PLANT HATCH
SOUTHERN NUCLEAR OPERATING COMPANY

PRA CONVERSION PROJECT

Model Integration and Quantification Work Package

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1.0 PURPOSE

This document describes the methodology used to perform the task of model integration for accident sequence quantification. It is provided to the Plant Hatch Probabilistic Risk Assessment (PRA) project staff for internal communication and verification of technical information.

2.0 SCOPE

The primary objective of this document is to record the methods used to perform the model integration and to quantify the accident sequence models. This procedure has the following goals:

- To provide PRA staff members, independent reviewers, and Southern Nuclear Company (SNC) managers with a general overview of the model integration and quantification task.
- To provide PRA staff members and PRA reviewers with sufficient details to reproduce the results of this task.

3.0 GENERAL OVERVIEW

The methodology employed in the model integration and quantification task is based on a fault tree-linking approach. As shown in figure 3.1, the methodology utilizes event trees to define the progression of an accident sequence from an initiating event to an undesirable state such as core damage. Appendix A contains definitions for many key terms used throughout this document.

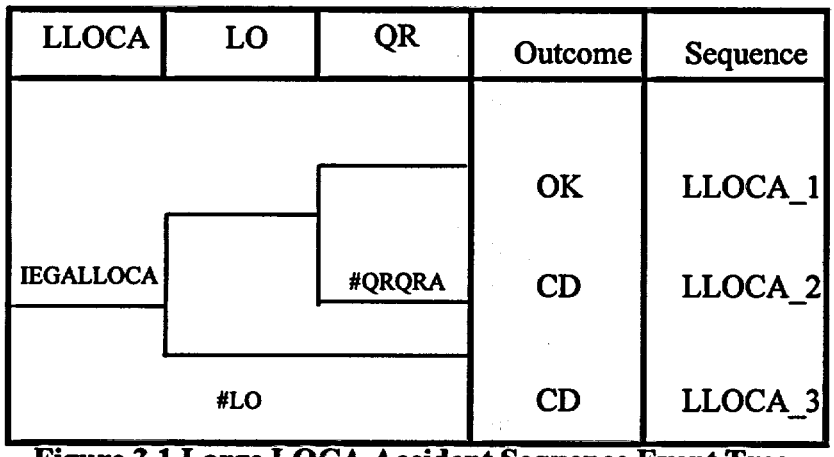


Figure 3.1 Large LOCA Accident Sequence Event Tree

The status of mitigation functions (i.e., 'up' branch is success and 'down' branch is failure) along an event tree path determines the final outcome of the accident sequence. Therefore, failure sequences can be obtained by *ANDing* the down branch of successive mitigation functions, while success sequences can be obtained by *ANDing* the up branch of mitigation functions. In this

example, the core damage sequence LLOCA_3 represents the occurrence of a large loss of coolant accident (LOCA) initiating event (i.e., event %LLOCA or %ALOCA designated as IEGALLOCA) and subsequent failures of the low pressure injection systems for inventory control (i.e., event #LO).

Since the fault tree linking methodology involves the solution of large fault tree models, it is necessary to translate the event tree logic to equivalent fault tree models called the accident sequence logic. The accident sequence logic models represent combinations of the initiating event with the top logic fault trees.

The top logic represents a set of fault tree models that provide the primary interface between the event tree model and frontline system fault tree models. The top logic models failures of mitigation functions. For example, in figure 3.2, top logic model LLOCA_3 includes the large LOCA event and failure of the low pressure injection mitigation function. The frontline fault tree models represent failures of systems that directly support a mitigation function. In figure 3.2, the frontline system model low pressure coolant injection (LPCI) represents failure of the residual heat removal (RHR) system in the LPCI mode.

The support system fault tree models represent failures of systems that support the function of the frontline systems. In figure 3.2, support system fault tree model ELEC represents failure of electric power to RHR pumps and valves. As shown on this figure, the accident sequence logic, top logic, frontline system, and support system fault tree models are linked together within cutset and fault tree analysis (CAFTA) to form an integrated fault tree model. This fault tree contains all the necessary logic required to quantify the accident sequences defined by the event trees.

For accident sequences that <u>do not</u> involve the success of any mitigation functions, only <u>one</u> accident sequence logic fault tree model is required for quantification. In figure 3.2, core damage sequence LLOCA_3 is represented by the ***AND*** of initiating event IEGALLOCA (i.e., %LLOCA or %ALOCA) and the top logic model #LO for the low pressure injection function. Core damage sequence LLOCA_3 is quantified by solving the fault tree model for initiating events %LLOCA and %ALOCA and top logic model #LO. The results are in the form of ***CUTSETS*** that are combinations of failure events that result in core damage.

For accident sequences that contain successful mitigation functions, the fault tree models for the success functions are also required for quantification. For sequence LLOCA_2, function #QRQRA has *failed,* but function #LO has *succeeded.* To account for the success of #LO, the "delete-term" (DELTERM) procedure is used which removes cutsets from the failed function(s) containing events that fail the success function. For the LLOCA_2 sequence in figure 3.2, the delete-term procedure is implemented by the following steps:

1. Solve the fault tree model for #QRQRA.
2. Solve the fault tree model for #LO.
3. Compare the cutsets for #LO with #QRQRA.
4. Delete any cutsets in #QRQRA that contain event combinations that are identical or are a superset of combinations already appearing in #LO.

The details of the overall quantification methodology and its implementation using the CAFTA software are described in the subsequent sections of this document. An overview of the quantification process is provided in figure 3.3, where one can follow the original fault tree file through quantification, cutset manipulation, and output of final cutsets. Also, figure 3.3 specifies the codes required to perform the quantification and details the content and purpose of each input to the process. The left side of figure 3.3 describes the inputs, and the actual quantification is performed in PRAQUANT as described in section 5.0.

Figure 3.2 Overview of the Master Fault Tree Structure.

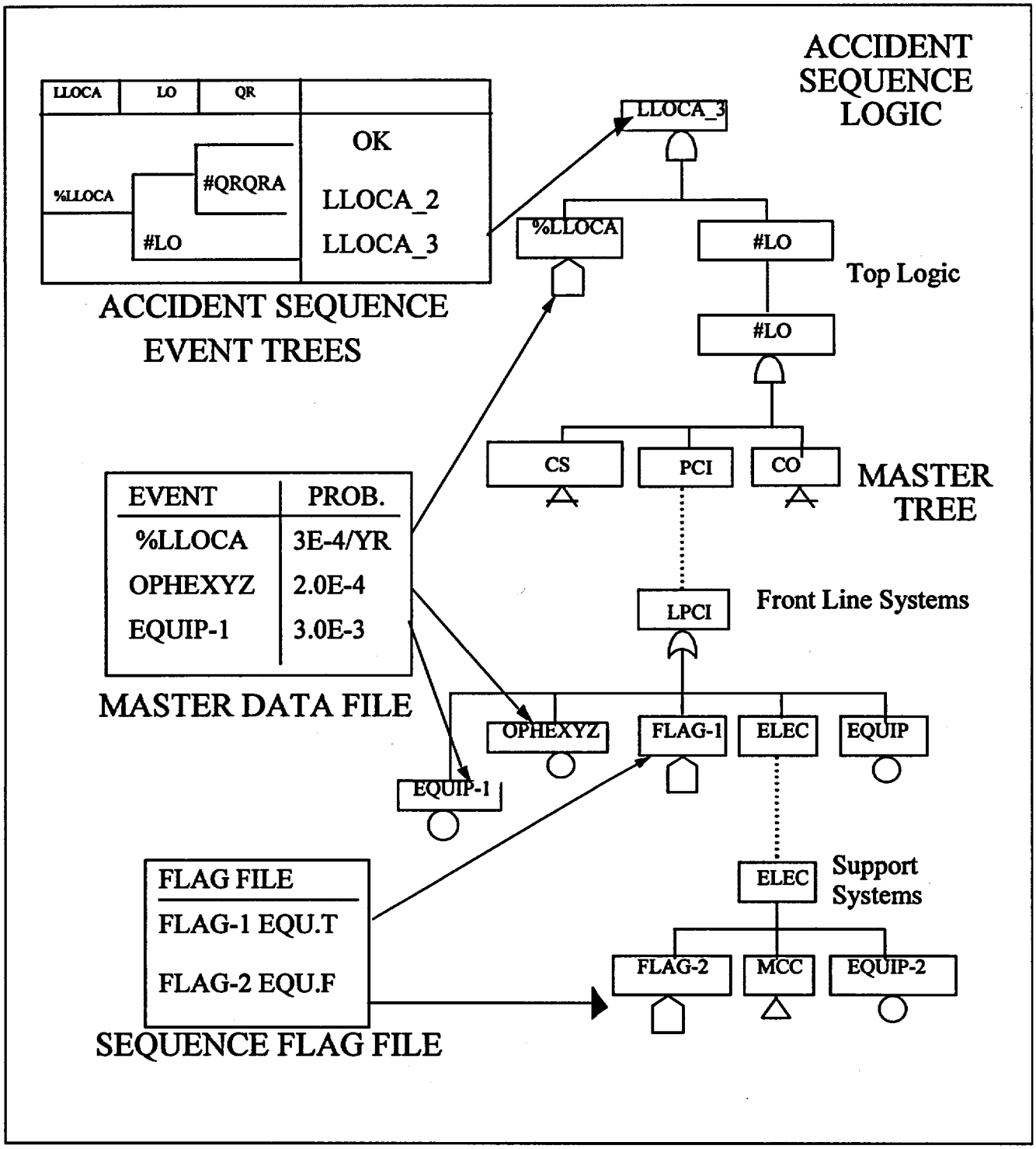
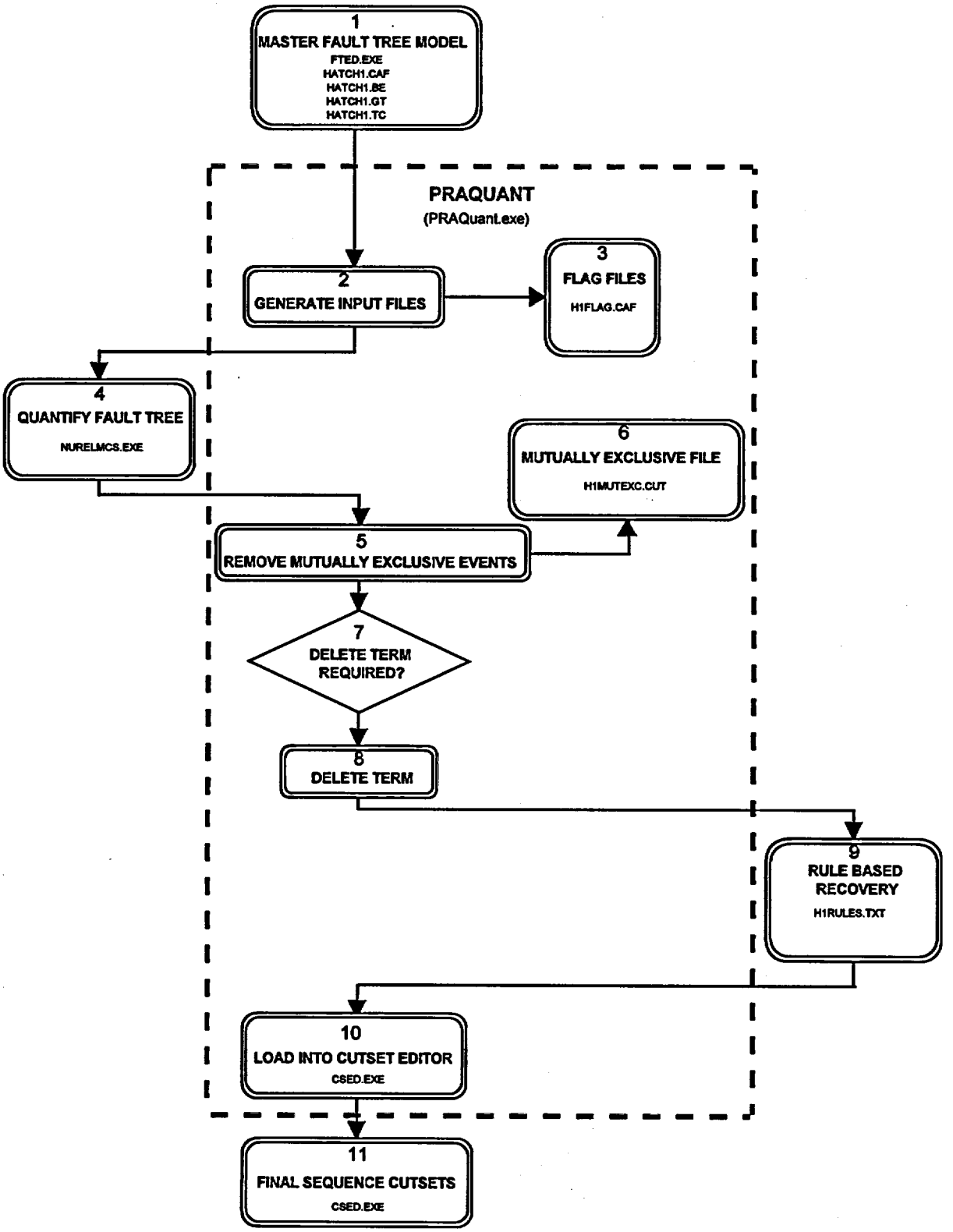


Figure 3.3 Quantification Methodology Overview Using CAFTA Software



4.0 DEVELOPMENT OF ACCIDENT SEQUENCE MODELS

4.1 Fault Tree Model Integration

As discussed in section 3.0, the quantification methodology employed for this project requires that the accident sequence logic, top logic, front-line system logic, and the support system logic fault tree be integrated into a single fault tree model. This process was implemented within the CAFTA software package by way of combining the fault tree models and associated data base into the following computer files:

File	Purpose
HATCH1.CAF	CAFTA file containing the accident sequence, top logic, front-line system logic, and support system logic fault tree models.
HATCH1.GT	CAFTA file containing descriptions of logic gates used in HATCH1.CAF.
HATCH1.BE	CAFTA file containing description and numerical data for basic events used in HATCH1.CAF.
HATCH1.TC	CAFTA file containing component failure rates for basic events used in HATCH1.CAF.

The CAFTA software treats these files as a single fault tree model containing all required logic with associated descriptions and data. A description of how the Hatch Unit 1 fault tree model is developed is provided in this section.

Proper integration of the Hatch Unit 1 fault tree model was ensured by verifying that the appropriate gates were accurately defined at the following interfaces:

(1) Accident sequence fault tree to top logic fault tree.
(2) Accident sequence fault tree to front line system fault tree.
(3) Top logic fault tree to front line system fault tree.
(4) Front-line system fault tree to support system fault tree.

4.2 Accident Sequence Fault Tree Models

The methodology for developing accident sequence fault tree models was discussed in section 3.0. This process requires the identification of top logic fault tree models and/or front-line fault tree models for each failed branch along the event tree path for a given accident sequence. Table 4.1 contains a summary of fault tree models identified for each accident sequence. The information in Table 4.1 was used to derive the accident sequence fault tree models described in sections 4.2.1 through 4.2.6. The *PRA Conversion Accident Sequence Analysis* notebook (Reference 3) describes the development of these sequences and contains the accident sequence event trees. This notebook, in turn, relies on the accident sequence information initially developed and reported in the *Hatch IPE Work Package for Event Trees* (Reference 4).

Table (4.1) Fault Tree Models for Failed Event Tree Branches

Initiator	*Accident Sequence Names*	*Fault Tree Models*
Large LOCAs (IEGALLOCA)	LLOCA_2, LLOCA_3	#LO, #QRQRA
Medium LOCAs (%MLOCA)	MLOCA_2, MLOCA_3, MLOCA_7	#HP-1, #DEHICO1, #LO, #QRQRA
Inadvertent Opening of An SRV (%IORV)	IORV_2, IORV_5, IORV_9, IORV_12, IORV_16	BVA, #PCS, #HP-1, #DEHICO1, #LO, #QRQRA
Transients (IEGGT)	GT_3, GT_4, GT_7, GT_9, GT_14, GT_15, GT_16, GT_18, GT_21, GT_25, GT_27, GT_30, GT_34, GT_36, GT_37, GT_39, GT_42, GT_46	#BVPR, #SORV0, #SORV1, #SORV2, #SORV3, #PCS, #HP-1, #ADED, #RP, #DEHICO1, #LO, #QRIN1REC, #QT, #QR, #QRQRA, #HP-3
Anticipated Transients Without Scram (IEGATWS)	ATWS_3, ATWS_6, ATWS_7, ATWS_10B, ATWS_12, ATWS_19, ATWS_20, ATWS_21, ATWS_24, ATWS_25, ATWS_26, ATWS_29, ATWS_32, ATWS_45, ATWS_46, ATWS_47, ATWS_49, ATWS_50, ATWS_54, ATWS_58, ATWS_59, ATWS_63, ATWS_64, ATWS_102, ATWS_103, ATWS_107, ATWS_108, ATWS_110, ATWS_111, ATWS_112, ATWS_113, ATWS_114, ATWS_115, ATWS_116	#RSCRAM, RPT, #BVPR, #SORV0, #SORV1, #SORV2, #SORV3, #PCS, HPCI-1, #BI, #TINJ, #HR, ADW, #ADEDWS, ADWS, #DEWS, #DE, #LOWS, #QR, #QT

Table (4.1) Fault Tree Models for Failed Event Tree Branches

Initiator	*Accident Sequence Names*	*Fault Tree Models*
Loss-of-Offsite Power (%LOSP)	LOSP_2, LOSP_4, LOSP_7, LOSP_9B, LOSP_10A, LOSP_10B, LOSP_11A, LOSP_11B, LOSP_13, LOSP_14, LOSP_18, LOSP_20, LOSP_21, LOSP_25, LOSP_27, LOSP_28, LOSP_30, LOSP_31, LOSP_35	#BVPR, #SORV0, #SORV1, #SORV2, #SORV3, #HP-1, #ADED, #DE, #LO, #QR, #QT, FL_HPI-B-S, #HP-B
Break Outside Containment and Interfacing System LOCA (%ULFWA, %ULFWB, %ULHPCI, %ULRCIC, %RWCU, %MSL, %VSEQ)	N/A	ULFWA, ULFWB, ULHPCI, ULRCIC, ULRWCU, ULMSL, %VSEQ

4.2.1 Large LOCA Sequences

Sequence Name(s)

LLOCA_2, LLOCA_3

Accident Sequence Logic

LLOCA_2:	IEGALLOCA	#QRQRA
LLOCA_3:	IEGALLOCA	#LO

4.2.2 Medium LOCA Sequences

Sequence Name(s)

MLOCA_2, MLOCA_3, MLOCA_7

Accident Sequence Logic

MLOCA_2:	%MLOCA	#QRQRA	
MLOCA_3:	%MLOCA	#LO	
MLOCA_7:	%MLOCA	#HP-1	#DEHICO1

4.2.3 Inadvertent Opening of an SRV Sequence

Sequence Name(s)

IORV_2, IORV_5, IORV_9, IORV_12, IORV_16

Accident Sequence Logic

IORV_2:	%IORV	#QRQRA		
IORV_5:	%IORV	#PCS	#LO	
IORV_9:	%IORV	#PCS	#HP-1	#DEHICO1
IORV_12:	%IORV	BVA	#LO	
IORV_16:	%IORV	BVA	#HP-1	#DEHICO1

4.2.4 Transient Sequences

Sequence Name(s)

GT_3, GT_4, GT_7, GT_9, GT_14, GT_15, GT_16, GT_18, GT_21, GT_25, GT_27, GT_30, GT_34, GT_36, GT_37, GT_39, GT_42, GT_46

Accident Sequence Logic

GT_3:	#SORV0	#ADED	#QRIN1REC		
GT_4:	#SORV0	#ADED	#LO		
GT_7:	#SORV0	#PCS	#RP		#QRIN1REC
GT_9:	#SORV0	#PCS	#RP	#LO	#QT
GT_14:	#SORV0	#PCS	#HP-1	#QR	
GT_15:	#SORV0	#PCS	#HP-1	#LO	
GT_16:	#SORV0	#PCS	#HP-3		#DEHICO1
GT_18:	#SORV1	#QRQRA			
GT_21:	#SORV1	#PCS		#LO	
GT_25:	#SORV1	#PCS	#HP-3		#DEHICO1
GT_27:	#SORV2	#QRQRA			
GT_30:	#SORV2	#PCS		#LO	
GT_34:	#SORV2	#PCS	#HP-3		#DEHICO1
GT_36:	#SORV3	#QRQRA			
GT_37:	#SORV3			#LO	
GT_39:	#BVPR	#QRQRA			
GT_42:	#BVPR	#PCS		#LO	
GT_46:	#BVPR	#PCS	#HP-3		#DEHICO1

4.2.5 ATWS Sequences

Sequence Name(s)

ATWS_3, ATWS_6, ATWS_7, ATWS_10B, ATWS_12, ATWS_19, ATWS_20, ATWS_21, ATWS_24, ATWS_25, ATWS_26, ATWS_29, ATWS_32, ATWS_45, ATWS_46, ATWS_47, ATWS_49, ATWS_50, ATWS_54, ATWS_58, ATWS_59, ATWS_63, ATWS_64, ATWS_102, ATWS_103, ATWS_107, ATWS_108, ATWS_110, ATWS_111, ATWS_112, ATWS_113, ATWS_114, ATWS_115, ATWS_116

Accident Sequence Logic

ATWS_3:	#RSCRAM	#SORV0	#QR		
ATWS_6:	#RSCRAM	#SORV0	#ADEDWS	#LOWS	
ATWS_7:	#RSCRAM	#SORV0	#ADEDWS	#DEWS	
ATWS_10B:	#RSCRAM	#SORV0	#PCS	#LOWS	#QT
ATWS_12:	#RSCRAM	#SORV0	#PCS	#DE	#QT
ATWS_19:	#RSCRAM	#SORV0	#PCS	#HR	#LOWS
ATWS_20:	#RSCRAM	#SORV0	#PCS	#HR	#DE
ATWS_21:	#RSCRAM	#SORV0	#PCS	#HR	ADWS
ATWS_24:	#RSCRAM	#SORV0	#PCS	#TINJ	#LOWS
ATWS_25:	#RSCRAM	#SORV0	#PCS	#TINJ	#DE
ATWS_26:	#RSCRAM	#SORV0	#PCS	#TINJ	ADWS
ATWS_29:	#RSCRAM	#SORV0	#PCS	#BI	#LOWS
ATWS_32:	#RSCRAM	#SORV0	#PCS	#BI	ADWS
ATWS_45:	#RSCRAM	#SORV0	#PCS	HPCI-1	#LOWS
ATWS_46:	#RSCRAM	#SORV0	#PCS	HPCI-1	#DE
ATWS_47:	#RSCRAM	#SORV0	#PCS	HPCI-1	ADWS
ATWS_49:	#RSCRAM	#SORV1	#QR		

Accident Sequence Logic (continued)

ATWS_50:	#RSCRAM	#SORV1	#LOWS		
ATWS_54:	#RSCRAM	#SORV1	#ADEDWS	#DEWS	
ATWS_58:	#RSCRAM	#SORV1	#HR	#DE	
ATWS_59:	#RSCRAM	#SORV1	#HR	ADWS	
ATWS_63:	#RSCRAM	#SORV1	#TINJ	#DE	
ATWS_64:	#RSCRAM	#SORV1	#TINJ	ADWS	
ATWS_102:	#RSCRAM	#SORV1	#PCS	#BI	#DE
ATWS_103:	#RSCRAM	#SORV1	#PCS	#BI	ADWS
ATWS_107:	#RSCRAM	#SORV1	#PCS	HPCI-1	#DE
ATWS_108:	#RSCRAM	#SORV1	#PCS	HPCI-1	ADWS
ATWS_110:	#RSCRAM	#SORV2	#QR		
ATWS_111:	#RSCRAM	#SORV2	#LOWS		
ATWS_112:	#RSCRAM	#SORV2	#DE		
ATWS_113:	#RSCRAM	#SORV2	ADWS		
ATWS_114:	#RSCRAM	#SORV3			
ATWS_115:	#RSCRAM	#BVPR			
ATWS_116:	#RSCRAM	RPT			

4.2.6. Loss-of-Offsite Power Sequences

Sequence Name(s)

LOSP_2, LOSP_4, LOSP_7, LOSP_9B, LOSP_10A, LOSP_10B, LOSP_11A, LOSP_11B, LOSP_13, LOSP_14, LOSP_18, LOSP_20, LOSP_21, LOSP_25, LOSP_27, LOSP_28, LOSP_30, LOSP_31, LOSP_35

Accident Sequence Logic

LOSP_2:	%LOSP	#SORV0	#QR		FL_HPI-B-S
LOSP_4:	%LOSP	#SORV0	#LO	#QT	FL_HPI-B-S
LOSP_7:	%LOSP	#SORV0	#ADED	#LO	FL_HPI-B-S
LOSP_9B:	%LOSP	#SORV0	#HP-1	#QR	#HP-B
LOSP_10A:	%LOSP	#SORV0	#HP-1	#LO	FL_HPI-B-S
LOSP_10B:	%LOSP	#SORV0	#HP-1	#LO	#HP-B
LOSP_11A:	%LOSP	#SORV0	#HP-1	#DE	FL_HPI-B-S
LOSP_11B:	%LOSP	#SORV0	#HP-1	#DE	#HP-B
LOSP_13:	%LOSP	#SORV1	#QR		
LOSP_14:	%LOSP	#SORV1	#LO		
LOSP_18:	%LOSP	#SORV1	#HP-1	#DE	
LOSP_20:	%LOSP	#SORV2	#QR		
LOSP_21:	%LOSP	#SORV2	#LO		
LOSP_25:	%LOSP	#SORV2	#HP-1	#DE	
LOSP_27:	%LOSP	#SORV3	#QR		
LOSP_28:	%LOSP	#SORV3	#LO		
LOSP_30:	%LOSP	#BVPR	#QR		
LOSP_31:	%LOSP	#BVPR	#LO		
LOSP_35:	%LOSP	#BVPR	#HP-1	#DE	

4.2.7 Break Outside Containment and Interfacing System LOCA Sequences

Sequence Name(s)

ULFWA, ULFWB, ULHPCI, ULRCIC, ULRWCU, ULMSL, %VSEQ

Accident Sequence Logic

ULFWA:	%ULFWA	FWAISO
ULFWB:	%ULFWB	FWBISO
ULHPCI:	%ULHPCI	HPISO
ULRCIC:	%ULRCIC	RCISO
ULRWCU:	%RWCU	RWISO
ULMSL:	%MSL	MSISO
%VSEQ:	%VSEQ	

4.2.8 Development of Core Damage Frequency (CDF) Model

The top gates of the fault tree logic models representing the failed (core damage) branches of the event trees for each of the initiating events considered, as outlined in table 4.1, were connected under an OR gate named @H1CDFTOP. The gate inputs to @H1CDFTOP, shown below, are comprised of gates representing core damage sequence names defined previously in sections 4.2.1 through 4.2.7 . Quantification of gate @H1CDFTOP yields the total (average) core damage frequency, since the data used for the initiating events in all the fault tree logic models under this gate are expressed in terms of events per year.

