP	OPERATOR FAILS TO TRIP RCPS
RCS-XHE-XE-SGTR	OPERATOR FAILS TO DIAGNOSE SGTR AND START PROCEDURES
RPS-BME-CF-RTBAB	CCF OF RTB-A AND RTB-B (MECHANICAL)
RPS-CBI-CF-4OF6	CCF 4 BISTABLES IN 2 0F 3 CHANNELS
RPS-CBI-CF-6OF8	CCF 6 BISTABLES IN 3 OF 4 CHANNELS
RPS-CCX-CF-4OF6	CCF 4 ANALOG PROCESS LOGIC MODULES IN 2 OF 3 CHANNELS
RPS-CCX-CF-6OF8	CCF 6 ANALOG PROCESS LOGIC MODULES IN 3 OF 4 CHANNELS
RPS-ROD-CF-RCCAS	CCF 10 OR MORE RCCAS FAIL TO DROP
RPS-UVL-CF-UVDAB	CCF UV DRIVERS TRAINS A AND B (2 0F 2)
RPS-XHE-XE-NSGNL	OPERATOR FAILS TO RESPOND WITH NO RPS SIGNAL PRESENT
RPS-XHE-XE-SIGNL	OPERATOR FAILS TO RESPOND WITH RPS SIGNAL PRESENT
SWS-XHE-XL-MDPR	OPERATOR FAILS TO RECOVER PUMP BEFORE RCPSL
SWS-XHE-XL-NOREC	OPERATOR FAILS TO RECOVER ERCW
SWS-XHE-XL-NORECB	OPERATOR FAILS TO RECOVER ERCW TRAIN B
SWS-XHE-XL-STRR	OPERATOR FAILS TO RECOVER STRAINER BEFORE RCPSL
SWS-XHE-XL-TSAR	OPERATOR FAILS TO RECOVER TRAVELING SCREEN BEFORE RCPSL
SWS-XHE-XM-STBY	OPERATOR FAILS TO START/ALIGN STANDBY PUMPS

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10. SUPPLEMENTARY NOTES

11. ABSTRACT (200 words or less)

The Evaluation of Emergency Action Levels (EALs) project applied probabilistic risk assessment (PRA) methods to selected emergency action levels (EALs). The objective of this study is to explore the feasibility of using PRA to provide risk insights about EAL schemes. This study is the first effort to apply PRA methodology to nuclear power plant (NPP) EAL schemes. Peach Bottom, Surry and Sequoyah were selected as the pilot plants as they represent, respectively, 1) boiling water reactors (BWRs) with a Mark I containment, 2) pressurized water reactors (PWRs) with a large dry containment, and 3) PWRs with an ice condenser containment. EAL threshold conditions, as stated in the plant-specific emergency plan documents, are mapped into scenarios specific to the Standardized Plant Analysis Risk (SPAR) models for these plants. Conditional core damage probability (CCDP) is used as the risk metric to evaluate each EAL scenario. The results of this study provide generic and plant specific insights to be considered when developing future risk informed emergency planning (EP) regulatory activities. The results show that the current EAL schemes are generally logical in that plant risk increases as the emergency classification (EC) severity increases. However, the results also suggest that there are inconsistencies in the EC ranking of some EALs. These inconsistencies are identified for further consideration. The risk insights from this report may be applied to improve the current NRC approved EAL schemes. Nevertheless, it is important to note that regulatory decisions for EP are complex and should not be made solely considering CCDP values, but should be substantiated by deterministic approaches along with the PRA insights.

12. KEY WORDS/DESCRIPTORS (List words or phrases that will assist researchers in locating the report.)

Risk, Risk-informed, PRA, Probabilistic Risk Assessment, Probabilistic Risk Analysis, risk insights, EP, Emergency Plan, Emergency Planning, Emergency Preparedness, EC, Emergency Classification, EAL, Emergency Action Level, NUREG 0654, FEMA REP 1, SPAR, Standardized Plant Analysis Risk, Peach Bottom, Surry, Sequoyah, ASP, Accident Sequence Precursor, sequence, cutset, event analysis, emergency scenario

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