Gates Under @CDFTOP	Defined by Sequence Name(s)	Accident Sequence Logic
@ALLOCA	LLOCA_2, LLOCA_3	Defined in section 4.2.1
@MLOCA	MLOCA_2, MLOCA_3, MLOCA_7	Defined in section 4.2.2
@IORV	IORV_2, IORV_5, IORV_9, IORV_12, IORV_16	Defined in section 4.2.3
@TRANS	GT_3, GT_4, GT_7, GT_9, GT_14, GT_15, GT_16, GT_18, GT_21, GT_25, GT_27, GT_30, GT_34, GT_36, GT_37, GT_39, GT_42, GT_46	Defined in section 4.2.4
@ATWS	ATWS_3, ATWS_6, ATWS_7, ATWS_10B, ATWS_12, ATWS_19, ATWS_20, ATWS_21, ATWS_24, ATWS_25, ATWS_26, ATWS_29, ATWS_32, ATWS_45, ATWS_46, ATWS_47, ATWS_49, ATWS_50, ATWS_54, ATWS_58, ATWS_59, ATWS_63, ATWS_64, ATWS_102, ATWS_103, ATWS_107, ATWS_108, ATWS_110, ATWS_111, ATWS_112, ATWS_113, ATWS_114, ATWS_115, ATWS_116	Defined in section 4.2.5

Gates Under @CDFTOP	Defined by Sequence Name(s)	Accident Sequence Logic
@LOSP	LOSP_2, LOSP_4, LOSP_7, LOSP_9B, LOSP_10A, LOSP_10B, LOSP_11A, LOSP_11B, LOSP_13, LOSP_14, LOSP_18, LOSP_20, LOSP_21, LOSP_25, LOSP_27, LOSP_28, LOSP_30, LOSP_31, LOSP_35	Defined in section 4.2.6
@ULOCAVSEQ	ULFWA, ULFWB, ULHPCI, ULRCIC, ULRWCU, ULMSL, %VSEQ	Defined in section 4.2.7

4.2.9 Development of Large Early Release Frequency (LERF) Model

In the development of the CAFTA fault tree model, the LERF model has been completely restructured based on the analysis performed in Reference 6. The following core damage sequences are identified as leading to large early release:

1. Containment Bypass (LER_CB). This involves all break outside containment and interfacing system LOCA sequences.
2. Containment Overpressure Failure (LER_OPD). This involves sequences with vessel injection available but no containment heat removal. Containment fails due to overpressure prior to or soon after the vessel failure. The containment failure location is either in the drywell or in the wetwell water space.
3. Drywell Venting (LER_VD). This involves sequences with vessel injection, containment heat removal, and wetwell venting unavailable.
4. Containment Overtemperature Failure (LER_OT). This involves sequences with vessel injection, containment heat removal, containment venting, vessel depressurization, and drywell spray unavailable.

The top gates of the fault tree logic models representing the above four types of large early release sequences were connected under an OR gate named @H1LERFTOP. The gate inputs to @H1LERFTOP, shown below, are comprised of gates representing core damage sequences characterized by the function failures defined in the preceding. To make the tree logic evaluation as efficient as possible, failures of functions listed above that are already accounted for in the core damage sequences defined previously are not repeated in the top logic for @H1LERFTOP. Quantification of gate @H1LERFTOP yields the total (average) large early release frequency, since the data used for the initiating events in all the fault tree logic models under this gate are expressed in terms of events per year.

There are four gates under @H1LERFTOP: LER_CB, LER_OPD, LER_VD, and LER_OT.

Gate LER_CB is identical to gate @ULOCAVSEQ defined in section 4.2.7.

Gate LER_OPD represents containment drywell failure due to overpressure resulting from core damage sequences with vessel injection and no containment heat removal. Basic event CNMT2&3 models drywell failure given containment overpressure failure. Four groups of core damage sequences are included in this end state. The first group includes LLOCA_2, MLOCA_2, IORV_2, GT_3, GT_7, GT_14, GT_18, GT_27, GT_36, GT_39, ATWS_49, ATWS_110, LOSP_2, LOSP_9B, LOSP_13, LOSP_20, LOSP_27, and LOSP_30. In this group of core damage sequences, vessel injection is available and containment heat removal is lost. No additional logic is needed to account for these functional characteristics.

The second group of core damage sequences includes ATWS_29, ATWS_32, ATWS_102, ATWS_103, and ATWS_116. For this group of sequences, vessel injection is available. Containment heat removal would be completely lost if the hardened vent fails. As such, gate QV

that models failure of the hardened vent is ANDed with these sequences to account for the complete loss of containment heat removal.

The third group of core damage sequences includes ATWS_21, ATWS_25, ATWS_26, ATWS_54, ATWS_59, ATWS_63, ATWS_64, ATWS_112, ATWS_113, ATWS_114, and ATWS_115. To account for the total loss of the containment heat removal, this group of sequences is ANDed with both gates QV and CHR. Gate CHR models the containment heat removal including suppression pool cooling and drywell spray.

The fourth group of core damage sequences includes ATWS_45, ATWS_46, ATWS_47, ATWS_107, ATWS_108, ATWS_111, ATWS_112, ATWS_113, ATWS_114, and ATWS_115. For this group of sequences, there would be insufficient containment heat removal if boron injection by the standby liquid control system is unavailable. As such, this group of sequences is ANDed with gate #BI.

Gate LER_VD represents drywell venting with both vessel injection and containment heat removal unavailable. However, drywell venting would only be used if the wetwell vent is unavailable. To account for this condition, gate QV-VW-ONLY modeling failure of the wetwell venting is ANDed with all of the sequences in this end state. There are four groups of sequences in this end state. The first group includes GT_9 and LOSP_4. Vessel injection and containment heat removal failure are already included as part of the sequence logic for these core damage sequences. As such, no additional logic is needed for these two sequences.

The second group includes LLOCA_3, MLOCA_3, MLOCA_7, IORV_5, IORV_9, IORV_12, IORV_16, GT_4, GT_15, GT_16, GT_21, GT_25, GT_30, GT_34, GT_37, GT_42, GT_46, ATWS_10B, ATWS_12, ATWS_19, ATWS_20, ATWS_24, ATWS_25, ATWS_45, ATWS_46, ATWS_50, ATWS_58, ATWS_107, ATWS_111, LOSP_7, LOSP_10A, LOSP_10B, LOSP_11A, LOSP_11B, LOSP_14, LOSP_18, LOSP_21, LOSP_25, LOSP_28, LOSP_31, and LOSP_35. These sequences are ANDed with gate CHR to account for containment heat removal failure.

The third group of sequences includes ATWS_21, ATWS_26, ATWS_47, ATWS_54, ATWS_59, ATWS_63, ATWS_64, ATWS_108, ATWS_113, and ATWS_114. These sequences are ANDed with gate #LOWS to account for failure of low pressure injection.

The fourth group of sequences includes ATWS_112 and ATWS_115. For these sequences, both gate LER_VD-G064 modeling failure of high pressure injection and gate #LOWS modeling failure of low pressure injection are included in the top logic to account for the unavailability of vessel injection. High pressure injection (i.e., feedwater or HPCI) is needed for vessel depressurization to allow injection by the low pressure injection systems.

Gate LER_OT represents overtemperature failure of the containment drywell with vessel injection, containment heat removal, containment venting, vessel depressurization, and drywell spray unavailable. To account for the unavailability of the drywell spray, sequences in this end state are ANDed with gate OW. In addition, they are also ANDed with gate QV to account for

failure of containment venting. There are four groups of sequences in this end state. The first group includes GT_9 and LOSP_4. These two sequences are ANDed with gate #DE to account for failure of vessel depressurization.

The second group of core damage sequences includes MLOCA_7, IORV_9, IORV_16, GT_15, GT_16, GT_25, GT_34, GT_46, ATWS_12, ATWS_20, ATWS_25, ATWS_46, ATWS_58, ATWS_107, LOSP_11A, LOSP_11B, LOSP_18, LOSP_25, and LOSP_35. These sequences are ANDed with gate CHR to account for loss of containment heat removal.

The third group of sequence includes ATWS_112. This sequence is ANDed with gates #PCS and HPCI-1 to account for the unavailability of vessel depressurization. The fourth group includes ATWS_115. This sequence is also ANDed with gate #DE, in addition to #PCS and HPCI-1, to account for vessel depressurization failure.

4.3 Development of Flag Files

Flag files are CAFTA files that are merged with HATCH1.CAF during the quantification process, to control the configuration of fault tree models. The flag files contain logic flag events which are used to enable or disable portions of the fault tree logic models. They may also include initiating events that are excluded from the accident fault tree models during the quantification process.

The flag files define the status (i.e., True or False) of these events for different groups of sequences during the quantification process. Each line in a flag file contains the event name, a logic gate type (i.e., EQU), and a status identifier (i.e., .T. = TRUE and .F. = FALSE), separated by at least one blank space. The quantification analyst may assign any name to a flag file as long as an extension ".CAF" is included.

Typical entries in a flag file are represented as follows:

Flag Name	Gate	Setting	Description
FL-1T47B007A-R	EQU	.T.	Sets drywell cooler 1T47B007A as RUNNING (In Service) at the start of the event.
FL-1T47B007B-NR	EQU	.F.	Sets drywell cooler 1T47B007B as NOT RUNNING (Standby) at the start of the event.

The flag files may also be in the form of CAFTA logic structure files (i.e., ".CAF" files). Representation identical to the settings in the table above is used in these logic structure files. For the Hatch Unit 1 model, all of the flag event settings are contained in H1FLAG.CAF

It is important to note that events defined as ***"true"*** or ***"false"*** no longer belong in the fault tree logic, and are deleted by CAFTA. When redefining events *true* and *false*, CAFTA automatically restructures the fault tree logic. For details on how CAFTA adjusts logic during redefinition as true and false, consult Reference [2], Section 7.5. If it is desirable to keep the logic intact (i.e., when performing sensitivity on a conditional probability event), the event probability should be set to 1

or 0, corresponding to true and false, respectively. By assigning an event probability as opposed to logical redefinition, the events are retained, and the logic remains intact. Table 5.1 contains a list of sequences and their associated flag file. Appendix B contains a listing of events in each flag file.

4.4 Development Of Mutually Exclusive Events Files

The mutually exclusive events file, H1MUTEXC.CUT, is a CAFTA cutset file that contains the mutually exclusive events defined by the Accident Sequence and Systems Analysis Task Leaders. These may include all dual-initiator events and combinations of component maintenance events that violate the plant technical specifications. Each cutset in the file contains a set of mutually exclusive events identified by their CAFTA fault tree basic event names. Appendix C contains the listing of the mutually exclusive events file.

4.5 Initiating Event Impacts

An essential step in the quantification process is to accurately account for the impact of initiating events in the Hatch Unit 1 fault tree model. For example, a loss of DC power initiating event may cause a reactor scram, fail RCIC, and fail power to DC related equipment. The impact of this initiator is accounted for by inserting this initiating event under fault tree gates that fail DC power and other affected equipment. Table 4.3 contains a summary of logic gates in the Hatch Unit 1 fault tree model that are affected by each initiator.

Table 4.3 Summary of Initiating Event Impact

Initiator	Description	Quantification	Affected Gates in HATCH1.CAF
%ALOCA	LOCA INITIATING EVENT - SPURIOUS ELECTRICAL SRV ACTUATION AND BLOWDOWN	Data Analysis	CO, CO-1, HP-G012, IEGALLOCA, IEGLOCA, IEGMLOCA, LBL, NOLOPLOPSW
%ATWSFW	ATWS FOLLOWING LOSS OF FEEDWATER EVENT	Data Analysis	FW-G007, IEGATWS-A, IEGLOFW, MC-G008, MC-G022, RPSSIG-G007
%ATWSMS	ATWS FOLLOWING MSIV CLOSURE/LOSS OF CONDENSER VACUUM EVENT	Data Analysis	BVPR-G019, FW-MSCVML, IEGATWS-A, MC-G003, RPSSIG-G009
%ATWSTT	ATWS FOLLOWING TURBINE TRIP EVENT	Data Analysis	FW-G007, FWNOLOFW, IEGATWS-A, MC-G008, MC-G022, RPSSIG-G008

Table 4.3 Summary of Initiating Event Impact

Initiator	Description	Quantification	Affected Gates in HATCH1.CAF
%IORV	INADVERTENTLY OPENED SRV INITIATING EVENT	Data Analysis	CONOLOFW, CO-SORV, FR-G009, FW-G004, FWNOLOFW, IEGLOCA, LOCASIG-NOMLBL, MC-G022, NOLOPLOPSW, #SORV1
%LLOCA	LARGE BREAK LOCA INSIDE DRYWELL INITIATING EVENT	Data Analysis	CO, CO-1, HP-G012, IEGALLOCA, IEGLOCA, IEGMLOCA, JS-G004, JS-G013, JS-G00MDE, JS-G00MMG, LBL, NOLOPLOPSW
%LOCV	LOSS OF CONDENSER VACUUM INITIATING EVENT	Data Analysis	BVPR-G004, BVPR-G022, BVPR-G034, CONOLOFW, FR-G004, FW-MSCVML, IEGGT, MC-G007, MC-G022, NBA-G024, NOLOCLOPLOPSW, NOLOPLOPSW, SORV0-G007, SORV1-G007, SORV2-G007, SORV3-G007, V18
%LOFW	LOSS OF FEEDWATER INITIATING EVENT	Data Analysis	BVPR-G022, BVPR-G043, FR-G007, IEGGT, IEGLOFW, MC-G022, NBA-G024, NOLOCLOPLOPSW, NOLOPLOPSW, SORV0-G004, SORV1-G004, SORV2-G004, SORV3-G004, V18
%LOSP	LOSS OF OFFSITE POWER INITIATING EVENT	Data Analysis	CONOLOFW, HP-A_START_COND, HP-B_START_COND, NBA-G024, OGA, U2LOSP
%MLOCA	MEDIUM BREAK LOCA INSIDE DRYWELL INITIATING EVENT	Data Analysis	CO-MLOCA, CONOLOFW, IEGLOCA, IEGMLOCA, MBL, NOLOPLOPSW
%MSIVC	MSIV CLOSURE INITIATING EVENT	Data Analysis	IEGMSIVC, NBA-G024
%SCRAM	REACTOR SCRAM INITIATING EVENT	Data Analysis	IEGSCRAM, NOLOCLOPLOPSW, V18

Table 4.3 Summary of Initiating Event Impact

Initiator	Description	Quantification	Affected Gates in HATCH1.CAF
%SLOCA	SMALL BREAK LOCA INSIDE DRYWELL INITIATING EVENT	Data Analysis	DE-G037, IEGLOCA, IEGSCRAM, LOCASIG-NOMLBL, SMALLLEAK
%TTRIP	TURBINE TRIP INITIATING EVENT	Data Analysis	IEGTTRIP
%ULFWA	FEEDWATER LINE A BREAK INITIATING EVENT	Data Analysis	ULFWA
%ULFWB	FEEDWATER LINE B BREAK INITIATING EVENT	Data Analysis	ULFWB
%ULHPCI	HPCI STEAM LINE BREAK INITIATING EVENT	Data Analysis	ULHPCI
%ULMSL	MAIN STEAM LINE BREAK INITIATING EVENT	Data Analysis	ULMSL
%ULRCIC	RCIC STEAM LINE BREAK INITIATING EVENT	Data Analysis	ULRCIC
%ULRWCU	RWCU LINE BREAK INITIATING EVENT	Data Analysis	ULRWCU
%VSEQ	INTERFACING SYSTEMS LOCA INITIATING EVENT	Data and Special Analysis	LER_CB, @ULOCAVSEQ
&BUSC	TRIP CAUSED BY LOSS OF 600-V BUS C	Fault Tree	AC-1R23S003, FR-G008, FW-MSCVML, IEGSCRAM, L-BC, NOLOCLOPLOPSW, V18
&BUSD	TRIP CAUSED BY LOSS OF 600-V BUS D	Fault Tree	AC-1R23S004, IEGSCRAM, L-BD, NOLOCLOPLOPSW, V18
&DCPAN	LOSS OF DC PANEL R25-S001 INITIATING EVENT	Fault Tree	IEGMSIVC, L-1R25S001, R25S001-G005
&DISCH	PSW DISCH VALVE TRANSFERS CLOSED INITIATING EVENT	Fault Tree	IEGLOPSW, NOLOCLOPLOPSW, PSWDISCHARGE

Table 4.3 Summary of Initiating Event Impact

Initiator	Description	Quantification	Affected Gates in HATCH1.CAF
&INTAKE	INTAKE STRUCTURE PLUGGING INITIATING EVENT	Fault Tree	COSUP, CO-1SUP, DE-G102-A, HP-G04MCC-1, HP-G04MKC-1, IEGLOPSW, &INTAKE, INTAKESWREC2, L-PS-G125, NOLOCLOPLOPSW, VMDVINTKLOPSW
&LOBUSE	LOSS OF 4KV BUS E INITIATING EVENT	Fault Tree	BE, FR-G008, FW-MSCVML, IEGSCRAM, L-BE, NOLOCLOPLOPSW, V18
&LOBUSF	LOSS OF 4KV BUS F INITIATING EVENT	Fault Tree	BF, IEGSCRAM, L-BF, NOLOCLOPLOPSW, V18
&LOBUSG	LOSS OF 4KV BUS G INITIATING EVENT	Fault Tree	BG, IEGSCRAM, L-BG, NOLOCLOPLOPSW, V18
&LODC	LOSS OF STATION BATTERY A DC POWER INITIATING EVENT	Fault Tree	IEGMSIVC, L-SA, NBA-G024, SA, SA-1, SA-2
&LODWC	LOSS OF DRYWELL COOLING INITIATING EVENT	Fault Tree	IEGSCRAM, NOLOCLOPLOPSW, VC, VCWS, V18-G001
&LOMCHV	LOSS OF MCR COOLING INITIATING EVENT	Fault Tree	IEGMSIVC, NBA-G024, VM-G025, VM-G025-1
&LOPSW	LOSS OF PLANT SERVICE WATER INITIATING EVENT	Fault Tree	DVNOPSWRESTORE, IEGLOPSW, PSW1MISC, PSW2MISC, VMDVINTKLOPSW
&LOSUTD	LOSS OF STARTUP TRANSFORMER 1D INITIATING EVENT	Fault Tree	IEGTTRIP

4.6 Recovery Actions

The initial accident sequence modeling is *conservative* in that all possible mitigative actions are not credited. Following an initial quantification of the accident sequences, the highest frequency sequences and their associated cutsets are reviewed to determine possible recovery actions. For example, if loss-of-offsite power sequences are major contributors to the core damage frequency, then the possibility of recovery of offsite power or other mitigative action is considered.

Following identification of the recovery action, its *failure* probability is determined and the accident sequences/cutsets to which the recovery action can be applied identified. A recovery rule text file is then created for use by the QRECOVER.EXE code. This code examines the "raw" cutsets determined by the initial quantification and applies the recovery rules with the result termed the *analysis* cutsets. Appendix D lists the recovery rule files.

5.0 QUANTIFICATION OF ACCIDENT SEQUENCES

As discussed in section 3.0, before the accident sequences were quantified the following files were linked together into the Hatch Unit 1 fault tree model:

- Accident Sequence Logic Files
- frontline System Fault Trees.
- Support System Logic Files.

The sequences defined in the Hatch Unit 1 fault tree model were entered into the PRAQUANT file, HATCH1.QNT. The PRAQUANT records contain the failure and success gate names, truncation limit, and flag file associated with the event sequence. These fields link the sequence quantification to the Hatch Unit 1 fault tree model. The input data to HATCH1.QNT are summarized in Table 5.1. The setup requirement for PRAQUANT is described in Reference [1].

Once the PRAQUANT sequence database is prepared, it is used to quantify the event sequences by performing the following steps:

1. An accident sequence is read from the HATCH1.QNT file.

2. PRAQUANT takes the name given in F-EVENT and/or S-EVENT field and re-defines a new top in the master fault tree with that event name.

3. If a flag file is present, the logic in the flag file is loaded into the master tree and this tree is saved temporarily as a *.FTP file. This is done by loading in flag files, setting flags to true and false, selecting a top event to run, and writing out the file.

4. The cutsets for the accident sequence are then determined.

5. The accident sequence cutsets have the success sequence cutsets deleted.

6. The mutually exclusive events are removed from the remaining accident sequence cutsets. This produces a set of "raw" cutsets. This raw cutset file indicates that cutsets do not reflect any recovery actions.

7. The QRECOVER code is run at this point to apply recovery actions to selected cutsets and convert the raw cutsets to analysis cutsets. This final step writes out the recovered cutset files for the accident sequence.

8. The above steps are repeated for each selected sequence.

9. PRAQUANT returns values for each sequence in the sequence grid as well as the time required for quantification and number of cutsets generated. At this point the user may view the cutset using the *view cutset* option.

Table 5.1 Summary of Accident Sequence Logic Models Used for Quantification

Failure Logic	Flag File	Success Logic
LLOCA_2	H1FLAG.CAF	#LO
LLOCA_3	H1FLAG.CAF	
MLOCA_2	H1FLAG.CAF	#HP-1, #LO
MLOCA_3	H1FLAG.CAF	#HP-1
MLOCA_7	H1FLAG.CAF	
IORV_2	H1FLAG.CAF	BVA, #PCS
IORV_5	H1FLAG.CAF	BVA, #HP-1
IORV_9	H1FLAG.CAF	BVA
IORV_12	H1FLAG.CAF	#HP-1
IORV_16	H1FLAG.CAF	
GT_3	H1FLAG.CAF	#BVPR, #PCS, #LO
GT_4	H1FLAG.CAF	#BVPR, #PCS
GT_7	H1FLAG.CAF	#BVPR, #HP-1, #ADED, #LO
GT_9	H1FLAG.CAF	#BVPR, #HP-1, #ADED
GT_14	H1FLAG.CAF	#BVPR, #DEHICO1, #LO
GT_15	H1FLAG.CAF	#BVPR, #DEHICO1
GT_16	H1FLAG.CAF	#BVPR
GT_18	H1FLAG.CAF	#BVPR, #PCS
GT_21	H1FLAG.CAF	#BVPR, #HP-1
GT_25	H1FLAG.CAF	#BVPR
GT_27	H1FLAG.CAF	#BVPR, #PCS
GT_30	H1FLAG.CAF	#BVPR, #HP-1
GT_34	H1FLAG.CAF	#BVPR
GT_36	H1FLAG.CAF	#BVPR, #LO
GT_37	H1FLAG.CAF	#BVPR
GT_39	H1FLAG.CAF	#PCS
GT_42	H1FLAG.CAF	#HP-1
GT_46	H1FLAG.CAF	
ATWS_3	H1FLAG.CAF	RPT, #BVPR, #PCS, #ADEDWS
ATWS_6	H1FLAG.CAF	RPT, #BVPR, #PCS, #DEWS
ATWS_7	H1FLAG.CAF	RPT, #BVPR, #PCS
ATWS_10B	H1FLAG.CAF	RPT, #BVPR, HPCI-1, #BI, #TINJ, #HR, #ADEDWS, #DE
ATWS_12	H1FLAG.CAF	RPT, #BVPR, HPCI-1, #BI, #TINJ, #HR, #ADEDWS

Table 5.1 Summary of Accident Sequence Logic Models Used for Quantification

Failure Logic	Flag File	Success Logic
ATWS_19	H1FLAG.CAF	RPT, #BVPR, HPCI-1, #BI, #TINJ, ADWS, #DE
ATWS_20	H1FLAG.CAF	RPT, #BVPR, HPCI-1, #BI, #TINJ, ADWS
ATWS_21	H1FLAG.CAF	RPT, #BVPR, HPCI-1, #BI, #TINJ
ATWS_24	H1FLAG.CAF	RPT, #BVPR, HPCI-1, #BI, ADWS, #DE
ATWS_25	H1FLAG.CAF	RPT, #BVPR, HPCI-1, #BI, ADWS
ATWS_26	H1FLAG.CAF	RPT, #BVPR, HPCI-1, #BI
ATWS_29	H1FLAG.CAF	RPT, #BVPR, HPCI-1, #TINJ, #HR, ADWS, #DE
ATWS_32	H1FLAG.CAF	RPT, #BVPR, HPCI-1, #TINJ, #HR
ATWS_45	H1FLAG.CAF	RPT, #BVPR, ADWS, #DE
ATWS_46	H1FLAG.CAF	RPT, #BVPR, ADWS
ATWS_47	H1FLAG.CAF	RPT, #BVPR
ATWS_49	H1FLAG.CAF	RPT, #BVPR, #PCS, #BI, #TINJ, #HR, #ADEDWS, #LOWS
ATWS_50	H1FLAG.CAF	RPT, #BVPR, #PCS, #BI, #TINJ, #HR, #ADEDWS
ATWS_54	H1FLAG.CAF	RPT, #BVPR, #PCS, #BI, #TINJ, #HR
ATWS_58	H1FLAG.CAF	RPT, #BVPR, #PCS, #BI, #TINJ, ADWS
ATWS_59	H1FLAG.CAF	RPT, #BVPR, #PCS, #BI, #TINJ
ATWS_63	H1FLAG.CAF	RPT, #BVPR, #PCS, #BI, ADWS
ATWS_64	H1FLAG.CAF	RPT, #BVPR, #PCS, #BI
ATWS_102	H1FLAG.CAF	RPT, #BVPR, HPCI-1, ADWS
ATWS_103	H1FLAG.CAF	RPT, #BVPR, HPCI-1
ATWS_107	H1FLAG.CAF	RPT, #BVPR, ADWS
ATWS_108	H1FLAG.CAF	RPT, #BVPR
ATWS_110	H1FLAG.CAF	RPT, #BVPR, ADWS, #DE, #LOWS
ATWS_111	H1FLAG.CAF	RPT, #BVPR, ADWS, #DE
ATWS_112	H1FLAG.CAF	RPT, #BVPR, ADWS
ATWS_113	H1FLAG.CAF	RPT, #BVPR
ATWS_114	H1FLAG.CAF	RPT, #BVPR
ATWS_115	H1FLAG.CAF	RPT
ATWS_116	H1FLAG.CAF	
LOSP_2	H1FLAG.CAF	#BVPR, #HP-1, #ADED, #LO
LOSP_4	H1FLAG.CAF	#BVPR, #HP-1, #ADED
LOSP_7	H1FLAG.CAF	#BVPR, #HP-1
LOSP_9B	H1FLAG.CAF	#BVPR, #DE, #LO
LOSP_10A	H1FLAG.CAF	#BVPR, #DE, #HP-B

Table 5.1 Summary of Accident Sequence Logic Models Used for Quantification

Failure Logic	Flag File	Success Logic
LOSP_10B	H1FLAG.CAF	#BVPR, #DE
LOSP_11A	H1FLAG.CAF	#BVPR, #HP-B
LOSP_11B	H1FLAG.CAF	#BVPR
LOSP_13	H1FLAG.CAF	#BVPR, #HP-1, #LO
LOSP_14	H1FLAG.CAF	#BVPR, #HP-1
LOSP_18	H1FLAG.CAF	#BVPR
LOSP_20	H1FLAG.CAF	#BVPR, #HP-1, #LO
LOSP_21	H1FLAG.CAF	#BVPR, #HP-1
LOSP_25	H1FLAG.CAF	#BVPR
LOSP_27	H1FLAG.CAF	#BVPR, #LO
LOSP_28	H1FLAG.CAF	#BVPR
LOSP_30	H1FLAG.CAF	#HP-1, #LO
LOSP_31	H1FLAG.CAF	#HP-1
LOSP_35	H1FLAG.CAF	

For the two categories of quantification results, the contribution of the initiating events to core damage and large early release were ranked according to the Fussel-Vesely Method of determining Basic Event importance.

Table 5.2 displays the Core Damage Contribution by Initiating Event for CDF. The quantification results show that %LOSP, %LOFW, and &LODC are the most important contributors to core damage frequency (i.e., category CDF). The initiating events, &BUSC, %MSIVC, %SCRAM, and %TTRIP are the next most important contributors to core damage.

Table 5.3 displays the Large Early Release Contribution by Initiating Event for LERF. The quantification results show that &BUSC, loss of bus C initiating event, %LOSP, loss of offsite power, and &LOPSW, loss of plant service water, are the most important contributors to large early release frequency (i.e., category LERF). The initiating events %MSIVC, MSIV closure initiating event, %VSEQ, interfacing systems LOCA, and &LODC, loss of station battery A DC power, are the next most important contributors to large early release.

Appendix E contains the cutset results for both core damage and large early release. A comparison of the CAFTA core damage cutsets with the RISKMAN core damage sequences were performed and documented in Appendix F. Since the LERF model was completely redesigned and restructured, a direct comparison of the CAFTA cutsets with the RISKMAN sequences was not performed.

Table 5.2
Core Damage Contribution by Initiating Events - CDF

Event	%	CDF	Event Description
%LOFW	20.1 %	3.25E-6	Loss of Feedwater
&LODC	17.8 %	2.88E-6	Loss of Station Battery A DC Power
%LOSP	16.8 %	2.72E-6	Loss of Offsite Power
&BUSC	8.4 %	1.35E-6	Loss of 600VAC Bus C
%MSIVC	7.3 %	1.17E-6	MSIV Closure
ATWS	4.3 %	6.92E-7	Anticipated Transient Without Scram
&LOPSW	4.3 %	7.03E-7	Loss of Plant Service Water
%TTRIP	3.9 %	6.30E-7	Turbine Trip
%IORV	3.7 %	5.97E-7	Inadvertent Opening of An SRV
%MLOCA	2.0 %	3.28E-7	Medium LOCA
Other	11.4 %	1.86E-6	
Total CDF	100 %	1.62E-5	

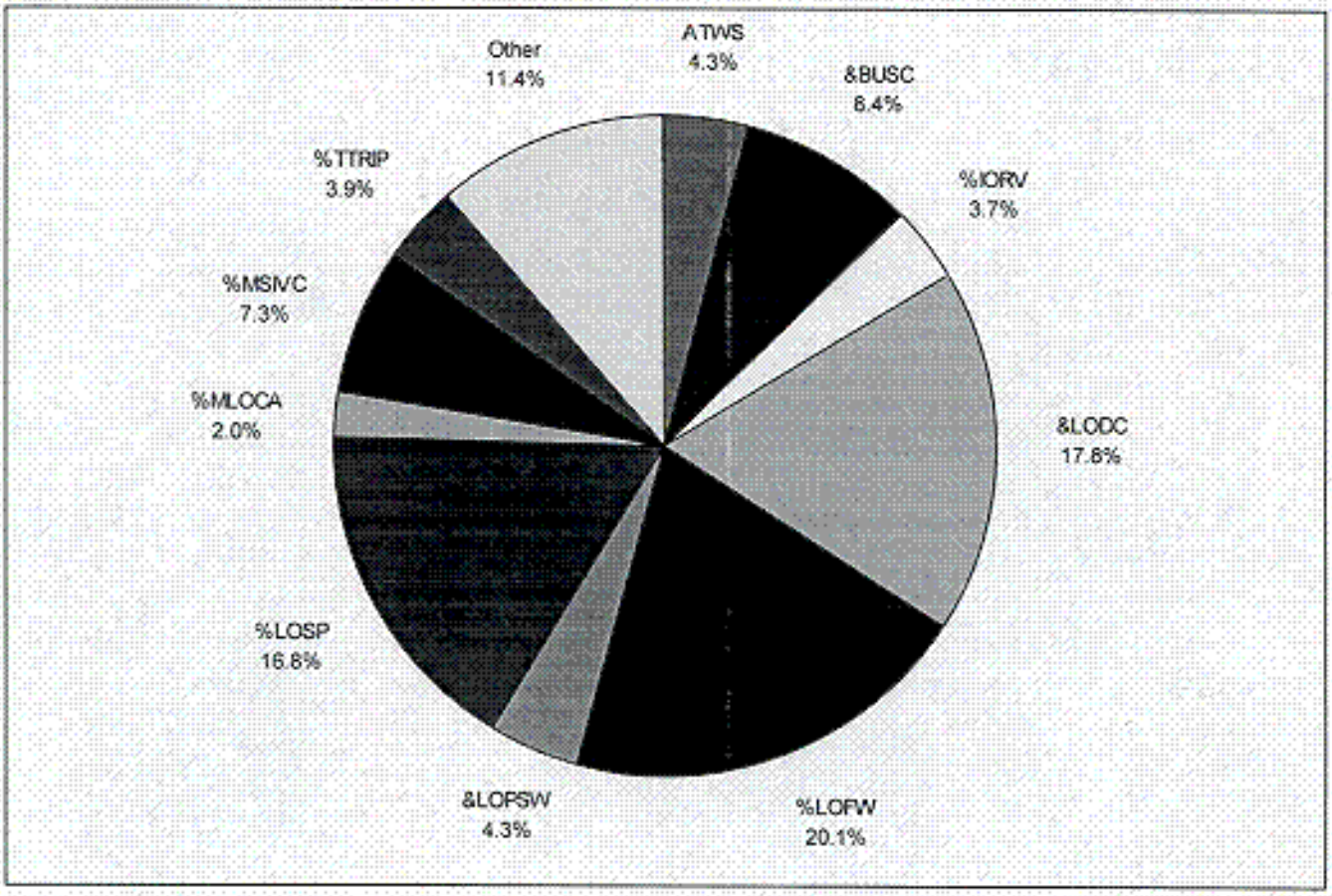


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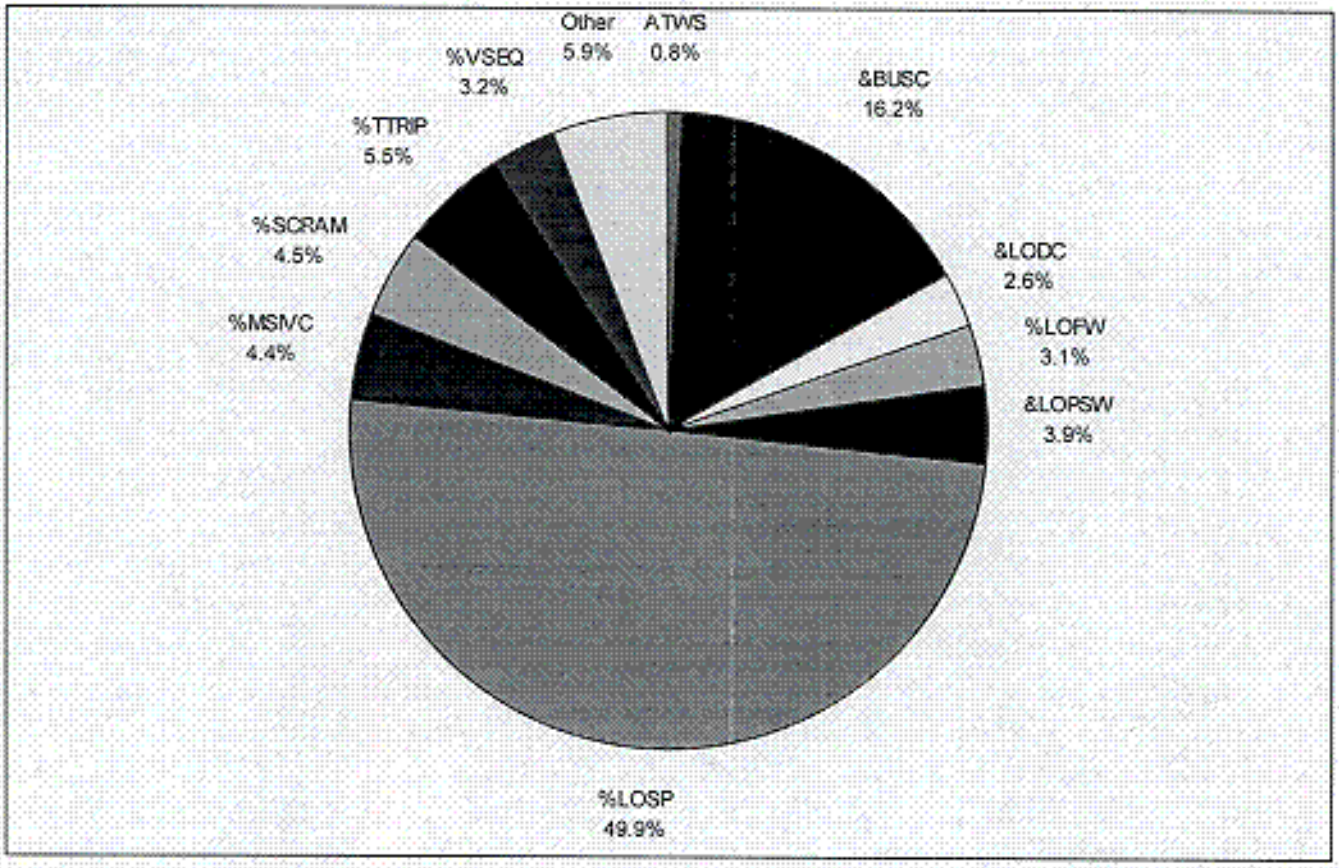
Table 5.3
Large Early Release Contribution by Initiating Events - LERF

Event	%	LERF	Event Description
%LOSP	49.9 %	1.33E-6	Loss of Offsite Power
&BUSC	16.2 %	4.31E-7	Loss of 600VAC Bus C
%TTRIP	5.5 %	1.45E-7	Turbine Trip
%SCRAM	4.5 %	1.20E-7	Reactor Scram
%MSIVC	4.4 %	1.17E-7	MSIV Closure
&LOPSW	3.9 %	1.03E-7	Loss of Plant Service Water
%VSEQ	3.2 %	8.62E-8	Interfacing Systems LOCA
%LOFW	3.1 %	8.36E-8	Loss of Feedwater
&LODC	2.6 %	6.91E-8	Loss of Station Battery A DC Power
ATWS	0.8 %	2.27E-8	Anticipated Transient Without Scram
Other	5.9 %	1.59E-7	
Total LER	100%	2.67E-6	



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6.0 REFERENCES

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2. CAFTA For Windows User's Manual, Version 3.2, October 1996.

3. Hatch PRA Conversion Work Package SNC-H1-98-002 – Accident Sequence Analysis Notebook, Southern Nuclear Operating Company and PLG, Inc., 1998.

4. Hatch IPE Work Package H60.7 – Event Trees, Southern Nuclear Operating Company and PLG, Inc., Rev. 0, December 1992.

5. Hatch PRA Conversion Work Package SNC-H1-98-004 – Basic Event Database for the CAFTA Fault Tree Model, Southern Nuclear Operating Company and PLG, Inc., 1998.

6. Level II Process: Plant Hatch, Fauske & Associates, Inc., FAI/98-88.

7. REES-H-97-001 Hatch Calculation, Changes in Timing of Core Melt Progression and Expected Releases due to Extended Power Uprate (8/12/97).

8. Note: Reference 7 describes the source term and release timing information recalculated after application of Extended Power Uprate at Plant Hatch Units 1 and 2. This information is used in lieu of that presented for the original IPE and represents the most up to date information for Hatch. The CET model described within this notebook was used to reevaluate the information described in REES-H-97-001. No significant differences were noted. The Hatch Level II process is described by this notebook, reference 6 noted above, and the reference 7.

APPENDIX A - ACCIDENT QUANTIFICATION DEFINITIONS

Accident Sequence Logic - The accident sequence logic is a *fault tree* representation of the accident sequence *event tree* logic.

Failure Logic - The set of failure events (i.e., low pressure injection #LO fails) required for each Accident Sequence (i.e., GT_4). These events are ANDed together in the development of the accident sequence logic for the sequence.

Linked Accident Sequence Model - The linked accident sequence model is a fault tree which contains the accident sequence logic, top logic, the system fault trees, and the modeling automatic merging of multiple fault trees into one integrated fault tree. Further information regarding these links may be found in Reference [2], Section 3.

Modeling Logic Flags - Flags are basic events developed by the quantification analyst and added to the master file. Flag events are used to configure the master file to quantify a specific sequence.

Integrated Fault Tree File - This file represents a single CAFTA tree file which has all of the Accident Sequence Logic, Top Logic, and System Fault Trees loaded into it (usually referred to as the HATCH Unit 1 file for our purposes).

Raw Sequence Cutsets - Raw sequence cutsets represent *all* cutsets output for a given accident sequence from CAFTA. To obtain true cutsets for the sequence, these cutsets require editing to remove mutually exclusive events and/or invalid cutsets.

Reliability Database - This term represents the failure database used by CAFTA to store failure data for components, human failures, and external events/flags. Each database has three associated files; a basic event database (with a .BE extension), which contains hardware failure events, human failure events and modeling/flag events, a failure rate database (with a .TC extension), which contains the failure rates for each hardware failure, and a gate database (with a .GT extension), which contains gate descriptions.

Success Logic - The set of success events required for each accident sequence (i.e., to analyze sequence GT_4, power conversion system #PCS must first be successful).

Top Logic - Top logic represents the intermediate logic required to link the events in the accident sequence event trees with the system fault tree top events.

Attachment 3 Part 1
Basic Event Importance Report
(page 1 of 16)

Importance Measure Report

@H1CDFTOP = 1.62E-05

Event Name	Probability	Fus Ves	BimBm	Red W	Ach W	Description
FL_HPCI	1.00E+00	6.34E-01	1.03E-05	2.732	1.00	FLAG FOR HPCI BEING UNAVAILABLE
FL_RCIC	1.00E+00	6.34E-01	1.03E-05	2.732	1.00	FLAG FOR RCIC BEING UNAVAILABLE
SORV0	9.95E-01	5.46E-01	8.92E-06	2.203	1.00	ALL SRVS RECLOSE
FL_#SORV0	1.00E+00	3.72E-01	6.05E-06	1.593	1.00	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED
HATCHAVAIL	7.79E-01	3.65E-01	7.61E-06	1.575	1.10	HATCH AVAILABILITY
FL_QV	1.00E+00	2.12E-01	3.44E-06	1.268	1.00	FALG FOR CONTAINMENT VENT FAILURE
DEA	3.34E-03	2.10E-01	1.02E-03	1.265	63.56	EMERG DEP FAILS (CRD AVAIL & NORM DW TEMP)
FL_LOSP	1.00E+00	2.03E-01	3.29E-06	1.254	1.00	FLAG FOR SELECTED LOSP
%LOFW	7.10E-01	2.01E-01	4.60E-06	1.252	1.08	LOSS OF FEEDWATER
COB	2.34E-01	1.96E-01	1.36E-05	1.243	1.64	LOSS OF CONDENSATE GIVEN LOSS OF FEEDWATER
MNUNHP_HPCI	3.24E-02	1.95E-01	9.78E-05	1.242	6.83	HPCI SYSTEM INOP DUE TO MAINTENANCE
SORVA	9.98E-01	1.91E-01	3.11E-06	1.236	1.00	ALL SRVS RECLOSE GIVEN 5 SRVS OPENED
P6SR1E41C001	2.47E-02	1.83E-01	1.21E-04	1.225	8.24	HPCI PUMP/TURBINE FAIL TO RUN
%FL-LODC	1.00E+00	1.79E-01	2.90E-06	1.218	1.00	FLAG FOR LOSS OF STATION BATTER A DC POWER INITIATING EVENT
BSSH1R22S016___I	3.29E-03	1.76E-01	8.67E-04	1.213	54.19	DC SWITCHGEAR S016 FAILS DURING OPERATION
%LOSP	2.20E-02	1.66E-01	1.23E-04	1.199	8.39	LOSP INITIATING EVENT
P6SS1E41C001	4.26E-02	1.48E-01	5.63E-05	1.173	4.32	HPCI PUMP/TURBINE FAIL TO START
P7SR1E51C001	2.47E-02	1.43E-01	9.40E-05	1.167	6.64	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO RUN
FL_NODWC	1.00E+00	1.34E-01	2.18E-06	1.155	1.00	FLAG FR DRYWELL COLING BEING UNAVAILABLE
FL_DGA	1.00E+00	1.23E-01	2.00E-06	1.140	1.00	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BU
SORVX	1.00E+00	1.13E-01	1.84E-06	1.128	1.00	ALL SRVs REMAIN CLOSED GIVEN SUCCESSFUL BYPASS VALVE OPERAT
FL_DGB	1.00E+00	1.12E-01	1.82E-06	1.126	1.00	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BU
DUR24	2.10E-01	1.02E-01	7.90E-06	1.114	1.38	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)
FL_DGC	1.00E+00	9.91E-02	1.61E-06	1.110	1.00	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BU
FL_HPI-B-S	1.00E+00	9.75E-02	1.58E-06	1.108	1.00	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY
DE2	1.78E-02	9.19E-02	8.38E-05	1.101	6.07	EMERG DEP FAILS (ELEV DW TEMP)
MNUNHP_RCIC	2.32E-02	8.72E-02	6.11E-05	1.096	4.67	RCIC SYSTEM INOP DUE TO MAINTENANCE
DE4	5.02E-02	8.67E-02	2.81E-05	1.095	2.64	EMERG DEP FAILS (MLOCA & HI PRESS INJECT INADEQ)
FL_DE4COND	1.00E+00	8.67E-02	1.41E-06	1.095	1.00	FLAG FOR CONDITIONS FOR DE4
%FL-BUSC	1.00E+00	8.37E-02	1.36E-06	1.091	1.00	FLAG FOR LOSS OF 600-V BUS C INITIATING EVENT
BSSH1R23S003___I	3.29E-03	8.33E-02	4.11E-04	1.091	26.20	600-V BUS C FAILS
HIRE20	2.00E-01	7.67E-02	6.23E-06	1.083	1.31	RECOVERY OF HIGH PRESS INJECT (CRD AVAILABLE; 02)
GRA2&3	2.70E-01	7.50E-02	4.51E-06	1.081	1.20	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSE
%MSIVC	7.50E-01	7.23E-02	1.57E-06	1.078	1.02	MSIV CLOSURE INITIATING EVENT
DEB	4.62E-03	7.05E-02	2.48E-04	1.076	16.18	EMERG DEP FAILS (NO CRD)
FL_NOCRD	1.00E+00	7.05E-02	1.15E-06	1.076	1.00	FLAG FOR CRD BEING UNAVAILABLE
OPHENS_NRESTORED	1.00E+00	7.01E-02	1.14E-06	1.075	1.00	LP INJECTION REQUIRED BEFORE CHANNEL RESTORED
P7SS1E51C001	2.88E-02	6.64E-02	3.74E-05	1.071	3.24	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO START
UA3	7.29E-01	6.42E-02	1.43E-06	1.069	1.02	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL
FL_HPI-B-F	1.00E+00	5.94E-02	9.65E-07	1.063	1.00	HPCI AND RCIC NOT AVAILABLE WITH BATTERY POWER ONLY
OPHENOACT1	2.34E-03	5.34E-02	3.71E-04	1.056	23.80	OPERATORS FAIL TO TAKE ACTION GIVEN LOCA SIGNAL

Event Name	Probability	Fus Ves	BimBm	Red W	Ach W	Description
HIRE50	5.00E-01	5.11E-02	1.66E-06	1.054	1.05	RECOVERY OF HIGH PRESS INJECT (CRD UNAVAILABLE; 0.5)
DEC	5.04E-03	4.36E-02	1.41E-04	1.046	9.60	EMERG DEP FAILS (NO CRD, SORV)
QCB	5.40E-01	4.36E-02	1.31E-06	1.046	1.04	MAIN CONDENSER UNAVAILABLE FOR DHR (MSIVs CLOSED)
FL_IEGATWS	1.00E+00	4.26E-02	6.91E-07	1.044	1.00	FLAG FOR ATWS EVENTS
XXXX1C11_HCUS	1.00E-05	4.23E-02	6.65E-02	1.044	4.09E+03	COMMON CAUSE FAILURE OF CONTROL RODS TO INSERT OCCURS
%FL-LOPSW	1.00E+00	4.04E-02	6.56E-07	1.042	1.00	FLAG FOR LOSS OF PLANT SERVICE WATER INITIATING EVENT
SORV1	4.38E-03	3.97E-02	1.47E-04	1.041	10.03	ONE SRV FAILS TO RECLOSE
%TTRIP	1.64E+00	3.87E-02	3.84E-07	1.040	0.98	TURBINE TRIP EVENT
%IORV	1.80E-02	3.67E-02	3.31E-05	1.038	3.00	INADVERTENTLY OPENED SRV
TTUNNS_CHANB	2.74E-03	3.48E-02	2.07E-04	1.036	13.68	CHANNEL B IN TEST
TTUNNS_CHAND	2.74E-03	3.48E-02	2.07E-04	1.036	13.68	CHANNEL D IN TEST
CC-DGS-2	3.18E-02	3.43E-02	1.75E-05	1.036	2.04	1/3, DGLR1R43S001A
CC-PS-15_____I	7.76E-05	3.39E-02	7.08E-03	1.035	436.59	4/4, PMOR1P41C001C PMOR1P41C001D PMOR1P41C001B PMOR1P41C001
OPHEL1D	1.97E-02	3.39E-02	2.80E-05	1.035	2.69	OPERATORS FAIL TO START SYSTEM AFTER LOCA SIGNAL
MNUNHS_LOOP2	6.83E-03	3.39E-02	8.06E-05	1.035	5.93	LOOP 2 MAINTENANCE - RHRSW
XXOG_DEMAND	2.40E-04	3.02E-02	2.04E-03	1.031	126.57	LOSS OF 230KV GRID CAUSED BY GENERATOR TRIP
OPHETBISO1	4.70E-03	2.97E-02	1.03E-04	1.031	7.28	OPERATORS FAIL TO OVERRIDE TB ISO
OPHERDWC1	1.60E-02	2.87E-02	2.92E-05	1.030	2.77	OPERATORS FAIL TO RESTORE DRYWELL COOLING
MNUNRS_DIVII	4.74E-03	2.73E-02	9.36E-05	1.028	6.74	RHR LOOP 2 MAINT OR MISALIGNMENT OF VALVES IN LOOP 2 FLOW
XRFD1S11S004	5.61E-03	2.71E-02	7.85E-05	1.028	5.80	SUT C LOAD SHEDS FOLLOWING GENERATOR TRIP
UA2	7.56E-01	2.58E-02	5.56E-07	1.027	1.01	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL
DUR3	4.90E-01	2.44E-02	8.08E-07	1.025	1.03	OFFSITE POWER RESTORED AFTER 30 MINUTES, WITHIN 2.5 HOURS
QRA	1.00E-01	2.33E-02	3.79E-06	1.024	1.21	DECAY HEAT REMOVAL NOT RECOVERED BEFORE CONTAINMENT OR ECCS
NBA	8.76E-03	2.32E-02	4.31E-05	1.024	3.63	NORM BUS FAST XFER (INCL SPUR XFER OF EMERG BUS TO SUT C)
CC-DGS-1	3.18E-02	2.29E-02	1.17E-05	1.023	1.70	1/3, DGLR1R43S001C
UOL24	3.78E-02	2.10E-02	9.02E-06	1.021	1.53	LOCA SIGNAL ON OPPOSITE UNIT, LOSP FOR 24 HOURS
AVFC1T46F005	2.00E-03	2.05E-02	1.67E-04	1.021	11.23	AOV F005 FAILS TO CLOSE
AVFC1T48F081	2.00E-03	2.05E-02	1.67E-04	1.021	11.23	SGTS ISOLATION VALVE F081 FAILS TO CLOSE
AVFO1T48F082	2.00E-03	2.05E-02	1.67E-04	1.021	11.23	VENT VALVE F082 FAILS TO OPEN
OLA	2.43E-05	2.03E-02	1.35E-02	1.021	831.35	OPERATORS FAIL TO ALIGN AVAILABLE SYSTEM S FOR DECAY HEAT R
%MLOCA	7.59E-04	2.02E-02	4.32E-04	1.021	27.56	MEDIUM BREAK LOCA INSIDE THE DRYWELL
%ATWSMS	9.70E-01	2.00E-02	3.35E-07	1.020	1.00	ATWS FOLLOWING MSIV CLOSURE/LOSS OF CONDENSER VACUUM EVENT
OPHEQV1	1.00E-01	1.88E-02	3.06E-06	1.019	1.17	OP FAILS TO INITIATE VENT GIVEN FAILURE TO PROVIDE LONG-TER
OSA	8.22E-03	1.85E-02	3.65E-05	1.019	3.23	OPERATORS FAIL TO INITIATE SLCS
CC-DGS-3	3.18E-02	1.74E-02	8.87E-06	1.018	1.53	1/3, DGLR1R43S001B
OPHEFW6	4.18E-02	1.73E-02	6.74E-06	1.018	1.40	OPERATORS FAIL TO USE CONDENSATE FOR INJECITON GIVEN MEDIUM
XRFD1S11S005	5.61E-03	1.71E-02	4.96E-05	1.017	4.03	SUT D LOAD SHEDS FOLLOWING GENERATOR TRIP
%SCRAM	1.39E+00	1.71E-02	2.00E-07	1.017	1.00	REACTOR SCRAM INITIATING EVENT
RPB	3.14E-01	1.67E-02	8.61E-07	1.017	1.04	RETURN TO POWER OP: GIVEN MSIVs INITIALLY CLOSED
%FL-DISCH	1.00E+00	1.66E-02	2.70E-07	1.017	1.00	FLAG FOR PSW DISCHARGE FLOW PATH FAILURE INITIATING EVENT
M4XC1P41F303A__I	2.54E-04	1.66E-02	1.06E-03	1.017	66.28	MOTOR OPERATED VALVE F303A TRANSFERS CLOSED
MVFO1E41F001	2.30E-03	1.66E-02	1.17E-04	1.017	8.19	MOTOR OPERATED VALVE F001 FAILS TO OPEN
MVFO1E41F006	2.30E-03	1.66E-02	1.17E-04	1.017	8.19	VALVE F006 FAILS TO OPEN
MVFO1E41F059	2.30E-03	1.66E-02	1.17E-04	1.017	8.19	LUBE OIL COOLING VALVE FAILS TO OPEN
CC-DGS-7	1.89E-04	1.63E-02	1.40E-03	1.017	87.14	3/3, DGLR1R43S001C DGLR1R43S001A DGLR1R43S001B
HICO1	1.00E-02	1.58E-02	2.57E-05	1.016	2.57	CONTROLLED COOLDOWN USING CONDENSATE BOOSTER FAILS GIVEN CO
SORVB	2.00E-03	1.56E-02	1.27E-04	1.016	8.79	ONE SRV FAILS TO RECLOSE GIVEN 5 SRVS OPENED
CC-DGS-22	1.27E-02	1.55E-02	1.98E-05	1.016	2.20	1/3, DGSS1R43S001A
MNUNPS_TRNB	1.57E-02	1.43E-02	1.47E-05	1.014	1.89	MAINT ON PSW PUMP C001B

Event Name	Probability	Fus Ves	BimBm	Red W	Ach W	Description
OPHEKMCR2	1.00E-02	1.40E-02	2.28E-05	1.014	2.39	OPERATORS FAIL TO INITIATE PURGE MODE OF MCR COOLING
%FL-LOMCHV	1.00E+00	1.40E-02	2.27E-07	1.014	1.00	FLAG FOR LOSS OF MCR COOLING INITIATING EVENT
%LOCV	2.20E-01	1.34E-02	9.87E-07	1.014	1.05	LOSS OF CONDENSER VACUUM
MVFO1E51F013	2.30E-03	1.33E-02	9.38E-05	1.013	6.76	MOTOR OPERATED VALVE 1E51-F013 FAILS TO OPEN
MVFO1E51F045	2.30E-03	1.33E-02	9.38E-05	1.013	6.76	STEAM SUPPLY VALVE 1E51-F045 FAILS TO OPEN
MVFO1E51F046	2.30E-03	1.33E-02	9.38E-05	1.013	6.76	LUBE OIL COOLING WATER VALVE FAILS TO OPEN
%FL-LOBUSF	1.00E+00	1.25E-02	2.04E-07	1.013	1.00	FLAG FOR LOSS OF BUS F INITIATING EVENT
BSSH1R22S006___I	3.29E-03	1.25E-02	6.18E-05	1.013	4.79	4KV BUS F FAILS TO OPERATE
CC-VM-21_____I	4.61E-03	1.23E-02	4.34E-05	1.012	3.66	3/3, CHSR1Z41B008B CHOR1Z41B008A CHOR1Z41B008C
MNUNBC	3.67E-05	1.22E-02	5.40E-03	1.012	333.63	BUS C IN MAINTENANCE
MNUNBD	3.67E-05	1.21E-02	5.35E-03	1.012	330.54	BUS D IN MAINTENANCE
%ATWSFW	7.10E-01	1.18E-02	2.71E-07	1.012	1.00	ATWS FOLLOWING LOSS OF FEEDWATER EVENT
CC-DGS-24	1.27E-02	1.13E-02	1.45E-05	1.011	1.88	1/3, DGSS1R43S001C
OPHES064/S065	2.00E-02	1.12E-02	9.14E-06	1.011	1.55	OPERATOR ACTION TO MANUALLY TRANSFER INSTRUMENT BUS POWER S
CC-DGS-42	6.60E-05	1.11E-02	2.72E-03	1.011	168.27	3/3, CBFC1R22S005_5 CBFC1R22S006_6 CBFC1R22S007_6
%ATWSTT	1.64E+00	1.08E-02	1.07E-07	1.011	1.00	ATWS FOLLOWING TURBINE TRIP EVENT
CC-DGS-28	6.40E-05	1.07E-02	2.71E-03	1.011	168.08	3/3, DGSS1R43S001A DGSS1R43S001B DGSS1R43S001C
CC-HS-47	2.18E-03	1.03E-02	7.69E-05	1.010	5.72	1/2, MVFO1E11F068B
%FL-INTAKE	1.00E+00	1.02E-02	1.66E-07	1.010	1.00	FLAG FOR INITIATING EVENT CAUSED BY LOSS OF PSW DUE TO INTA
INTAKEPLUG_____I	1.00E-04	1.02E-02	1.66E-03	1.010	102.99	PSW INTAKE PLUGGING
GRE2&3	7.30E-01	9.98E-03	2.22E-07	1.010	1.00	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL
LOA	4.91E-02	9.92E-03	3.28E-06	1.010	1.19	CNTL LO PRESS INJECT FOLLOWING EMERG DEPRESS DURING ATWS GI
XXNOMANUAL	1.00E-01	9.80E-03	1.59E-06	1.010	1.09	NO MANUAL INITIATION
%ALOCA	2.20E-03	9.34E-03	6.90E-05	1.009	5.24	LOCA - SPURIOUS ELEC SRV ACTUATION & BLOWDOWN
SORV2	1.17E-04	8.80E-03	1.22E-03	1.009	76.19	TWO SRVS FAIL TO RECLOSE
OPHEEPB	1.62E-02	8.35E-03	8.38E-06	1.008	1.51	OPERATOR FAILS TO ALIGN 600-V BUS TO BACKUP 4160-V BUS
FWL	7.22E-01	7.71E-03	1.73E-07	1.008	1.00	FEEDWATER UNAVAILABLE GIVEN LOFW
CC-QT-31	2.18E-03	7.66E-03	5.71E-05	1.008	4.51	1/2, MVFO1E11F028B
BTFD1R42S001B	4.54E-04	7.13E-03	2.55E-04	1.007	16.69	STATION BATTERY FAILS ON LOSS OF CHARGER INPUT
CC-DGS-15	6.84E-03	7.13E-03	1.69E-05	1.007	2.04	1/3, DG1R1R43S001A
PR8	2.00E-04	6.99E-03	5.68E-04	1.007	35.95	PRESS RELIEF INADEQ: MISVC (4+ SRVS FTO); BV UNAVAIL
CC-DGS-23	1.27E-02	6.92E-03	8.88E-06	1.007	1.54	1/3, DGSS1R43S001B
CC-DGS-21	4.06E-05	6.73E-03	2.69E-03	1.007	166.42	3/3, DG1R1R43S001A DG1R1R43S001B DG1R1R43S001C
GRC2&3	4.10E-01	6.67E-03	2.64E-07	1.007	1.01	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSE
YVFO1N37F001	5.87E-03	6.34E-03	1.75E-05	1.006	2.07	BYPASS VALVES FAIL TO OPEN TO RELIEVE PRESSURE (MPL FOR UNI
DE5	4.23E-02	6.31E-03	2.42E-06	1.006	1.14	EMERG DEP FAILS (ATWS & NO HI PRESS INJECT)
OPHEFW2_CO	4.71E-03	6.23E-03	2.15E-05	1.006	2.32	OPERATORS FAIL TO USE CONDENSATE FOR INJECITON GIVEN SORV
XXOG_24HOURS	6.83E-05	6.22E-03	1.48E-03	1.006	91.98	SUPPLY FROM 230KV GRID LOST DURING 24 HOURS AFTER TRANSIENT
M2XC1E11F068B	1.35E-03	6.05E-03	7.29E-05	1.006	5.48	MOV F068B FAILS TO CONTROL FLOW - TRANSFERS CLOSED
BTFD1R42S001A	4.54E-04	5.92E-03	2.12E-04	1.006	14.03	STATION BATTERY FAILS ON LOSS OF CHARGER INPUT
VOPA	1.01E-03	5.83E-03	9.39E-05	1.006	6.77	OPERATOR FAILS TO TRIP UNNEEDED PUMPS ON LOSS OF ROOM COOLI
CC-HS-15	1.72E-04	5.53E-03	5.23E-04	1.006	33.16	4/4, PMSS1E11C001B PMSS1E11C001D PMSS1E11C001A PMSS1E11C001
TTUNLC_RL7B	2.74E-03	5.48E-03	3.25E-05	1.006	2.99	DIV. 2 TEST ALIGNMENT - RELAY 7B
TTUNLC_RL8B	2.74E-03	5.48E-03	3.25E-05	1.006	2.99	DIV. 2 TEST ALIGNMENT - RELAY 8B
UA1	8.13E-01	5.47E-03	1.09E-07	1.006	1.00	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL
%SLOCA	2.29E-02	5.38E-03	3.82E-06	1.005	1.23	SMALL BREAK LOCA INSIDE THE DRYWELL
%VSEQ	8.62E-08	5.31E-03	1.00E+00	1.005	6.15E+04	V SEQUENCE
CC-DGS-17	6.84E-03	5.27E-03	1.25E-05	1.005	1.77	1/3, DG1R1R43S001C
BTFD1R42S002C	4.54E-04	5.18E-03	1.85E-04	1.005	12.40	DIESEL BATTERY C FAILS TO PROVIDE POWER ON LOSS OF CHARGERS

Event Name	Probability	Fus Ves	BimBm	Red W	Ach W	Description
DE3	2.07E-02	5.12E-03	4.02E-06	1.005	1.24	EMERG DEP FAILS (SLOCA OR 1 SORV & ELEV DW TEMP)
MNUN1R43S001A	5.51E-03	4.75E-03	1.40E-05	1.005	1.86	DGA MAINTENANCE
MIUNHS_LOOP2	1.04E-03	4.48E-03	6.99E-05	1.005	5.30	LOOP 2 VALVE MISALIGNMENT
MCA	7.79E-03	4.38E-03	9.14E-06	1.004	1.56	MSIVS FAIL TO REMAIN OPEN GIVEN FEEDWATER OR FEEDWATER RES
DEADS1	1.00E-03	4.29E-03	6.97E-05	1.004	5.28	ADS FAILS (OP DO NOT INHIBIT)
%FL-DCPAN	1.00E+00	4.18E-03	6.80E-08	1.004	1.00	FLAG FOR LOSS OF DC PANEL INITIATING EVENT
OPHE_DCPN	6.42E-02	4.17E-03	1.06E-06	1.004	1.06	HUMAN ERROR LEADING TO DEENERGIZATION OF PANEL S001
UOL3	3.33E-02	3.98E-03	1.94E-06	1.004	1.12	LOCA SIGNAL ON OPPOSITE UNIT, LOSP FOR 3 HOURS
RPA	2.02E-01	3.96E-03	3.18E-07	1.004	1.02	RETURN TO POWER OP: MSIVs REMAIN OPEN
NBREC1	6.00E-02	3.73E-03	1.01E-06	1.004	1.06	RESTORE NORMAL AC, RESTART CONDENSATE (FAST XFER FAILED)
SWREC2	1.00E-01	3.71E-03	6.03E-07	1.004	1.03	PLUGGING OF TRAVELING SCREEN NOT RECOVERED
MNUNQT_TRNB	1.12E-03	3.64E-03	5.27E-05	1.004	4.24	LOOP B TORUS COOLING VALVE MAINTENANCE
MNUN1R43S001C	5.51E-03	3.59E-03	1.06E-05	1.004	1.65	DGC MAINTENANCE
CC-HS-48	1.19E-04	3.52E-03	4.80E-04	1.004	30.52	2/2, MVFO1E11F068A MVFO1E11F068B
AVFO1N21F202	2.00E-03	3.18E-03	2.59E-05	1.003	2.59	CONDENSATE PUMP MINI FLOW VALVE 1N21F202 FAILS TO OPEN
AVFO1N21F458	2.00E-03	3.18E-03	2.59E-05	1.003	2.59	CONDENSATE BOOSTER PUMP MINI FLOW VALVE 1N21F458 FAILS TO
CC-SW-2	5.49E-03	3.15E-03	9.32E-06	1.003	1.57	1/4, PMOS1P41C001B
CC-DGS-16	6.84E-03	3.13E-03	7.44E-06	1.003	1.45	1/3, DG1R1R43S001B
CC-NS-13	2.45E-04	3.05E-03	2.02E-04	1.003	13.45	1/4, TUFD1B21N690B
CC-NS-15	2.45E-04	3.05E-03	2.02E-04	1.003	13.45	1/4, TUFD1B21N690D
BSSH1R22S017	9.02E-06	3.03E-03	5.46E-03	1.003	336.78	DC SWITCHGEAR S017 FAILS DURING OPERATION
BSSH1R23S004	9.02E-06	3.01E-03	5.41E-03	1.003	333.78	600-V BUS D FAILS DURING OPERATION
MNUN1R43S001B	7.21E-03	3.00E-03	6.76E-06	1.003	1.41	DGB MAINTENANCE
BSSH1R22S016	9.02E-06	2.92E-03	5.25E-03	1.003	324.15	DC SWITCHGEAR S016 FAILS DURING OPERATION
MNUNSB_BATT	2.00E-04	2.90E-03	2.35E-04	1.003	15.48	STATION BATTERY B DISCONNECTED FROM BUS
YEFRC	5.72E-01	2.83E-03	8.03E-08	1.003	1.00	FAILURE TO RECOVER CONDENSER VACUUM & RESTART FEEDWATER GIV
CC-DGS-14	1.80E-05	2.79E-03	2.52E-03	1.003	155.80	3/3, DGSR1R43S001C DGSR1R43S001A DGSR1R43S001B
MIUNNS	1.31E-05	2.72E-03	3.37E-03	1.003	208.33	MISCALIBRATION OF TRIP UNITS - FAILURE OF LOW PRESSURE PERM
KRSDP3	1.00E-03	2.68E-03	4.35E-05	1.003	3.68	TRANSFER OF CONTROL TO REMOTE S/D PANEL FAILS
GRB2&3	3.60E-01	2.64E-03	1.19E-07	1.003	1.00	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSE
MVXC1E51F007	5.06E-04	2.56E-03	8.22E-05	1.003	6.06	MOTOR OPERATED VALVE 1E51-F007 TRANSFERS CLOSED
MVXC1E51F008	5.06E-04	2.56E-03	8.22E-05	1.003	6.06	MOTOR OPERATED VALVE 1E51-F008 TRANSFERS CLOSED
MVXC1E51F010	5.06E-04	2.56E-03	8.22E-05	1.003	6.06	MOTOR OPERATED VALVE 1E51-F010 TRANSFERS CLOSED
MVXC1E51F012	5.06E-04	2.56E-03	8.22E-05	1.003	6.06	MOTOR OPERATED VALVE 1E51-F012 TRANSFERS CLOSED
CC-DGS-9	3.03E-03	2.52E-03	1.35E-05	1.003	1.83	1/3, DGSR1R43S001A
OPHEHP2	1.02E-02	2.41E-03	3.83E-06	1.002	1.23	OPER FAILS TO CONTROL LEVEL BELOW L8 GIVEN HPCI & RCIC L2 I
BSSH1R23S003	9.02E-06	2.39E-03	4.29E-03	1.002	264.86	600-V BUS C FAILS
MIUNDGS_DGB	5.84E-03	2.31E-03	6.42E-06	1.002	1.39	DIESEL B ALIGNED TO UNIT 2 AND UNIT 2 ALSO IN LOSP
%FL-BUSD	1.00E+00	2.25E-03	3.66E-08	1.002	1.00	FLAG FOR INITIATING EVENT CAUSED BY LOSS OF 600V BUS D
XXBD_TRANSIENT	2.00E-01	2.25E-03	1.83E-07	1.002	1.01	LOSS OF BUS D CAUSES INITIATING EVNET (TRIP)
BSSH1R23S004___I	3.29E-03	2.23E-03	1.10E-05	1.002	1.68	600-V BUS D FAILS DURING OPERATION
MNUNSA_BATT	2.00E-04	2.20E-03	1.78E-04	1.002	11.98	BATTERY DISCONNECTED FROM BUS
NBREC2	6.00E-02	2.17E-03	5.87E-07	1.002	1.03	RESTORE NORMAL AC, RESTART CONDENSATE (XD LOAD SHED FAILED)
MIUNLC	1.31E-05	2.13E-03	2.65E-03	1.002	163.93	MISCALIBRATION FAILS BOTH DIVISIONS OF LEVEL 1 SIGNAL
MNUNDC_BATT	2.00E-04	2.02E-03	1.64E-04	1.002	11.08	BATTERY DISCONNECTED FROM PANEL
OPHEHP3	2.98E-03	1.96E-03	1.07E-05	1.002	1.66	OPERATOR FAILS TO RESTART AND CONTROL HPCI/RCIC
OPHENOACT4	2.24E-03	1.94E-03	1.41E-05	1.002	1.87	OPERATORS FAIL TO TAKE ACTIONDURING ATWS
CC-SW-36	2.68E-03	1.93E-03	1.17E-05	1.002	1.72	1/4, CVFR1P41F311D
CC-DGS-8	3.03E-03	1.92E-03	1.03E-05	1.002	1.63	1/3, DGSR1R43S001C

Event Name	Probability	Fus Ves	BimBm	Red W	Ach W	Description
MNUNRS_TRNB	3.56E-03	1.86E-03	8.47E-06	1.002	1.52	PUMP E11-C002B MAINTENANCE
%FL-LOBUSE	1.00E+00	1.79E-03	2.90E-08	1.002	1.00	FLAG FOR LOSS OF BUS E OR SUPPLY HARDWARE INITIATING EVENT
BSSH1R22S005___I	3.29E-03	1.79E-03	8.81E-06	1.002	1.54	4KV BUS E FAILS TO OPERATE
FCA	4.18E-02	1.74E-03	6.78E-07	1.002	1.04	OPERATOR FAILS TO CONTROL LEVEL NEAR -100" GIVEN ATWS WITH
CC-DGS-4	1.92E-04	1.73E-03	1.46E-04	1.002	10.01	2/3, DGLR1R43S001C DGLR1R43S001A
OPHEEPA	5.91E-03	1.71E-03	4.71E-06	1.002	1.29	OPERATOR FAILS TO ALIGN 600-V BUS TO BACKUP 4160-V BUS
OPHECHRGR	1.00E-01	1.69E-03	2.75E-07	1.002	1.02	OPERATOR FAILS TO SWITCH TO STANDBY CHARGER
CVFO1E41F005	2.87E-04	1.65E-03	9.34E-05	1.002	6.74	CHECK VALVE F005 FAILS TO OPEN ON DEMAND
CVFO1E41F019	2.87E-04	1.65E-03	9.34E-05	1.002	6.74	CHECK VALVE F019 FAILS TO OPEN
CVFO1E41F049	2.87E-04	1.65E-03	9.34E-05	1.002	6.74	CHECK VALVE F049 FAILS TO OPEN
CC-RD-14	2.84E-04	1.63E-03	9.34E-05	1.002	6.74	1/2, CVFO1B21F010B
OPHE1P41D103	1.00E-01	1.61E-03	2.62E-07	1.002	1.01	OPERATOR FAILS TO CLEAN STRAINER BY BACKWASH
MNUNCW_TRNA	1.54E-02	1.60E-03	1.69E-06	1.002	1.10	RBCCW TRAIN A MAINTENANCE ALIGNMENT
MNUNCW_TRNB	1.54E-02	1.60E-03	1.69E-06	1.002	1.10	RBCCW PUMP B MAINTENANCE ALIGNMENT
COBSFRBS	6.17E-01	1.55E-03	4.07E-08	1.002	1.00	RECOVERY RULE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODE
CC-NS-24	1.27E-04	1.52E-03	1.94E-04	1.002	12.94	1/4, RLFD1B21K307D
CC-NS-26	1.27E-04	1.52E-03	1.94E-04	1.002	12.94	1/4, RLFD1B21K309D
TTUNSL	1.37E-03	1.51E-03	1.79E-05	1.002	2.10	MONTHLY RECIRC. TEST & QRTRLY. PUMP OP. TEST
HQA	2.45E-02	1.50E-03	9.92E-07	1.001	1.06	OPERATORS FAIL TO TERMINATE FLOW & CNTL LEVEL NEAR TAF GIV
OPHEINADS4	1.71E-03	1.47E-03	1.40E-05	1.001	1.86	OPERATORS FAIL TO INHIBIT ADS DURING ATWS
MVXC1N21F018B	9.90E-04	1.43E-03	2.34E-05	1.001	2.44	MOTOR-OPERATED VALVE 1N21F018B TRANSFERS CLOSED
MVXC1N21F022A	9.90E-04	1.43E-03	2.34E-05	1.001	2.44	MOTOR-OPERATED VALVE 1N21F022A TRANSFERS CLOSED
CC-DGS-6	1.92E-04	1.41E-03	1.20E-04	1.001	8.36	2/3, DGLR1R43S001A DGLR1R43S001B
MNUNRD_TRNA	2.94E-02	1.41E-03	7.77E-07	1.001	1.05	CRD PUMP A MAINTENANCE
OPHERD1	1.00E-01	1.41E-03	2.29E-07	1.001	1.01	OPERATORS FAIL TO MANUALLY START CRD PUMP
OPHEEPANOLINK	5.00E-02	1.41E-03	4.57E-07	1.001	1.03	OPERATOR FAILS TO ALIGN 600-V BUS TO BACKUP 4160-V BUS
CVFO1E51F011	2.87E-04	1.36E-03	7.72E-05	1.001	5.75	CHECK VALVE 1E51F011 FAILS TO OPEN
CVFO1E51F014	2.87E-04	1.36E-03	7.72E-05	1.001	5.75	CHECK VALVE 1E51-F014 FAILS TO OPEN
CVFO1E51F040	2.87E-04	1.36E-03	7.72E-05	1.001	5.75	CHECK VALVE 1E51F040 FAILS TO OPEN
CC-RD-13	2.84E-04	1.35E-03	7.72E-05	1.001	5.75	1/2, CVFO1B21F010A
MNUNHS_LOOP1	6.83E-03	1.35E-03	3.21E-06	1.001	1.20	LOOP 1 MAINTENANCE - RHRSW
PXOR1B21N090B	1.10E-04	1.30E-03	1.92E-04	1.001	12.83	PRESSURE TRANSMITTER 1B21-N090B FAILS DURING OPERATION
PXOR1B21N090D	1.10E-04	1.30E-03	1.92E-04	1.001	12.83	PRESSURE TRANSMITTER 1B21-N090D FAILS DURING OPERATION
SWXO1R26M031C	1.11E-04	1.26E-03	1.85E-04	1.001	12.37	THROWOVER SWITCH TRANSFERS OPEN
SWXO1R26M031D	1.11E-04	1.26E-03	1.85E-04	1.001	12.37	THROWOVER SWITCH TRANSFERS OPEN
CC-NS-22	6.45E-06	1.25E-03	3.14E-03	1.001	194.04	4/4, TUFD1B21N690A TUFD1B21N690B TUFD1B21N690C TUFD1B21N690
CC-RS-15	4.16E-05	1.22E-03	4.78E-04	1.001	30.41	4/4, PMSS1E11C002C PMSS1E11C002A PMSS1E11C002B PMSS1E11C002
MNUNPS_TRND	1.57E-02	1.22E-03	1.26E-06	1.001	1.08	MAINT ON PSW PUMP C001D
COBS	7.66E-01	1.17E-03	2.47E-08	1.001	1.00	RECOVERY RULE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODE
FL_FRB	1.00E+00	1.17E-03	1.89E-08	1.001	1.00	FLAG FOR FAILURE TO RESTART FW/RECOVER CONDENSATE GIVEN LO
YEFRB	1.92E-01	1.17E-03	9.87E-08	1.001	1.00	FAILURE TO RESTART FEEDWATER & RECOVER CONDENSATE GIVEN LOF
MNUNRPSB	2.64E-03	1.17E-03	7.18E-06	1.001	1.44	MG SET IN MAINTENANCE
SORVC	2.13E-05	1.17E-03	8.89E-04	1.001	55.70	TWO SRVS FAIL TO RECLOSE GIVEN 5 HAVE OPENED
%LLOCA	2.62E-04	1.15E-03	7.15E-05	1.001	5.40	LARGE BREAK LOCA INSIDE THE DRYWELL
CC-DGS-10	3.03E-03	1.14E-03	6.10E-06	1.001	1.37	1/3, DGSR1R43S001B
MIUNSL	1.04E-03	1.12E-03	1.75E-05	1.001	2.08	TYPE A HUMAN ERROR - FAILURE TO RESTORE SYSTEM FOLLOWING MO
DEADS2	1.00E-02	1.10E-03	1.79E-06	1.001	1.11	ADS FAILS GIVEN LOSS OF 1 DIVISION OF DC (OP DO NOT INHIBIT
%ULHPCI	1.34E-04	1.08E-03	1.31E-04	1.001	9.04	HPCI STEAM LINE BREAK INITIATING EVENT
%ULRCIC	1.34E-04	1.08E-03	1.31E-04	1.001	9.04	RCIC STEAM LINE BREAK INITIATING EVENT

Event Name	Probability	Fus Ves	BimBm	Red W	Ach W	Description
%ULRWCU	1.34E-04	1.08E-03	1.31E-04	1.001	9.04	RWCU LINE BREAK INITIATING EVENT
MNUN1R22S007	3.67E-05	1.05E-03	4.64E-04	1.001	29.55	MAINTENANCE ON BUS 4160VAC 1G
C2XO1R22S017_1B	6.43E-06	1.02E-03	2.57E-03	1.001	159.20	CIRCUIT BREAKER TRANSFERS OPEN
CC-RWISO-3	1.19E-04	9.91E-04	1.35E-04	1.001	9.31	2/2, MVFC1G31F001 MVFC1G31F004
CC-HPISO-3	1.19E-04	9.83E-04	1.34E-04	1.001	9.25	2/2, MVFC1E41F002 MVFC1E41F003
CC-RCISO-3	1.19E-04	9.83E-04	1.34E-04	1.001	9.25	2/2, MVFC1E51F007 MVFC1E51F008
MVXC1E41F002	1.76E-04	9.55E-04	8.82E-05	1.001	6.43	MOTOR OPERATED VALVE F002 TRANSFERS CLOSED
MVXC1E41F003	1.76E-04	9.55E-04	8.82E-05	1.001	6.43	MOTOR OPERATED VALVE F003 TRANSFERS CLOSED
MVXC1E41F004	1.76E-04	9.55E-04	8.82E-05	1.001	6.43	MOTOR OPERATED VALVE F004 TRANSFERS CLOSED
MVXC1E41F007	1.76E-04	9.55E-04	8.82E-05	1.001	6.43	MOTOR OPERATED VALVE F007 TRANSFERS CLOSED
SWXO1C71P001_B	1.11E-04	9.51E-04	1.39E-04	1.001	9.56	RPS BUS B SUPPLY SELECTOR SWITCH CONTACTS FAIL
CC-PS-11_____I	3.44E-04	9.48E-04	4.47E-05	1.001	3.75	3/4, PMOR1P41C001C PMOR1P41C001D PMOR1P41C001B (1 YEAR)
CC-PS-12_____I	3.44E-04	9.48E-04	4.47E-05	1.001	3.75	3/4, PMOR1P41C001C PMOR1P41C001D PMOR1P41C001A (1 YEAR)
CC-PS-13_____I	3.44E-04	9.48E-04	4.47E-05	1.001	3.75	3/4, PMOR1P41C001C PMOR1P41C001B PMOR1P41C001A (1 YEAR)
CC-PS-14_____I	3.44E-04	9.48E-04	4.47E-05	1.001	3.75	3/4, PMOR1P41C001D PMOR1P41C001B PMOR1P41C001A (1 YEAR)
SWXO1C71P001_A	1.11E-04	9.45E-04	1.38E-04	1.001	9.50	RPS BUS A SUPPLY SELECTOR SWITCH CONTACTS FAIL
HVXC1P41F063___I	2.54E-04	9.41E-04	6.02E-05	1.001	4.70	MANUAL VALVE TRANSFER CLOSED
SWXO1R26M031A__I	4.06E-02	9.38E-04	3.76E-07	1.001	1.02	SWITCH TRANSFER OPEN
SWXO1R26M031B__I	4.06E-02	9.38E-04	3.76E-07	1.001	1.02	SWITCH TRANSFER OPEN
CC-VM-7_____I	3.46E-04	8.10E-04	3.80E-05	1.001	3.34	3/3, FNSR1Z41B003B FNOR1Z41B003C FNOR1Z41B003A
MNUNSB_CHRG	7.68E-05	8.09E-04	1.71E-04	1.001	11.54	CHARGER SWAPPING IN PROGRESS
COAFWTQCA	2.67E-02	8.09E-04	4.92E-07	1.001	1.03	RECOVERY RULE ADDED FOR FORTE HYBRID CUTSET MODEL
CC-DGS-5	1.92E-04	8.07E-04	6.82E-05	1.001	5.20	2/3, DGLR1R43S001C DGLR1R43S001B
IAXTIE	1.00E-01	7.80E-04	1.27E-07	1.001	1.01	FAILURE TO CROSSTIE TO UNIT 2 INSTRUMENT AIR
S3PL1P41D103B	1.99E-04	7.67E-04	6.27E-05	1.001	4.86	DIVISION II STRAINER D103B PLUGS
MNUNRS_DIVI	4.74E-03	7.57E-04	2.59E-06	1.001	1.16	RHR LOOP 1 MAINT OR MISALIGNMENT OF VALVES IN LOOP 1 FLOW P
%ULFWA	6.70E-05	7.41E-04	1.80E-04	1.001	12.05	FEEDWATER LINE A BREAK INITIATING EVENT
%ULFWB	6.70E-05	7.41E-04	1.80E-04	1.001	12.05	FEEDWATER LINE B BREAK INITIATING EVENT
CC-DGS-40	6.65E-05	7.28E-04	1.78E-04	1.001	11.95	2/3, CBFC1R22S005_5 CBFC1R22S007_6
CC-FWAISO-3	1.73E-04	7.12E-04	6.70E-05	1.001	5.12	2/2, CVFC1B21F010A CVFC1B21F032A
CC-FWBISO-6	1.73E-04	7.12E-04	6.70E-05	1.001	5.12	2/2, CVFC1B21F010B CVFC1B21F032B
SWXO1R26M032C	1.11E-04	7.12E-04	1.04E-04	1.001	7.40	THROWOVER SWITCH CONTACTS FAIL OPEN
SWFO1R44S001	1.69E-03	7.09E-04	6.82E-06	1.001	1.42	STATIC TRANSFER SWITCH FAILS DURING OPERATION
QCA	8.62E-04	7.08E-04	1.34E-05	1.001	1.82	MAIN CONDENSER UNAVAILABLE FOR DHR (MSIVs OPEN)
S3PL1P41D103A__I	7.26E-02	7.07E-04	1.58E-07	1.001	1.01	PSW STRAINER D103A PLUGS
S3PL1P41D103A	1.99E-04	7.07E-04	5.77E-05	1.001	4.55	DIVISION I STRAINER D103A PLUGS
S2PL1E11D003B	2.15E-04	6.98E-04	5.28E-05	1.001	4.25	STRAINER D003B PLUGS
CC-DGS-36	1.18E-03	6.90E-04	9.47E-06	1.001	1.58	1/3, CBFC1R22S005_5
COBSFWLS	2.13E-01	6.80E-04	5.20E-08	1.001	1.00	
CC-HS-46	2.18E-03	6.71E-04	5.00E-06	1.001	1.31	1/2, MVFO1E11F068A
MCC	3.19E-01	6.69E-04	3.41E-08	1.001	1.00	MSIVS FAIL TO REMAIN OPEN GIVEN LOCV WITH FAILURE TO RESTAR
OPHEEPBNOLINK	1.00E-01	6.65E-04	1.08E-07	1.001	1.01	OPERATOR FAILS TO ALIGN 600-V BUS TO BACKUP 4160-V BUS
AVFO2P41F340	2.00E-03	6.43E-04	5.22E-06	1.001	1.32	AIR-OPERATED VALVE 2P41F340 FAILS TO OPEN
CC-NS-33	3.36E-06	6.36E-04	3.07E-03	1.001	190.19	4/4, RLFD1B21K307C RLFD1B21K307D RLFD1B21K309C RLFD1B21K309
CC-DGS-39	6.65E-05	6.28E-04	1.54E-04	1.001	10.45	2/3, CBFC1R22S005_5 CBFC1R22S006_6
C3XO1R22S017_4T	6.22E-05	6.24E-04	1.63E-04	1.001	11.03	COMMON CHARGER OUTPUT BREAKER TRANSFERS OPEN
CC-DGS-26	5.87E-05	6.14E-04	1.70E-04	1.001	11.46	2/3, DGSS1R43S001A DGSS1R43S001C
S3PL1P41D103B__I	7.26E-02	6.13E-04	1.37E-07	1.001	1.01	PSW STRAINER D103B PLUGS - 1 YEAR
MNUN1R22S006	3.67E-05	6.01E-04	2.66E-04	1.001	17.37	MAINTENANCE ON 4160VAC 1F

Event Name	Probability	Fus Ves	BimBm	Red W	Ach W	Description
INOR1R44S001	1.48E-03	5.80E-04	6.38E-06	1.001	1.39	STATIC INVERTER FAILS DURING OPERATION
MNUNIA_CCWB	1.47E-02	5.78E-04	6.38E-07	1.001	1.04	CCW PUMP B MAINTENANCE
CC-DGS-38	1.18E-03	5.55E-04	7.62E-06	1.001	1.47	1/3, CBFC1R22S007_6
MNUNPS_TRNC	1.57E-02	5.55E-04	5.74E-07	1.001	1.03	MAINT ON PSW PUMP C001C
MVXC1E11F003B	1.76E-04	5.50E-04	5.08E-05	1.001	4.13	MOTOR-OPERATED VALVE 1E11F003B TRANSFERS CLOSED
MVXC1E11F047B	1.76E-04	5.50E-04	5.08E-05	1.001	4.13	MOTOR-OPERATED VALVE 1E11F047B TRANSFERS CLOSED
%FL-LOBUSG	1.00E+00	5.31E-04	8.63E-09	1.001	1.00	FLAG FOR LOSS OF BUS G INITIATING EVENT
BSSH1R22S007___I	3.29E-03	5.31E-04	2.62E-06	1.001	1.16	4KV BUS G FAILS DURING OPERATION
XXBG_TRANSIENT	2.00E-01	5.31E-04	4.31E-08	1.001	1.00	LOSS OF BUS G CAUSES AN INITIATING EVENT (TRIP)
CC-LC-11	3.36E-06	5.23E-04	2.53E-03	1.001	156.48	4/4, RLFD1E21K8A RLFD1E21K7B RLFD1E21K7A RLFD1E21K8B
CC-LC-22	3.36E-06	5.23E-04	2.53E-03	1.001	156.48	4/4, RLFD1B21K370C RLFD1B21K361B RLFD1B21K361A RLFD1B21K310
AVXC1P41F066	3.89E-05	4.85E-04	2.02E-04	1.000	13.46	AIR OPERATED VALVE F066 TRANSFERS CLOSED
CC-LC-33	3.09E-06	4.75E-04	2.49E-03	1.000	154.53	4/4, TUFD1B21N691D TUFD1B21N691B TUFD1B21N691A TUFD1B21N691
CC-VM-22	7.67E-03	4.55E-04	9.65E-07	1.000	1.06	1/3, CHSS1Z41B008B
CPOS1R43C010C	3.29E-03	4.55E-04	2.25E-06	1.000	1.14	AIR COMPRESSOR FAIL TO START
MNUNPS_TRNA	1.57E-02	4.48E-04	4.63E-07	1.000	1.03	MAINT ON PSW PUMP C001A
C3XO1R22S016_4TI	2.27E-02	4.46E-04	3.19E-07	1.000	1.02	COMMON CHARGER OUTPUT BREAKER TRANSFERS OPEN
CC-DGS-37	1.18E-03	4.44E-04	6.10E-06	1.000	1.37	1/3, CBFC1R22S006_6
OPHEINADS1	2.69E-03	4.41E-04	2.67E-06	1.000	1.16	OPERATORS FAIL TO INHIBIT ADS GIVEN LOCA SIGNAL
MNUNDC_CHRG	7.68E-05	4.37E-04	9.25E-05	1.000	6.69	CHARGER SWAPPING IN PROGRESS
MVXC1E21F004A	2.98E-03	4.34E-04	2.37E-06	1.000	1.15	DISCHARGE MOV F004A TRANSFERS CLOSED
CC-HS-5	1.25E-04	4.31E-04	5.59E-05	1.000	4.44	2/4, PMSS1E11C001B PMSS1E11C001D
BCOR1R42S029	4.46E-04	4.31E-04	1.57E-05	1.000	1.96	STATION BATTERY CHARGER FAILS TO PROVIDE OUTPUT
BCOR1R42S030	4.46E-04	4.31E-04	1.57E-05	1.000	1.96	STATION BATTERY CHARGER FAILS TO PROVIDE OUTPUT
CC-JS-2	2.18E-03	4.30E-04	3.20E-06	1.000	1.20	1/2, MVFO1E11F015B
CC-PS-15	2.13E-07	4.25E-04	3.20E-02	1.000	1.97E+03	4/4, PMOR1P41C001C PMOR1P41C001D PMOR1P41C001B PMOR1P41C001
CC-DGS-25	5.87E-05	4.21E-04	1.17E-04	1.000	8.17	2/3, DGSS1R43S001A DGSS1R43S001B
CC-IS-18	1.19E-05	4.18E-04	5.72E-04	1.000	36.20	4/4, MVFC1P41F310D MVFC1P41F310B MVFC1P41F310C MVFC1P41F310
CC-SW-35	2.68E-03	4.15E-04	2.52E-06	1.000	1.15	1/4, CVFR1P41F311B
CC-SW-33	2.68E-03	4.14E-04	2.51E-06	1.000	1.15	1/4, CVFR1P41F311C
CC-IS-5	2.18E-03	4.07E-04	3.03E-06	1.000	1.19	1/4, MVFC1P41F310B
CC-DGS-41	6.65E-05	4.01E-04	9.82E-05	1.000	7.04	2/3, CBFC1R22S006_6 CBFC1R22S007_6
CC-SW-19	2.84E-04	3.98E-04	2.27E-05	1.000	2.40	1/2, CVFO1P41F438B
CC-SW-34	2.68E-03	3.96E-04	2.40E-06	1.000	1.15	1/4, CVFR1P41F311A
PR9	4.47E-04	3.89E-04	1.41E-05	1.000	1.87	PRESS RELIEF INADEQ: ATWS (3+ MORE SRVS FTO)
CC-NS-16	2.15E-06	3.88E-04	2.93E-03	1.000	181.64	2/4, TUFD1B21N690A TUFD1B21N690B
CC-NS-21	2.15E-06	3.88E-04	2.93E-03	1.000	181.64	2/4, TUFD1B21N690C TUFD1B21N690D
CC-DGS-19	4.13E-05	3.87E-04	1.52E-04	1.000	10.37	2/3, DG1R1R43S001A DG1R1R43S001C
CC-QT-33	1.19E-04	3.76E-04	5.12E-05	1.000	4.15	2/2, MVFO1E11F028B MVFO1E11F028A
MNUNCS_TRNA	2.55E-03	3.72E-04	2.37E-06	1.000	1.15	CS LOOP A MAINTENANCE
MNUNXD	6.96E-05	3.67E-04	8.56E-05	1.000	6.27	SUT D INOP FOR MAINTENANCE
FAILRATERATIO	1.00E-01	3.62E-04	5.89E-08	1.000	1.00	ASSUMED RATIO OF PANEL TO MCC FAILURE RATES. (RISKMAN MODEL
AVXC1P41F067___I	1.42E-02	3.60E-04	4.12E-07	1.000	1.02	AIR-OPERATED VALVE F067 TRANSFERS CLOSED (1 YR)
CBFC1R25S064_39	9.62E-04	3.48E-04	5.87E-06	1.000	1.36	CROSS TIE CIRCUIT BREAKER FAILS TO CLOSE
CBFC1R25S064_40	9.62E-04	3.48E-04	5.87E-06	1.000	1.36	CROSS TIE CIRCUIT BREAKER FAIL TO CLOSE
CBFC1R25S065_39	9.62E-04	3.48E-04	5.87E-06	1.000	1.36	CROSS TIE CIRCUIT BREAKER FAILS TO CLOSE
CBFC1R25S065_40	9.62E-04	3.48E-04	5.87E-06	1.000	1.36	CROSS TIE CIRCUIT BREAKER FAILS TO CLOSE
CC-QV-15	4.74E-05	3.43E-04	1.18E-04	1.000	8.24	4/4, AVFO1T48F318 AVFO1T48F319 AVFO1T48F320 AVFO1T48F326
OPHEISOPSWF310	1.00E+00	3.34E-04	5.43E-09	1.000	1.00	OPERATORS FAIL TO MANUALLY ISOLATE F310

Event Name	Probability	Fus Ves	BimBm	Red W	Ach W	Description
M2XC1E11F068A	1.35E-03	3.32E-04	4.00E-06	1.000	1.25	MOV F068A FAILS TO CONTROL FLOW - TRANSFERS CLOSED
BTFD1R42S002A	4.54E-04	3.26E-04	1.17E-05	1.000	1.72	DIESEL BATTERY A FAILS TO PROVIDE POWER ON LOSS OF CHARGERS
CC-VM-16_____I	9.12E-01	3.24E-04	5.77E-09	1.000	1.00	1/3, CHOR1Z41B008A
CC-VM-17_____I	9.12E-01	3.24E-04	5.77E-09	1.000	1.00	1/3, CHOR1Z41B008C
%FLD24	1.16E-06	3.21E-04	4.49E-03	1.000	277.15	FLOOD INITIATED IN RB N. WORKING AREA AT 158'FROM FPS (1205
DCREC1	1.00E-02	3.18E-04	5.16E-07	1.000	1.03	DC NOT RESTORED (%DCPAN)
CC-CS-7	2.18E-03	3.18E-04	2.37E-06	1.000	1.15	1/2, MVFO1E21F005A
CC-PS-3	1.54E-04	3.14E-04	3.30E-05	1.000	3.03	1/4, PMOR1P41C001B
CBFC1R23S003_9M	9.62E-04	3.10E-04	5.23E-06	1.000	1.32	600-V ALT SUPPLY BRKR FROM XFMR CD FAILS TO CLOSE
MGOR1C71S001B	8.62E-04	3.06E-04	5.76E-06	1.000	1.35	RPS MG SET FAILS TO OPERATE
CVFO1C41F006	2.87E-04	3.02E-04	1.71E-05	1.000	2.05	CHECK VALVE F006 FAILS TO OPEN
CVFO1C41F007	2.87E-04	3.02E-04	1.71E-05	1.000	2.05	CHECK VALVE F007 FAILS TO OPEN
MNUNJS_TRNB	1.54E-03	2.97E-04	3.14E-06	1.000	1.19	LOOP B LPCI VALVE MAINTENANCE
MNUNVM_TRNA	1.41E-02	2.96E-04	3.40E-07	1.000	1.02	AHU OR CHILLER A IN MAINTENANCE
MNUNVM_TRNC	1.41E-02	2.96E-04	3.40E-07	1.000	1.02	AHU OR CHILLER C IN MAINTENANCE
BCOR1R42S026___I	1.63E-01	2.96E-04	2.95E-08	1.000	1.00	BATTERY CHARGER FAIL DURING OPERATION
BCOR1R42S027___I	1.63E-01	2.96E-04	2.95E-08	1.000	1.00	BATTERY CHARGER FAIL DURING OPERATION
CC-PS-2	1.54E-04	2.94E-04	3.09E-05	1.000	2.90	1/4, PMOR1P41C001D
PMSS1E41AUXOIL	3.29E-03	2.94E-04	1.45E-06	1.000	1.09	HPCI AUXILIARY OIL PUMP FAILS TO RESTART ON HPCI TRIP
CC-PS-8	2.32E-06	2.81E-04	1.97E-03	1.000	121.96	2/4, PMOR1P41C001D PMOR1P41C001B
AVXC1T48F082	3.89E-05	2.76E-04	1.16E-04	1.000	8.11	VENT VALVE F082 TRANSFERS CLOSED
AVXO1T46F005	3.89E-05	2.76E-04	1.16E-04	1.000	8.11	AOV F005 TRANSFERS OPEN
AVXO1T48F081	3.89E-05	2.76E-04	1.16E-04	1.000	8.11	SGTS ISOLATION VALVE F081 TRANSFERS OPEN
XROR1R23S003___I	4.56E-03	2.73E-04	9.74E-07	1.000	1.06	STATION SERVICE TRANSFORMER C FAILS TO OPERATE
CC-RWISO-2	2.18E-03	2.69E-04	2.00E-06	1.000	1.12	1/2, MVFC1G31F004
OPHEHI_STARTHPI	3.78E-03	2.66E-04	1.14E-06	1.000	1.07	OPERATOR FAILS TO MANUALLY INITIATE HIGH PRESSURE INJECTION
CC-DGS-18	4.13E-05	2.66E-04	1.05E-04	1.000	7.44	2/3, DG1R1R43S001A DG1R1R43S001B
AVXC1E21F019A	1.81E-03	2.59E-04	2.32E-06	1.000	1.14	AOV F019A TRANSFERS CLOSED
MNUN1R22S005	3.67E-05	2.57E-04	1.14E-04	1.000	8.01	MAINTENANCE ON BUS 4160VAC 1E
CC-RD-15	2.49E-06	2.50E-04	1.63E-03	1.000	101.10	2/2, CVFO1B21F010A CVFO1B21F010B
CC-RS-3	7.78E-04	2.48E-04	5.19E-06	1.000	1.32	1/4, PMSS1E11C002B
MNUNHS_PUMPA	1.62E-02	2.47E-04	2.48E-07	1.000	1.02	PUMP C001A MAINTENANCE
%FLOOD4	9.25E-07	2.44E-04	4.28E-03	1.000	264.14	FLOOD INITIATED IN RB S. WORKING AREA AT 158'FROM FPS (1203
OPHESL1	1.00E-01	2.43E-04	3.95E-08	1.000	1.00	OPERATOR RECOVERY
BCOR1R42S032C	4.46E-04	2.41E-04	8.76E-06	1.000	1.54	NORMAL CHARGER FAILS DURING OPERATION
CC-CS-1	1.72E-03	2.40E-04	2.26E-06	1.000	1.14	1/2, PMSS1E21C001A
FUSO1R42S001B_A	2.21E-05	2.37E-04	1.75E-04	1.000	11.75	2000A FUSE IN BOX A BLOWS PREMATURELY
FUSO1R42S001B_B	2.21E-05	2.37E-04	1.75E-04	1.000	11.75	2000A FUSE IN BOX B BLOWS PREMATURELY
FUSO1R42S001B_C	2.21E-05	2.37E-04	1.75E-04	1.000	11.75	2000A FUSE IN BOX C BLOWS PREMATURELY
CC-SW-17	2.84E-04	2.29E-04	1.31E-05	1.000	1.81	1/2, CVFO1P41F064
CC-DGS-27	5.87E-05	2.26E-04	6.26E-05	1.000	4.85	2/3, DGSS1R43S001B DGSS1R43S001C
BSSH1R22S007	9.02E-06	2.26E-04	4.06E-04	1.000	26.02	4KV BUS G FAILS DURING OPERATION
MIUNHS_PRSW	1.31E-05	2.25E-04	2.79E-04	1.000	18.15	MISCALIBRATION OF PRESS. SWITCHES - F068A & B NO PERMISSIVE
CC-LC-13	1.27E-04	2.20E-04	2.80E-05	1.000	2.72	1/4, RLFD1B21K361B
CC-LC-15	1.27E-04	2.20E-04	2.80E-05	1.000	2.72	1/4, RLFD1B21K310D
CC-LC-2	1.27E-04	2.20E-04	2.80E-05	1.000	2.72	1/4, RLFD1E21K7B
CC-LC-4	1.27E-04	2.20E-04	2.80E-05	1.000	2.72	1/4, RLFD1E21K8B
MNUNXC	6.96E-05	2.14E-04	4.99E-05	1.000	4.07	SUT C INOP FOR MAINTENANCE DURING POWER OPERATION
MIUNHS_LOOP1	1.04E-03	2.11E-04	3.29E-06	1.000	1.20	LOOP 1 VALVE MISALIGNMENT

Event Name	Probability	Fus Ves	BimBm	Red W	Ach W	Description
OLB	1.40E-03	2.10E-04	2.45E-06	1.000	1.15	OPERATORS FAIL TO INITIATE TORUS COOLING DURING ATWS (MSIVs
MCOR1R25S065	7.94E-06	2.07E-04	4.23E-04	1.000	27.01	R25S065 FAILS DURING OPERATION
M4XC1P41F303A	6.96E-07	2.06E-04	4.80E-03	1.000	296.41	MOTOR OPERATED VALVE F303A TRANSFERS CLOSED
CC-LC-23	1.17E-04	2.02E-04	2.80E-05	1.000	2.72	1/4, TUFD1B21N691D
CC-LC-24	1.17E-04	2.02E-04	2.80E-05	1.000	2.72	1/4, TUFD1B21N691B
CC-IS-3	6.71E-06	2.02E-04	4.88E-04	1.000	31.04	2/2, RLFD1P41K15A RLFD1P41K12A
XROR1R23S004	1.25E-05	1.97E-04	2.56E-04	1.000	16.75	STATION SERVICE TRANSFORMER D FAILS TO OPERATE
TTUNNS_CHANA	2.74E-03	1.96E-04	1.16E-06	1.000	1.07	CHANNEL A IN TEST
TTUNNS_CHANC	2.74E-03	1.96E-04	1.16E-06	1.000	1.07	CHANNEL C IN TEST
MVRE1E41F006	2.30E-03	1.96E-04	1.38E-06	1.000	1.08	HPCI PUMP DISCH MOV FAILS TO REOPEN ON HPCI RESTART
MVRE1E41F059	2.30E-03	1.96E-04	1.38E-06	1.000	1.08	HPCI LUBE OIL COOLING WATER VALVE FAILS TO REOPEN ON HPCI R
CC-CS-3	3.22E-04	1.96E-04	9.87E-06	1.000	1.61	2/2, PMSS1E21C001A PMSS1E21C001B
AVXC1E11F065B	6.30E-04	1.95E-04	5.04E-06	1.000	1.31	AIR-OPERATED TORUS SUCTION VALVE F065B TRANSFERS CLOSED
CC-SL-3	1.86E-04	1.95E-04	1.71E-05	1.000	2.05	2/2, PMSS1C41C001A PMSS1C41C001B
CC-PS-10_____I	8.46E-04	1.95E-04	3.74E-06	1.000	1.23	2/4, PMOR1P41C001B PMOR1P41C001A (1 YEAR)
CC-PS-5_____I	8.46E-04	1.95E-04	3.74E-06	1.000	1.23	2/4, PMOR1P41C001C PMOR1P41C001D (1 YEAR)
CC-PS-6_____I	8.46E-04	1.95E-04	3.74E-06	1.000	1.23	2/4, PMOR1P41C001C PMOR1P41C001B (1 YEAR)
CC-PS-7_____I	8.46E-04	1.95E-04	3.74E-06	1.000	1.23	2/4, PMOR1P41C001C PMOR1P41C001A (1 YEAR)
CC-PS-8_____I	8.46E-04	1.95E-04	3.74E-06	1.000	1.23	2/4, PMOR1P41C001D PMOR1P41C001B - 1YR EXPOSURE
CC-PS-9_____I	8.46E-04	1.95E-04	3.74E-06	1.000	1.23	2/4, PMOR1P41C001D PMOR1P41C001A (1 YEAR)
CC-NS-27	1.12E-06	1.92E-04	2.79E-03	1.000	172.69	2/4, RLFD1B21K307C RLFD1B21K307D
CC-NS-32	1.12E-06	1.92E-04	2.79E-03	1.000	172.69	2/4, RLFD1B21K309C RLFD1B21K309D
CC-VS-30	4.74E-05	1.92E-04	6.58E-05	1.000	5.05	4/4, AVFO1P41F036A AVFO1P41F036B AVFO1P41F039A AVFO1P41F039
MVXC1E21F004B	2.98E-03	1.86E-04	1.01E-06	1.000	1.06	DISCHARGE MOV F004B TRANSFERS CLOSED
OPHEFW1N21F406	1.00E-01	1.85E-04	3.01E-08	1.000	1.00	OPERATOR FAILS TO OPEN 1N21F406 GIVEN FAILURE OF 1N21F212 T
CBFO1R22S007_10	4.20E-04	1.82E-04	7.04E-06	1.000	1.43	4KV BUS G NORMAL SUPPLY BREAKER FAILS TO OPEN
BTOR1R42S001B	1.81E-05	1.77E-04	1.59E-04	1.000	10.81	STATION BATTERY FAILS DURING OPERATION
OPHENS_RECOVER	1.00E-02	1.75E-04	2.84E-07	1.000	1.02	OPERATORS FAIL TO RECOVER FAILED PERMISSIVE SIGNAL
MNUNIS_VLVB	1.27E-03	1.75E-04	2.23E-06	1.000	1.14	VALVE MAINTENANCE - F310B
GRF2&3	7.60E-01	1.72E-04	3.68E-09	1.000	1.00	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL
CC-LC-18	1.12E-06	1.69E-04	2.46E-03	1.000	152.49	2/4, RLFD1B21K370C RLFD1B21K310D
CC-LC-19	1.12E-06	1.69E-04	2.46E-03	1.000	152.49	2/4, RLFD1B21K361B RLFD1B21K361A
CC-LC-7	1.12E-06	1.69E-04	2.46E-03	1.000	152.49	2/4, RLFD1E21K8A RLFD1E21K8B
CC-LC-8	1.12E-06	1.69E-04	2.46E-03	1.000	152.49	2/4, RLFD1E21K7B RLFD1E21K7A
%ULMSL	1.34E-04	1.65E-04	2.00E-05	1.000	2.23	MAIN STEAM LINE BREAK INITIATING EVENT
CC-RS-17	5.68E-04	1.64E-04	4.70E-06	1.000	1.29	1/4, CVFO1E11F031B
PPRP1B21A	1.50E-01	1.60E-04	1.73E-08	1.000	1.00	RECIRC. LOOP FAILED DUE TO BREAK IN LOOP (LARGE LOCA)
PPRP1B21B	1.50E-01	1.60E-04	1.73E-08	1.000	1.00	RECIRC. LOOP B FAILED DUE TO BREAK IN LOOP, GIVEN LARGE LOC
MNUNCS_TRNB	2.55E-03	1.59E-04	1.01E-06	1.000	1.06	CS LOOP B MAINTENANCE
HXPL1E11B001B	6.07E-05	1.58E-04	4.22E-05	1.000	3.60	HEAT EXCHANGER B001B RUPTURES/PLUGS
MNUNVM_TRNB	1.41E-02	1.58E-04	1.81E-07	1.000	1.01	AHU OR CHILLER B IN MAINTENANCE
CC-LC-29	1.03E-06	1.56E-04	2.46E-03	1.000	152.49	2/4, TUFD1B21N691D TUFD1B21N691C
CC-LC-30	1.03E-06	1.56E-04	2.46E-03	1.000	152.49	2/4, TUFD1B21N691B TUFD1B21N691A
CCFR2	2.28E-06	1.54E-04	1.10E-03	1.000	68.53	COMMON CAUSE FAILURE OF SENSOR RELAYS IN ALL CHANNELS
RZFD1C71K14_CCF	2.28E-06	1.54E-04	1.10E-03	1.000	68.53	COMMON CAUSE FAILURE OF K14 RELAYS IN ALL CHANNELS
MNUNHS_PUMPB	1.62E-02	1.52E-04	1.52E-07	1.000	1.01	PUMP C001B MAINTENANCE
MNUNHS_PUMPD	1.62E-02	1.52E-04	1.52E-07	1.000	1.01	PUMP C001D MAINTENANCE
FUSO1R42S002C	2.21E-05	1.51E-04	1.11E-04	1.000	7.86	FUSE BLOWS SPURIOUSLY
CC-HS-1	3.33E-03	1.50E-04	7.33E-07	1.000	1.04	1/4, PMSS1E11C001B

Event Name	Probability	Fus Ves	BimBm	Red W	Ach W	Description
CC-HS-2	3.33E-03	1.50E-04	7.33E-07	1.000	1.04	1/4, PMSS1E11C001D
FNSS1T41B005B	2.52E-03	1.50E-04	9.68E-07	1.000	1.06	COOLER B FAN FAILS TO START AFTER RECEIVING SIGNAL
CC-QV-10	2.32E-05	1.47E-04	1.03E-04	1.000	7.34	2/4, AVFO1T48F320 AVFO1T48F326
CC-QV-5	2.32E-05	1.47E-04	1.03E-04	1.000	7.34	2/4, AVFO1T48F318 AVFO1T48F319
CC-QV-6	2.32E-05	1.47E-04	1.03E-04	1.000	7.34	2/4, AVFO1T48F318 AVFO1T48F320
CC-QV-9	2.32E-05	1.47E-04	1.03E-04	1.000	7.34	2/4, AVFO1T48F319 AVFO1T48F326
VLFO1X41C005A	4.65E-04	1.47E-04	5.15E-06	1.000	1.32	DG A VENT SUPPLY LOUVERS FTO OR COMMON FAN LOGIC FAILS
AVXC1P41F066___I	1.42E-02	1.46E-04	1.67E-07	1.000	1.01	AIR-OPERATED VALVE TRANSFER CLOSED
MIUNCS_TRNA	1.04E-03	1.45E-04	2.26E-06	1.000	1.14	MISALIGNMENT OF CS LOOP A
CC-DGS-20	4.13E-05	1.44E-04	5.66E-05	1.000	4.48	2/3, DG1R1R43S001B DG1R1R43S001C
%FL-LODWC	1.00E+00	1.42E-04	2.32E-09	1.000	1.00	FLAG FOR LOSS OF DRYWELL COOLING INITIATING EVENT
VLFO1X41C005C	4.65E-04	1.42E-04	4.97E-06	1.000	1.31	DG C VENT SUPPLY LOUVERS FTO OR RELAY GLO FAILS TO ENERGIZE
OPHEVH1	1.00E+00	1.41E-04	2.29E-09	1.000	1.00	OPERATOR FAILS TO MANUALLY START FAN
TTUNLC_RL7A	2.74E-03	1.38E-04	8.19E-07	1.000	1.05	DIV. 1 TEST ALIGNMENT - RELAY 7A
TTUNLC_RL8A	2.74E-03	1.38E-04	8.19E-07	1.000	1.05	DIV. 1 TEST ALIGNMENT - RELAY 8A
AVFO1N21F212	2.00E-03	1.37E-04	1.11E-06	1.000	1.07	START-UP LEVEL CONTROL VALVE FAILS TO OPEN
CC-CS-8	2.18E-03	1.36E-04	1.01E-06	1.000	1.06	1/2, MVFO1E21F005B
OPHEDG1BPSW	2.50E-01	1.35E-04	8.79E-09	1.000	1.00	OPERATOR FAILS TO ALIGN BACKUP COOLING WATER SUPPLY FROM UN
CC-QT-32	2.18E-03	1.31E-04	9.75E-07	1.000	1.06	1/2, MVFO1E11F028A
EVFO1E41F3053	1.52E-03	1.29E-04	1.38E-06	1.000	1.09	HPCI STOP VALVE FAILS TO OPEN ON HPCI RESTART
CC-DGS-11	1.83E-05	1.29E-04	1.15E-04	1.000	8.07	2/3, DGSR1R43S001C DGSR1R43S001A
CBFO1R22S005_1	4.20E-04	1.27E-04	4.92E-06	1.000	1.30	CIRCUIT BREAKER FAIL TO OPEN
CBFO1R22S005_11	4.20E-04	1.27E-04	4.92E-06	1.000	1.30	NORMAL SUPPLY BRKR FAILS TO OPEN
MCOR1R25S002	7.94E-06	1.25E-04	2.55E-04	1.000	16.71	MCC FAILS DURING OPERATION
PASS2P41C002	2.49E-03	1.24E-04	8.09E-07	1.000	1.05	STANDBY SERVICE WATER PUMP 2P41C002 FAILS TO START
CBFO1R22S007_1	4.20E-04	1.23E-04	4.74E-06	1.000	1.29	CIRCUIT BREAKER FAIL TO OPEN
AVFO1P41F035B	2.00E-03	1.19E-04	9.68E-07	1.000	1.06	PSW VALVE F035B FAILS TO OPEN
FUSO1R42S001A_A	2.21E-05	1.11E-04	8.17E-05	1.000	6.03	2000A FUSE IN BOX A BLOWS PREMATURELY
FUSO1R42S001A_B	2.21E-05	1.11E-04	8.17E-05	1.000	6.03	2000A FUSE IN BOX B BLOWS PREMATURELY
FUSO1R42S001A_C	2.21E-05	1.11E-04	8.17E-05	1.000	6.03	2000A FUSE IN BOX C BLOWS PREMATURELY
CC-MSISO-9	1.33E-05	1.10E-04	1.34E-04	1.000	9.25	8/8, AVFC1B21F022A AVFC1B21F022B AVFC1B21F022C AVFC1B21F022
CC-NS-12	2.45E-04	1.10E-04	7.28E-06	1.000	1.45	1/4, TUFD1B21N690A
CC-NS-14	2.45E-04	1.10E-04	7.28E-06	1.000	1.45	1/4, TUFD1B21N690C
CC-CS-4	8.09E-04	1.07E-04	2.15E-06	1.000	1.13	1/2, PMSR1E21C001A
FUSO1R25S065	2.21E-05	1.07E-04	7.88E-05	1.000	5.85	SUPPLY FUSE PREMATURELY OPENS
CBFO1R25S036_25	4.20E-04	1.06E-04	4.10E-06	1.000	1.25	FEEDER BREAKER FAILS TO OPEN
CC-VM-15	2.50E-03	1.05E-04	6.81E-07	1.000	1.04	1/3, CHSR1Z41B008B
AVXC1E21F019B	1.81E-03	1.03E-04	9.18E-07	1.000	1.06	AOV F019B TRANSFERS CLOSED
BTOR1R42S002C	1.81E-05	1.02E-04	9.15E-05	1.000	6.63	DIESEL BATTERY C FAILS DURING OPERATION
CC-VM-21	1.26E-05	1.01E-04	1.30E-04	1.000	8.99	3/3, CHSR1Z41B008B CHOR1Z41B008A CHOR1Z41B008C
CC-SL-12	9.84E-05	9.94E-05	1.64E-05	1.000	2.01	2/2, XVFO1C41F004B XVFO1C41F004A
CC-CS-2	1.72E-03	9.71E-05	9.18E-07	1.000	1.06	1/2, PMSS1E21C001B
CC-HS-11	3.03E-05	9.62E-05	5.16E-05	1.000	4.18	3/4, PMSS1E11C001B PMSS1E11C001D PMSS1E11C001A
CC-SW-20	2.84E-04	9.22E-05	5.27E-06	1.000	1.32	1/2, CVFO1P41F438A
MVXC1P41F380B	1.08E-05	9.17E-05	1.37E-04	1.000	9.46	MOTOR OPERATED VALVE F380B TRANSFERS CLOSED
BTOR1R42S001A	1.81E-05	9.08E-05	8.17E-05	1.000	6.03	STATION BATTERY FAILS DURING OPERATION
BTFD1R42S002B	4.54E-04	8.44E-05	3.02E-06	1.000	1.19	DIESEL BATTERY C FAILS TO PROVIDE POWER ON LOSS OF CHARGERS
CC-VM-20_____I	2.30E-03	8.16E-05	5.76E-07	1.000	1.04	2/3, CHOR1Z41B008A CHOR1Z41B008C
CC-IS-8	2.69E-05	8.11E-05	4.90E-05	1.000	4.02	2/4, MVFC1P41F310D MVFC1P41F310B

Event Name	Probability	Fus Ves	BimBm	Red W	Ach W	Description
CC-VM-16	2.50E-03	8.08E-05	5.25E-07	1.000	1.03	1/3, CHOR1Z41B008A
CC-VM-17	2.50E-03	8.08E-05	5.25E-07	1.000	1.03	1/3, CHOR1Z41B008C
CC-CW-1	9.13E-04	7.89E-05	1.40E-06	1.000	1.09	1/3, PMOR1P42C001B
CC-CW-2	9.13E-04	7.89E-05	1.40E-06	1.000	1.09	1/3, PMOR1P42C001A
CC-SW-43	7.07E-05	7.83E-05	1.80E-05	1.000	2.11	4/4, CVFR1P41F311C CVFR1P41F311A CVFR1P41F311B CVFR1P41F311
OPHE1N11F002MISP	4.70E-03	7.76E-05	2.68E-07	1.000	1.02	MOVS IN HIGH PRESSURE PIPING MISPOSITIONED PRIOR TO TRIP
HVXC1E11F002B	3.19E-05	7.75E-05	3.95E-05	1.000	3.43	MANUAL VALVE F002B TRANSFERS CLOSED
HVXC1E11F014B	3.19E-05	7.75E-05	3.95E-05	1.000	3.43	MANUAL VALVE F014B TRANSFERS CLOSED
HVXC1E11F216B	3.19E-05	7.75E-05	3.95E-05	1.000	3.43	MANUAL VALVE F216B TRANSFERS CLOSED
HVXC1E11F217B	3.19E-05	7.75E-05	3.95E-05	1.000	3.43	MANUAL VALVE F217B TRANSFERS CLOSED
HVXC1E11F309D	3.19E-05	7.75E-05	3.95E-05	1.000	3.43	MANUAL VALVE F309D TRANSFERS CLOSED
CC-DGS-13	1.83E-05	7.61E-05	6.76E-05	1.000	5.16	2/3, DGSR1R43S001A DGSR1R43S001B
SORV3	2.00E-05	7.55E-05	6.13E-05	1.000	4.77	THREE OR MORE SRVS FAIL TO RECLOSE
MVXC1P41F380A	1.08E-05	7.40E-05	1.11E-04	1.000	7.82	MOTOR OPERATED VALVE F380A TRANSFERS CLOSED
MVXC1P41F380A__I	3.96E-03	7.40E-05	3.04E-07	1.000	1.02	MOTOR-OPERATED VALVE F380A TRANSFERS CLOSED (1 YR)
CC-PS-11	9.43E-07	7.32E-05	1.26E-03	1.000	78.57	3/4, PMOR1P41C001C PMOR1P41C001D PMOR1P41C001B
CC-PS-14	9.43E-07	7.32E-05	1.26E-03	1.000	78.57	3/4, PMOR1P41C001D PMOR1P41C001B PMOR1P41C001A
CBFO1R23S003_2M	4.20E-04	7.30E-05	2.82E-06	1.000	1.17	600-V LOAD BRKR FROM XFMR C FAILS TO OPEN
PCXC1P41D137___I	3.68E-04	7.25E-05	3.20E-06	1.000	1.20	PRESSURE REGULATOR D137 TRANSFERS CLOSED
PCXC1P41D138___I	3.68E-04	7.25E-05	3.20E-06	1.000	1.20	PRESSURE REGULATOR D138 TRANSFERS CLOSED
MVXC1P41F049___I	3.96E-03	7.12E-05	2.92E-07	1.000	1.02	PSW MOV F049 TRANSFERS CLOSED (1 YR)
MVXC1P41F050___I	3.96E-03	7.12E-05	2.92E-07	1.000	1.02	PSW MOV F050 TRANSFERS CLOSED (1 YEAR)
DUR1	3.00E-01	6.96E-05	3.77E-09	1.000	1.00	OFFSITE POWER RESTORED WITHIN 30 MINUTES
CC-CS-9	1.19E-04	6.87E-05	9.36E-06	1.000	1.58	2/2, MVFO1E21F005A MVFO1E21F005B
MNUNDA_BATT	2.00E-04	6.85E-05	5.55E-06	1.000	1.34	BATTERY DISCONNECTED FROM PANEL
CC-RS-10	3.04E-05	6.78E-05	3.62E-05	1.000	3.23	2/4, PMSS1E11C002B PMSS1E11C002D
CC-HS-12	3.03E-05	6.75E-05	3.62E-05	1.000	3.23	3/4, PMSS1E11C001B PMSS1E11C001D PMSS1E11C001C
CC-SW-4	5.49E-03	6.69E-05	1.98E-07	1.000	1.01	1/4, PMOS1P41C001D
C2XO1R22S017_1M	6.43E-06	6.63E-05	1.67E-04	1.000	11.31	DC CAB S106 SUPPLY BREAKER TRANSFERS OPEN
CBXO1R22S007_9	4.18E-06	6.58E-05	2.56E-04	1.000	16.75	4160-V SUPPLY BRK. TO XFMR D XFERS OPEN
CBXO1R23S004_9M	4.18E-06	6.58E-05	2.56E-04	1.000	16.75	600-V LOAD BKR. FROM XFMR D TRANSFERS OPEN
AVXC1N21F211	3.89E-05	6.42E-05	2.68E-05	1.000	2.65	FLOW CONTROL VALVE TRANSFERS CLOSED
GRD2&3	5.70E-01	6.33E-05	1.80E-09	1.000	1.00	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSE
KRSDP2	1.00E-02	6.32E-05	1.03E-07	1.000	1.01	TRANSFER OF CONTROL TO REMOTE S/D PANEL FAILS
CVFO1C11F083	2.87E-04	6.20E-05	3.51E-06	1.000	1.22	CHECK VALVE F083 FAILS TO OPEN
MVXC1E21F001A	5.06E-04	6.09E-05	1.95E-06	1.000	1.12	MOV F001A TRANSFERS CLOSED
XROR1R11S042	1.25E-05	6.05E-05	7.88E-05	1.000	5.85	ESSENTIAL BUS1A TRANSFORMER FAILS DURING OPERATION
VLFO1X41C005B	4.65E-04	6.05E-05	2.11E-06	1.000	1.13	DG B VENT SUPPLY LOUVERS FTO OR COMMON FAN LOGIC FAILS
MVXC1E21F031A	4.95E-04	5.95E-05	1.95E-06	1.000	1.12	MOTOR-OPERATED VALVE 1E21F031A TRANSFERS CLOSED
CC-SW-15	3.69E-06	5.90E-05	2.60E-04	1.000	16.98	4/4, PMOS1P41C001A PMOS1P41C001B PMOS1P41C001C PMOS1P41C001
CVFO1E11F046B	2.87E-04	5.80E-05	3.28E-06	1.000	1.20	RHR PUMP B MINIFLOW CHECK VALVE F046B FAILS TO OPEN
RLFD1E41K2	1.34E-04	5.79E-05	7.02E-06	1.000	1.43	K2 RELAY OR CONTACTS FAIL
CC-SW-22	2.84E-04	5.74E-05	3.28E-06	1.000	1.20	1/4, CVFO1P41F311B
XXXX1B21_MSIVSIG	6.73E-06	5.55E-05	1.34E-04	1.000	9.25	MSIV ISOLATION SIGNAL NOT RECEIVED
XXXX1E41_ISOLOGI	6.73E-06	5.55E-05	1.34E-04	1.000	9.25	HPCI HI STEAM LINE FLOW, HIGH TEMP ISOLATION LOGIC FAILS
XXXX1E51_ISOLOGI	6.73E-06	5.55E-05	1.34E-04	1.000	9.25	RCIC HI STEAM LINE FLOW AND HI TEMP ISOLATION LOGIC FAILS
XXXX1G31_ISOLOGI	6.73E-06	5.55E-05	1.34E-04	1.000	9.25	RWCU ISOLATION LOGIC FAILS
BSSH1R22S006	9.02E-06	5.54E-05	9.97E-05	1.000	7.14	4KV BUS F FAILS TO OPERATE
CBFO1R22S006_1	4.20E-04	5.46E-05	2.11E-06	1.000	1.13	CIRCUIT BREAKER FAIL TO OPEN

Event Name	Probability	Fus Ves	BimBm	Red W	Ach W	Description
CBFO1R22S006_11	4.20E-04	5.46E-05	2.11E-06	1.000	1.13	4KV BUS F NORMAL SUPPLY BREAKER FAILS TO OPEN
MNUNRS_TRNA	3.56E-03	5.43E-05	2.48E-07	1.000	1.02	PUMP E11-C002A MAINTENANCE
CC-VM-18_____I	2.30E-03	5.29E-05	3.73E-07	1.000	1.02	2/3, CHSR1Z41B008B CHOR1Z41B008A
CC-VM-19_____I	2.30E-03	5.29E-05	3.73E-07	1.000	1.02	2/3, CHSR1Z41B008B CHOR1Z41B008C
XRFO1S11S004	2.10E-05	5.28E-05	4.09E-05	1.000	3.52	SUT C FAILS TO OPERATE
XRFO1S11S005	2.10E-05	5.28E-05	4.09E-05	1.000	3.52	SUT D FAILS TO OPERATE
MVRE1E51F013	2.30E-03	5.26E-05	3.72E-07	1.000	1.02	RCIC PUMP DISCHARGE VALVE FAILS TO REOPEN ON RCIC RESTART
MVRE1E51F045	2.30E-03	5.26E-05	3.72E-07	1.000	1.02	RCIC STEAM INLET VALVE FAILS TO REOPEN ON RESTART
MVRE1E51F046	2.30E-03	5.26E-05	3.72E-07	1.000	1.02	RCIC LUBE OIL COOLING VALVE FAILS TO REOPEN ON RCIC RESTART
CC-DGS-12	1.83E-05	5.23E-05	4.64E-05	1.000	3.86	2/3, DGSR1R43S001C DGSR1R43S001B
MIUNCS_TRNB	1.04E-03	5.12E-05	7.99E-07	1.000	1.05	MISALIGNMENT OF CS LOOP B
MNUNQT_TRNA	1.12E-03	5.01E-05	7.24E-07	1.000	1.04	LOOP A TORUS COOLING VALVE MAINTENANCE
HVXC1P41F1379__I	2.54E-04	5.01E-05	3.20E-06	1.000	1.20	CHEM CLEANING MANUAL ISOLATION VALVE F1379 TRANSFERS SHUT (
HVXC1P41F1380__I	2.54E-04	5.01E-05	3.20E-06	1.000	1.20	CHEMICAL CLEANING MANUAL ISOLATION VALVE F1380 TRANSFER CLO
HVXC1P41F1383__I	2.54E-04	5.01E-05	3.20E-06	1.000	1.20	CHEMICAL CLEANING MANUAL ISOLATION VALVE F1383 TRANSFER CLO
HVXC1P41F1386__I	2.54E-04	5.01E-05	3.20E-06	1.000	1.20	CHEM CLEANING MANUAL ISOLATION VALVE F1386 TRANSFERS SHUT (
HVXC1P41F304A__I	2.54E-04	5.01E-05	3.20E-06	1.000	1.20	MANUAL VALVE F304A TRANSFERS CLOSED
HVXC1P41F304B__I	2.54E-04	5.01E-05	3.20E-06	1.000	1.20	MANUAL VALVE F304B TRANSFERS CLOSED - 1 YEAR
HVXC1P41F305A__I	2.54E-04	5.01E-05	3.20E-06	1.000	1.20	MANUAL VALVE F305A TRANSFERS CLOSED
HVXC1P41F305B__I	2.54E-04	5.01E-05	3.20E-06	1.000	1.20	MANUAL VALVE F305B TRANSFERS CLOSED -1 YEAR
HVXC1P41F307A__I	2.54E-04	5.01E-05	3.20E-06	1.000	1.20	MANUAL VALVE F307A TRANSFERS CLOSED - INITIATOR
HVXC1P41F307B__I	2.54E-04	5.01E-05	3.20E-06	1.000	1.20	MANUAL VALVE F307B TRANSFERS CLOSED - INITIATOR
HVXC1P41F439A__I	2.54E-04	5.01E-05	3.20E-06	1.000	1.20	MANUAL VALVE F439A TRANSFER CLOSED
HVXC1P41F439B__I	2.54E-04	5.01E-05	3.20E-06	1.000	1.20	MANUAL VALVE F439B TRANSFERS CLOSED - 1 YR
MVXC1N21F036	1.00E-03	4.81E-05	7.80E-07	1.000	1.05	MOTOR-OPERATED VALVE 1N21F036 TRANSFERS CLOSED
CC-LC-1	1.27E-04	4.73E-05	6.03E-06	1.000	1.37	1/4, RLFD1E21K8A
CC-LC-12	1.27E-04	4.73E-05	6.03E-06	1.000	1.37	1/4, RLFD1B21K370C
CC-LC-14	1.27E-04	4.73E-05	6.03E-06	1.000	1.37	1/4, RLFD1B21K361A
CC-LC-3	1.27E-04	4.73E-05	6.03E-06	1.000	1.37	1/4, RLFD1E21K7A
CC-NS-23	1.27E-04	4.73E-05	6.03E-06	1.000	1.37	1/4, RLFD1B21K307C
CC-NS-25	1.27E-04	4.73E-05	6.03E-06	1.000	1.37	1/4, RLFD1B21K309C
CC-SW-1	5.49E-03	4.58E-05	1.36E-07	1.000	1.01	1/4, PMOS1P41C001A
CC-IA-24	2.78E-03	4.51E-05	2.64E-07	1.000	1.02	1/2, FMOS1P51B0022
GRG2&3	6.00E-01	4.50E-05	1.22E-09	1.000	1.00	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSE
MNUNSL	4.91E-05	4.45E-05	1.48E-05	1.000	1.91	UNSCHEDULED MAINT ON SLCS SYSTEM
CBXO1R22S005_10I	1.52E-03	4.39E-05	4.68E-07	1.000	1.03	4160-V SUPPLY BRKR TO XFMR C XFERS OPEN
CBXO1R23S003_2MI	1.52E-03	4.39E-05	4.68E-07	1.000	1.03	600-V LOAD BRKR FROM XFMR C TRANSFERS OPEN
CC-LC-25	1.17E-04	4.35E-05	6.03E-06	1.000	1.37	1/4, TUFD1B21N691A
CC-LC-26	1.17E-04	4.35E-05	6.03E-06	1.000	1.37	1/4, TUFD1B21N691C
CC-ISSIG-3	6.71E-06	4.14E-05	1.00E-04	1.000	7.17	2/2, RLFD1R43SWETR1 RLFD1R43SWETR2
CC-ISSIG-6	6.71E-06	4.14E-05	1.00E-04	1.000	7.17	2/2, RLFD1P41K12A RLFD1P41K15A
PXOR1B21N090A	1.10E-04	4.09E-05	6.03E-06	1.000	1.37	PRESSURE TRANSMITTER 1B21-N090A FAILS DURING OPERATION
PXOR1B21N090C	1.10E-04	4.09E-05	6.03E-06	1.000	1.37	PRESSURE TRANSMITTER 1B21-N090C FAILS DURING OPERATION
CC-VS-15	1.17E-05	4.04E-05	5.60E-05	1.000	4.45	4/4, XXCH1T41B002B XXCH1T41B002A XXCH1T41B003B XXCH1T41B003
CC-JS-4	2.84E-04	3.99E-05	2.28E-06	1.000	1.14	1/2, CVFO1E11F050B
CC-CS-5	8.09E-04	3.98E-05	7.99E-07	1.000	1.05	1/2, PMSR1E21C001B
MNUN1R24S026	3.04E-04	3.96E-05	2.11E-06	1.000	1.13	MAINTENANCE ON 1R24-SO26 (ONCE PER 54MOS.;12HRS PER TIME)
CC-HPISO-1	2.18E-03	3.92E-05	2.92E-07	1.000	1.02	1/2, MVFC1E41F002
CC-HPISO-2	2.18E-03	3.92E-05	2.92E-07	1.000	1.02	1/2, MVFC1E41F003

Event Name	Probability	Fus Ves	BimBm	Red W	Ach W	Description
CC-RCISO-1	2.18E-03	3.92E-05	2.92E-07	1.000	1.02	1/2, MVFC1E51F007
CC-RCISO-2	2.18E-03	3.92E-05	2.92E-07	1.000	1.02	1/2, MVFC1E51F008
CC-RWISO-1	2.18E-03	3.92E-05	2.92E-07	1.000	1.02	1/2, MVFC1G31F001
BSSH1R22S005	9.02E-06	3.89E-05	7.00E-05	1.000	5.31	4KV BUS E FAILS TO OPERATE
BRSH1C71P001_A	7.94E-06	3.80E-05	7.76E-05	1.000	5.78	RPS BUS A SHORTS DURING OPERATION
BRSH1C71P001_B	7.94E-06	3.80E-05	7.76E-05	1.000	5.78	RPS BUS B SHORTS DURING OPERATION
CC-VC-11	8.08E-05	3.64E-05	7.33E-06	1.000	1.45	4/4, FNOS1T47B008A FNOS1T47B007B FNOS1T47B007A FNOS1T47B008
RMCR1	8.90E-04	3.60E-05	6.57E-07	1.000	1.04	OPERATORS FAIL TO RESTART MCR CLG AFTER RECOVERY OF PSW/POW
CC-QV-11	7.50E-06	3.58E-05	7.76E-05	1.000	5.78	3/4, AVFO1T48F318 AVFO1T48F319 AVFO1T48F320
CC-QV-12	7.50E-06	3.58E-05	7.76E-05	1.000	5.78	3/4, AVFO1T48F318 AVFO1T48F319 AVFO1T48F326
CC-QV-13	7.50E-06	3.58E-05	7.76E-05	1.000	5.78	3/4, AVFO1T48F318 AVFO1T48F320 AVFO1T48F326
CC-QV-14	7.50E-06	3.58E-05	7.76E-05	1.000	5.78	3/4, AVFO1T48F319 AVFO1T48F320 AVFO1T48F326
MVFO1N71F201	2.30E-03	3.53E-05	2.49E-07	1.000	1.02	MOTOR-OPERATED VALVE 1N71F201 FAILS TO OPEN
CC-QT-25	2.69E-05	3.46E-05	2.09E-05	1.000	2.29	2/4, MVFC1E11F015B MVFC1E11F017B
CC-QT-5	2.69E-05	3.46E-05	2.09E-05	1.000	2.29	2/4, MVFO1E11F027B MVFO1E11F024B
MNUNHS_PUMPC	1.62E-02	3.40E-05	3.41E-08	1.000	1.00	PUMP C001C MAINTENANCE
UOL1	3.30E-02	3.37E-05	1.66E-08	1.000	1.00	LOCA SIGNAL ON OPPOSITE UNIT, LOSP FOR 30 MINUTES
MCOR1R25S064	7.94E-06	3.09E-05	6.31E-05	1.000	4.89	R25S064 FAILS DURING OPERATION
CC-IA-2	2.24E-03	3.07E-05	2.23E-07	1.000	1.01	1/2, PMOS1P51C008B
SWXO1R26M032A	1.11E-04	3.01E-05	4.40E-06	1.000	1.27	THROWOVER SWITCH CONTACTS FAIL OPEN
XROR1R23S003	1.25E-05	2.98E-05	3.88E-05	1.000	3.39	STATION SERVICE TRANSFORMER C FAILS TO OPERATE
CC-CS-43	2.84E-04	2.92E-05	1.67E-06	1.000	1.10	1/2, CVFO1E21F003A
CC-CS-46	2.84E-04	2.92E-05	1.67E-06	1.000	1.10	1/2, CVFO1E21F006A
CC-CS-49	2.84E-04	2.92E-05	1.67E-06	1.000	1.10	1/2, CVFO1E21F036A
AVXC1Z41F011	3.89E-05	2.91E-05	1.22E-05	1.000	1.75	AIR-OPERATED DAMPER 1Z41F012 TRANSFERS CLOSED
AVXC1Z41F012	3.89E-05	2.91E-05	1.22E-05	1.000	1.75	AIR-OPERATED DAMPER 1Z41F012 TRANSFERS CLOSED
CC-FWAISO-1	2.65E-03	2.90E-05	1.78E-07	1.000	1.01	1/2, CVFC1B21F010A
CC-FWAISO-2	2.65E-03	2.90E-05	1.78E-07	1.000	1.01	1/2, CVFC1B21F032A
CC-FWBISO-4	2.65E-03	2.90E-05	1.78E-07	1.000	1.01	1/2, CVFC1B21F010B
CC-FWBISO-5	2.65E-03	2.90E-05	1.78E-07	1.000	1.01	1/2, CVFC1B21F032B
CC-RS-8	3.04E-05	2.88E-05	1.54E-05	1.000	1.95	2/4, PMSS1E11C002A PMSS1E11C002B
MNUNRPSA	2.64E-03	2.87E-05	1.77E-07	1.000	1.01	MG SET IN MAINTENANCE
CC-HP-48	2.07E-07	2.80E-05	2.20E-03	1.000	136.40	4/4, PXOR1B21N091A PXOR1B21N091C PXOR1B21N091D PXOR1B21N091
CC-RS-48	2.18E-04	2.78E-05	2.08E-06	1.000	1.13	1/4, PMSR1E11C002B
MCOR1R24S012	7.94E-06	2.78E-05	5.69E-05	1.000	4.50	RX BLDG 600-V MCC 1B FAILS
MCOR1R24S027	7.94E-06	2.78E-05	5.69E-05	1.000	4.50	DG BLDG 600-V MCC 1C FAILS
CC-VM-28	2.02E-04	2.72E-05	2.19E-06	1.000	1.13	3/3, CHSS1Z41B008B CHOS1Z41B008A CHOS1Z41B008C
SWXO1R26M031A	1.11E-04	2.66E-05	3.88E-06	1.000	1.24	THROWOVER SWITCH TRANSFERS OPEN
SWXO1R26M031B	1.11E-04	2.66E-05	3.88E-06	1.000	1.24	THROWOVER SWITCH TRANSFERS OPEN
CC-QV-1	1.86E-03	2.55E-05	2.23E-07	1.000	1.01	1/4, AVFO1T48F318
CC-QV-2	1.86E-03	2.55E-05	2.23E-07	1.000	1.01	1/4, AVFO1T48F319
CC-QV-3	1.86E-03	2.55E-05	2.23E-07	1.000	1.01	1/4, AVFO1T48F320
CC-QV-4	1.86E-03	2.55E-05	2.23E-07	1.000	1.01	1/4, AVFO1T48F326
MVXC1E11F017B	1.76E-04	2.47E-05	2.28E-06	1.000	1.14	MOV F017B TRANSFERS CLOSED
MVXC1E11F048B	1.76E-04	2.47E-05	2.28E-06	1.000	1.14	MOV F048B TRANSFERS CLOSED
MVXC1P41F380B__I	3.96E-03	2.25E-05	9.25E-08	1.000	1.01	MOTOR OPERATED VALVE F380B TRANSFERS CLOSED (1 YEAR)
MVXC1E11F004B	1.76E-04	2.25E-05	2.08E-06	1.000	1.13	RHR SUCTION MOV 1E11F004B TRANSFERS CLOSED
CC-SW-39	2.35E-05	2.23E-05	1.54E-05	1.000	1.95	2/4, CVFR1P41F311C CVFR1P41F311D
TKRP1P11A100	6.38E-07	2.18E-05	5.54E-04	1.000	35.08	CST NOT AVAILABLE

Event Name	Probability	Fus Ves	BimBm	Red W	Ach W	Description
CC-HS-3	3.33E-03	2.15E-05	1.05E-07	1.000	1.01	1/4, PMSS1E11C001A
MVXC1E51F013	1.08E-05	2.11E-05	3.16E-05	1.000	2.95	MOTOR-OPERATED VALVE 1E51-F013 TRANSFERS CLOSED
MVXC1E11F007B	1.65E-04	2.11E-05	2.08E-06	1.000	1.13	MOTOR-OPERATED VALVE 1E11F007B TRANSFERS CLOSED
CBXO1R23S004_3M	4.18E-06	2.02E-05	7.88E-05	1.000	5.85	FEEDER TO ESSENTIAL TRANSFORMER 1R11S042 TRANSFERS OPEN
CBXO1R25S037_26	4.18E-06	2.02E-05	7.88E-05	1.000	5.85	FEEDER BREAKER TRANSFERS OPEN
CC-SW-21	2.49E-06	2.02E-05	1.31E-04	1.000	9.08	2/2, CVFO1P41F438B CVFO1P41F438A
OPHED03	1.01E-03	1.98E-05	3.18E-07	1.000	1.02	OPERATORS FAIL TO REALIGN RPS BUS TO ALTERNATE SUPPLY
INOR1E21K401D	1.48E-03	1.95E-05	2.15E-07	1.000	1.01	P928 IN-CABINET CONVERTER 1E21K401D FAILS DURING OPERATION
INOR1E21K402D	1.48E-03	1.95E-05	2.15E-07	1.000	1.01	P928 IN-CABINET CONVERTER 1E21K402D FAILS DURING OPERATION
CC-NS-18	2.15E-06	1.92E-05	1.46E-04	1.000	9.97	2/4, TUFD1B21N690A TUFD1B21N690D
CC-NS-19	2.15E-06	1.92E-05	1.46E-04	1.000	9.97	2/4, TUFD1B21N690B TUFD1B21N690C
CC-NS-20	2.15E-06	1.92E-05	1.46E-04	1.000	9.97	2/4, TUFD1B21N690B TUFD1B21N690D
STPL1E11B	1.49E-04	1.91E-05	2.08E-06	1.000	1.13	RHR PMP B STRAINER PLUGS
XROR1R23S004___I	4.56E-03	1.90E-05	6.76E-08	1.000	1.00	STATION SERVICE TRANSFORMER D FAILS TO OPERATE
C2FC1C71P003E	9.62E-04	1.88E-05	3.18E-07	1.000	1.02	LOW VOLTAGE CIRCUIT BREAKER FAILS TO CLOSE
C2FC1C71P003F	9.62E-04	1.88E-05	3.18E-07	1.000	1.02	LOW VOLTAGE CIRCUIT BREAKER FAILS TO CLOSE
HVXC1P41F003	1.13E-05	1.84E-05	2.65E-05	1.000	2.63	PSW VALVE F003 TRANSFERS CLOSED
HVXC1P41F004	1.13E-05	1.84E-05	2.65E-05	1.000	2.63	PSW VALVE F004 TRANSFERS CLOSED
MVXC1E41F006	1.08E-05	1.77E-05	2.65E-05	1.000	2.63	MOTOR-OPERATED VALVE 1E41-F006 TRANSFERS CLOSED
RLFD1R22EDX-A	1.34E-04	1.65E-05	2.00E-06	1.000	1.12	RELAY FAIL ON DEMAND
RLFD1R22EDX-C	1.34E-04	1.65E-05	2.00E-06	1.000	1.12	RELAY FAIL ON DEMAND
RLFD1R43-86E	1.34E-04	1.65E-05	2.00E-06	1.000	1.12	RELAY FAIL ON DEMAND
RLFD1R43-86G	1.34E-04	1.65E-05	2.00E-06	1.000	1.12	RELAY FAIL ON DEMAND
RLFD1R43ETR1A	1.34E-04	1.65E-05	2.00E-06	1.000	1.12	RELAY FAIL ON DEMAND
RLFD1R43ETR1C	1.34E-04	1.65E-05	2.00E-06	1.000	1.12	RELAY FAIL ON DEMAND
RLFD1R43K757A	1.34E-04	1.65E-05	2.00E-06	1.000	1.12	RELAY FAIL ON DEMAND
RLFD1R43K757C	1.34E-04	1.65E-05	2.00E-06	1.000	1.12	RELAY FAIL ON DEMAND
RLFD1R43K86E	1.34E-04	1.65E-05	2.00E-06	1.000	1.12	RELAY FAIL ON DEMAND
RLFD1R43K86G	1.34E-04	1.65E-05	2.00E-06	1.000	1.12	RELAY FAIL ON DEMAND
RLFD1S32K240	1.34E-04	1.65E-05	2.00E-06	1.000	1.12	RELAY FAIL ON DEMAND
RLFD1S32K241	1.34E-04	1.65E-05	2.00E-06	1.000	1.12	RELAY FAIL ON DEMAND
RLFD1S32K260	1.34E-04	1.65E-05	2.00E-06	1.000	1.12	RELAY FAIL ON DEMAND
RLFD1S32K261	1.34E-04	1.65E-05	2.00E-06	1.000	1.12	RELAY FAIL ON DEMAND
MCOR1R24S021	7.94E-06	1.55E-05	3.16E-05	1.000	2.95	DC MCC S021 FAILS DURING OPERATION
CC-IS-14	8.91E-06	1.46E-05	2.65E-05	1.000	2.63	3/4, MVFC1P41F310D MVFC1P41F310B MVFC1P41F310C
CC-IS-15	8.91E-06	1.46E-05	2.65E-05	1.000	2.63	3/4, MVFC1P41F310D MVFC1P41F310B MVFC1P41F310A
HVXC1N21F018A	6.35E-05	1.41E-05	3.62E-06	1.000	1.22	MANUAL VALVE 1N21F018A TRANSFERS CLOSED
HVXC1N21F018C	6.35E-05	1.41E-05	3.62E-06	1.000	1.22	MANUAL VALVE 1N21F018C TRANSFERS CLOSED
MVXC1E21F001B	5.06E-04	1.41E-05	4.53E-07	1.000	1.03	MOV F001B TRANSFERS CLOSED
MVXC1E21F031B	4.95E-04	1.38E-05	4.53E-07	1.000	1.03	MOTOR-OPERATED VALVE 1E21F031B TRANSFERS CLOSED
HVXC1E21F007A	1.91E-04	1.36E-05	1.16E-06	1.000	1.07	DISCHARGE MANUAL VALVE F007A TRANSFERS CLOSED
MCOR1R24S011	7.94E-06	1.35E-05	2.77E-05	1.000	2.71	RX BLDG 600-V MCC 1C FAILS
OPHEDW2	1.26E-02	1.35E-05	1.73E-08	1.000	1.00	OPERATOR FAILS TO INITIATE DRYWELL SPRAY SYSTEM
MCOR1R24S022	7.94E-06	1.30E-05	2.65E-05	1.000	2.63	DC MCC S022 FAILS DURING OPERATION
CC-VM-10	8.13E-04	1.24E-05	2.48E-07	1.000	1.02	1/3, FNSS1Z41B003B
OPHESWREC1	1.00E-03	1.22E-05	1.99E-07	1.000	1.01	OPERATOR FAILS TO OPEN ALTERNATE PATH TO RIVER
CC-HS-18	8.06E-04	1.16E-05	2.33E-07	1.000	1.01	1/4, PMSR1E11C001D
CC-HS-19	8.06E-04	1.16E-05	2.33E-07	1.000	1.01	1/4, PMSR1E11C001B
MNUNDB_BATT	2.00E-04	1.13E-05	9.16E-07	1.000	1.06	BATTERY DISCONNECTED FROM DC PANEL

Event Name	Probability	Fus Ves	BimBm	Red W	Ach W	Description
PASR2P41C002	7.97E-04	1.12E-05	2.29E-07	1.000	1.01	STANDBY SERVICE WATER PUMP 2P41C002 FAILS TO RUN
STPL1E21L001A	1.49E-04	1.06E-05	1.16E-06	1.000	1.07	SUCTION STRAINERS FOR PUMP A PLUGGED
CC-QT-15	1.19E-05	1.05E-05	1.44E-05	1.000	1.89	4/4, MVFO1E11F027B MVFO1E11F024B MVFO1E11F024A MVFO1E11F027
CC-QT-30	1.19E-05	1.05E-05	1.44E-05	1.000	1.89	4/4, MVFC1E11F015A MVFC1E11F017A MVFC1E11F015B MVFC1E11F017
CC-HP-44	6.88E-08	9.32E-06	2.20E-03	1.000	136.40	2/4, PXOR1B21N091A PXOR1B21N091B
CC-HP-45	6.88E-08	9.32E-06	2.20E-03	1.000	136.40	2/4, PXOR1B21N091C PXOR1B21N091D
CC-CS-26	1.27E-04	9.09E-06	1.16E-06	1.000	1.07	1/2, RLFD1E21K10B
CC-CS-35	1.27E-04	9.09E-06	1.16E-06	1.000	1.07	1/2, RLFD1E21K20B
CC-CS-38	1.27E-04	9.09E-06	1.16E-06	1.000	1.07	1/2, RLFD1E21K42B
CC-CS-41	1.27E-04	9.09E-06	1.16E-06	1.000	1.07	1/2, RLFD1E21K41B
C2XO1R22S016_3MI	2.35E-03	8.56E-06	5.92E-08	1.000	1.00	DC CAB S001 SUPPLY BREAKER TRANSFERS OPEN
CC-QT-11	8.91E-06	7.89E-06	1.44E-05	1.000	1.89	3/4, MVFO1E11F027B MVFO1E11F024B MVFO1E11F024A
CC-QT-12	8.91E-06	7.89E-06	1.44E-05	1.000	1.89	3/4, MVFO1E11F027B MVFO1E11F024B MVFO1E11F027A
CC-QT-28	8.91E-06	7.89E-06	1.44E-05	1.000	1.89	3/4, MVFC1E11F015A MVFC1E11F015B MVFC1E11F017B
CC-QT-29	8.91E-06	7.89E-06	1.44E-05	1.000	1.89	3/4, MVFC1E11F017A MVFC1E11F015B MVFC1E11F017B
MNUNSA_CHRG	7.68E-05	7.58E-06	1.60E-06	1.000	1.10	CHARGER SWAPPING IN PROGRESS
RLFD1R22EDX-B	1.34E-04	7.55E-06	9.16E-07	1.000	1.06	RELAY FAIL ON DEMAND
RLFD1R43-86F	1.34E-04	7.55E-06	9.16E-07	1.000	1.06	RELAY FAIL ON DEMAND
RLFD1R43ETR1B	1.34E-04	7.55E-06	9.16E-07	1.000	1.06	RELAY FAIL ON DEMAND
RLFD1R43K757B	1.34E-04	7.55E-06	9.16E-07	1.000	1.06	RELAY FAIL ON DEMAND
RLFD1R43K86F	1.34E-04	7.55E-06	9.16E-07	1.000	1.06	RELAY FAIL ON DEMAND
RLFD1S32K250	1.34E-04	7.55E-06	9.16E-07	1.000	1.06	RELAY FAIL ON DEMAND
RLFD1S32K251	1.34E-04	7.55E-06	9.16E-07	1.000	1.06	RELAY FAIL ON DEMAND
HVXC1P41F063	6.96E-07	7.17E-06	1.67E-04	1.000	11.31	PSW COMMON RETURN VALVE FROM RX BLDNG, F063, TRANSFERS CLOS
CBXO1R23S003_7M	4.18E-06	7.12E-06	2.77E-05	1.000	2.71	SUPPLY BREAKER TO RX BLDG 600-V MCC 1C TRANSFERS OPEN
CBXO1R23S004_3B	4.18E-06	7.12E-06	2.77E-05	1.000	2.71	SUPPLY BREAKER TO DG BLDG 600-V MCC 1C TRANSFERS OPEN
CBXO1R23S004_6M	4.18E-06	7.12E-06	2.77E-05	1.000	2.71	SUPPLY BREAKER TO RX BLDG 600-V MCC 1B TRANSFERS OPEN
C2XO1R22S016_2B	6.43E-06	7.10E-06	1.79E-05	1.000	2.10	CIRCUIT BREAKER (LOW VOLTAGE) TRANSFER OPEN
C2XO1R22S016_3M	6.43E-06	7.10E-06	1.79E-05	1.000	2.10	DC CAB S001 SUPPLY BREAKER TRANSFERS OPEN
MNUNRWISO_OUT	1.10E-04	6.53E-06	9.66E-07	1.000	1.06	RWCU OUTBOARD MOV INOP DUE TO MAINTENANCE
CC-RS-13	7.34E-06	6.50E-06	1.44E-05	1.000	1.89	3/4, PMSS1E11C002C PMSS1E11C002B PMSS1E11C002D
CC-RS-14	7.34E-06	6.50E-06	1.44E-05	1.000	1.89	3/4, PMSS1E11C002A PMSS1E11C002B PMSS1E11C002D
CC-JS-3	1.19E-04	6.49E-06	8.84E-07	1.000	1.05	2/2, MVFO1E11F015A MVFO1E11F015B
CC-SW-3	5.49E-03	6.41E-06	1.90E-08	1.000	1.00	1/4, PMOS1P41C001C
HVXC1C41F001	1.06E-05	6.29E-06	9.65E-06	1.000	1.59	MANUAL SUCTION VALVE F001 TRANSFERS CLOSED
HVXC1C41F008	1.06E-05	6.29E-06	9.65E-06	1.000	1.59	MANUAL VALVE F002 TRANSFER CLOSED
S2PL1E11D002A	2.15E-04	6.26E-06	4.74E-07	1.000	1.03	STRAINER D002A PLUGS
SWXO1R26M032B	1.11E-04	6.26E-06	9.16E-07	1.000	1.06	THROWOVER SWITCH CONTACTS FAIL OPEN
AVXC2P41F340	3.89E-05	0.00E+00	0.00E+00	1.000	1.00	AIR-OPERATED VALVE 2P41F340 TRANSFERS CLOSED
BCOR1R42S032A	4.46E-04	0.00E+00	0.00E+00	1.000	1.00	NORMAL CHARGER FAILS DURING OPERATION
BCOR1R42S032B	4.46E-04	0.00E+00	0.00E+00	1.000	1.00	NORMAL CHARGER FAILS DURING OPERATION
BTOR1R42S002A	1.81E-05	0.00E+00	0.00E+00	1.000	1.00	DIESEL BATTERY A FAILS DURING OPERATION
CC-HS-4	3.33E-03	0.00E+00	0.00E+00	1.000	1.00	1/4, PMSS1E11C001C
CC-IS-13	2.69E-05	0.00E+00	0.00E+00	1.000	1.00	2/4, MVFC1P41F310C MVFC1P41F310A
CC-IS-7	2.18E-03	0.00E+00	0.00E+00	1.000	1.00	1/4, MVFC1P41F310A
CC-PS-13	9.43E-07	0.00E+00	0.00E+00	1.000	1.00	3/4, PMOR1P41C001C PMOR1P41C001B PMOR1P41C001A
CC-RS-6	3.04E-05	0.00E+00	0.00E+00	1.000	1.00	2/4, PMSS1E11C002C PMSS1E11C002B
CC-RS-7	3.04E-05	0.00E+00	0.00E+00	1.000	1.00	2/4, PMSS1E11C002C PMSS1E11C002D
CC-SW-11	2.64E-06	0.00E+00	0.00E+00	1.000	1.00	3/4, PMOS1P41C001A PMOS1P41C001B PMOS1P41C001C

Event Name	Probability	Fus Ves	BimBm	Red W	Ach W	Description
CC-SW-32	3.50E-07	0.00E+00	0.00E+00	1.000	1.00	4/4, CVFO1P41F311B CVFO1P41F311D CVFO1P41F311A CVFO1P41F311
CC-SW-41	2.35E-05	0.00E+00	0.00E+00	1.000	1.00	2/4, CVFR1P41F311A CVFR1P41F311D
CC-SW-42	2.35E-05	0.00E+00	0.00E+00	1.000	1.00	2/4, CVFR1P41F311B CVFR1P41F311D
CC-SW-5	1.16E-05	0.00E+00	0.00E+00	1.000	1.00	2/4, PMOS1P41C001A PMOS1P41C001B
COCFWTQCA	3.13E-02	0.00E+00	0.00E+00	1.000	1.00	RECOVERY RULE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODE
CODFWTQCA	6.79E-02	0.00E+00	0.00E+00	1.000	1.00	RECOVERY RULE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODE
CVFO2P41F321	2.87E-04	0.00E+00	0.00E+00	1.000	1.00	PUMP DISCHARGE CHECK VALVE 2P41F321 FAILS TO OPEN
FUSO1R42S002A	2.21E-05	0.00E+00	0.00E+00	1.000	1.00	FUSE BLOWS SPURIOUSLY
FUSO1R42S002B	2.21E-05	0.00E+00	0.00E+00	1.000	1.00	FUSE BLOWS SPURIOUSLY
HVXC1P52F1747	6.96E-07	0.00E+00	0.00E+00	1.000	1.00	MANUAL VALVE 1P52F1747 TRANSFERS CLOSED
MGOR1C71S001A	8.62E-04	0.00E+00	0.00E+00	1.000	1.00	RPS MG SET FAILS TO OPERATE
MNUN1S11S007	6.94E-05	0.00E+00	0.00E+00	1.000	1.00	TRANSFORMER 1CD IN MAINTENANCE
MNUNDA_CHRG	7.68E-05	0.00E+00	0.00E+00	1.000	1.00	CHARGER SWAPPING IN PROGRESS
MNUNDB_CHRG	7.68E-05	0.00E+00	0.00E+00	1.000	1.00	CHARGER SWAPPING IN PROGRESS
MNUNIS_VLVA	1.27E-03	0.00E+00	0.00E+00	1.000	1.00	VALVE MAINTENANCE - F310A
MNUNRS_TRNC	3.56E-03	0.00E+00	0.00E+00	1.000	1.00	RHR PUMP E11-C002C MAINTENANCE
MNUNRS_TRND	3.56E-03	0.00E+00	0.00E+00	1.000	1.00	PUMP E11-C002D MAINTENANCE
OPHEEPD	2.62E-02	0.00E+00	0.00E+00	1.000	1.00	OP FAILS TO TAKE REQUIRED MANUAL ACTIONS TO SUPPLY DFO TO D
PMSS1Y52C101C	2.35E-02	0.00E+00	0.00E+00	1.000	1.00	PUMP 101 FAILS TO OPERATE GIVEN START SIGNAL
SUCCESS	0.00E+00	0.00E+00	0.00E+00	1.000	1.00	LOSP RECOVERY TO REMOVE SUCCESS TERMS ADDED FOR FORTE HYBRI

Report Summary:
Filename: C:\CAFTA-W\U1HOLD~1\HATCH1.CUT
Print date: 06/18/1900 4:06 PM
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Attachment 3 Part 2
Basic Event Importance Report
(page 1 of 11)

Importance Measure Report

@H1LERFTOP = 2.69E-06

Event Name	Probability	Fus Ves	BimBm	Red W	Ach W	Description
FL_QV	1.00E+00	9.38E-01	2.53E-06	16.139	1.00	FALG FOR CONTAINMENT VENT FAILURE
SORV0	9.95E-01	6.77E-01	1.83E-06	3.098	1.00	ALL SRVS RECLOSE
FL_LER_OT	1.00E+00	6.70E-01	1.81E-06	3.034	1.00	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE
FL_LOSP	1.00E+00	6.62E-01	1.78E-06	2.959	1.00	FLAG FOR SELECTED LOSP
FL_DGA	1.00E+00	6.55E-01	1.76E-06	2.899	1.00	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BU
FL_DGC	1.00E+00	6.31E-01	1.70E-06	2.710	1.00	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BU
FL_DGB	1.00E+00	5.76E-01	1.55E-06	2.356	1.00	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BU
DUR24	2.10E-01	5.11E-01	6.56E-06	2.047	2.92	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)
%LOSP	2.20E-02	4.96E-01	6.08E-05	1.985	23.06	LOSP INITIATING EVENT
UA3	7.29E-01	4.09E-01	1.51E-06	1.691	1.15	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL
FL_HPI-B-S	1.00E+00	3.80E-01	1.02E-06	1.612	1.00	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY
GRA2&3	2.70E-01	3.66E-01	3.65E-06	1.577	1.99	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSE
CNMT2&3	2.11E-01	2.68E-01	3.42E-06	1.365	2.00	DRYWELL FAILS GIVEN CONTAINMENT OVERPRESSURE FAILURE
HATCHAVAIL	7.79E-01	2.47E-01	8.54E-07	1.328	1.07	HATCH AVAILABILITY
SORVX	1.00E+00	2.04E-01	5.51E-07	1.257	1.00	ALL SRVs REMAIN CLOSED GIVEN SUCCESSFUL BYPASS VALVE OPERAT
%FL-BUSC	1.00E+00	1.63E-01	4.38E-07	1.194	1.00	FLAG FOR LOSS OF 600-V BUS C INITIATING EVENT
BSSH1R23S003___I	3.29E-03	1.62E-01	1.32E-04	1.193	49.95	600-V BUS C FAILS
CC-DGS-2	3.18E-02	1.50E-01	1.27E-05	1.177	5.57	1/3, DGLR1R43S001A
CC-DGS-1	3.18E-02	1.41E-01	1.19E-05	1.164	5.29	1/3, DGLR1R43S001C
XXOG_DEMAND	2.40E-04	1.35E-01	1.51E-03	1.156	562.72	LOSS OF 230KV GRID CAUSED BY GENERATOR TRIP
DUR3	4.90E-01	1.33E-01	7.30E-07	1.153	1.14	OFFSITE POWER RESTORED AFTER 30 MINUTES, WITHIN 2.5 HOURS
FL_HPCI	1.00E+00	1.26E-01	3.40E-07	1.144	1.00	FLAG FOR HPCI BEING UNAVAILABLE
FL_RCIC	1.00E+00	1.26E-01	3.40E-07	1.144	1.00	FLAG FOR RCIC BEING UNAVAILABLE
FL_HPI-B-F	1.00E+00	1.01E-01	2.71E-07	1.112	1.00	HPCI AND RCIC NOT AVAILABLE WITH BATTERY POWER ONLY
CC-DGS-7	1.89E-04	9.70E-02	1.38E-03	1.107	513.91	3/3, DGLR1R43S001C DGLR1R43S001A DGLR1R43S001B
UOL24	3.78E-02	8.87E-02	6.32E-06	1.097	3.26	LOCA SIGNAL ON OPPOSITE UNIT, LOSP FOR 24 HOURS
CC-DGS-3	3.18E-02	7.39E-02	6.26E-06	1.080	3.25	1/3, DGLR1R43S001B
CC-DGS-24	1.27E-02	7.21E-02	1.53E-05	1.078	6.62	1/3, DGSS1R43S001C
CC-DGS-22	1.27E-02	7.11E-02	1.51E-05	1.076	6.54	1/3, DGSS1R43S001A
CC-DGS-42	6.60E-05	6.78E-02	2.77E-03	1.073	1.03E+03	3/3, CBFC1R22S005_5 CBFC1R22S006_6 CBFC1R22S007_6
CC-DGS-28	6.40E-05	6.57E-02	2.76E-03	1.070	1.03E+03	3/3, DGSS1R43S001A DGSS1R43S001B DGSS1R43S001C
UA2	7.56E-01	6.00E-02	2.14E-07	1.064	1.02	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL
GRE2&3	7.30E-01	5.91E-02	2.18E-07	1.063	1.02	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL
QCB	5.40E-01	5.76E-02	2.87E-07	1.061	1.05	MAIN CONDENSER UNAVAILABLE FOR DHR (MSIVs CLOSED)
%TTRIP	1.64E+00	5.58E-02	9.16E-08	1.059	0.98	TURBINE TRIP EVENT
OPHEEPB	1.62E-02	5.46E-02	9.09E-06	1.058	4.32	OPERATOR FAILS TO ALIGN 600-V BUS TO BACKUP 4160-V BUS
%SCRAM	1.39E+00	4.62E-02	8.96E-08	1.048	0.99	REACTOR SCRAM INITIATING EVENT
XRFD1S11S004	5.61E-03	4.54E-02	2.18E-05	1.048	9.05	SUT C LOAD SHEDS FOLLOWING GENERATOR TRIP
%MSIVC	7.50E-01	4.45E-02	1.60E-07	1.047	1.01	MSIV CLOSURE INITIATING EVENT
GRC2&3	4.10E-01	4.15E-02	2.73E-07	1.043	1.06	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSE
CC-DGS-21	4.06E-05	4.14E-02	2.74E-03	1.043	1.02E+03	3/3, DG1R1R43S001A DG1R1R43S001B DG1R1R43S001C

Event Name	Probability	Fus Ves	BimBm	Red W	Ach W	Description
MNUNBD	3.67E-05	4.11E-02	3.02E-03	1.043	1.12E+03	BUS D IN MAINTENANCE
MNUNHS_LOOP2	6.83E-03	3.98E-02	1.57E-05	1.041	6.79	LOOP 2 MAINTENANCE - RHRSW
SORVA	9.98E-01	3.92E-02	1.06E-07	1.041	1.00	ALL SRVS RECLOSE GIVEN 5 SRVS OPENED
P7SR1E51C001	2.47E-02	3.64E-02	3.97E-06	1.038	2.44	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO RUN
%FL-LOPSW	1.00E+00	3.59E-02	9.68E-08	1.037	1.00	FLAG FOR LOSS OF PLANT SERVICE WATER INITIATING EVENT
CC-DGS-17	6.84E-03	3.53E-02	1.39E-05	1.037	6.13	1/3, DG1R1R43S001C
CC-DGS-15	6.84E-03	3.43E-02	1.35E-05	1.036	5.98	1/3, DG1R1R43S001A
MNUNHP_RCIC	2.32E-02	3.38E-02	3.93E-06	1.035	2.42	RCIC SYSTEM INOP DUE TO MAINTENANCE
%LOFW	7.10E-01	3.24E-02	1.23E-07	1.033	1.01	LOSS OF FEEDWATER
%VSEQ	8.62E-08	3.20E-02	1.00E+00	1.033	3.71E+05	V SEQUENCE
CC-DGS-23	1.27E-02	3.15E-02	6.71E-06	1.033	3.46	1/3, DGSS1R43S001B
CC-PS-15_____I	7.76E-05	3.13E-02	1.09E-03	1.032	404.07	4/4, PMOR1P41C001C PMOR1P41C001D PMOR1P41C001B PMOR1P41C001
MNUNRS_DIVII	4.74E-03	3.12E-02	1.77E-05	1.032	7.54	RHR LOOP 2 MAINT OR MISALIGNMENT OF VALVES IN LOOP 2 FLOW
XXOG_24HOURS	6.83E-05	3.08E-02	1.21E-03	1.032	451.87	SUPPLY FROM 230KV GRID LOST DURING 24 HOURS AFTER TRANSIENT
QRA	1.00E-01	2.77E-02	7.47E-07	1.029	1.25	DECAY HEAT REMOVAL NOT RECOVERED BEFORE CONTAINMENT OR ECCS
%FL-LODC	1.00E+00	2.61E-02	7.04E-08	1.027	1.00	FLAG FOR LOSS OF STATION BATTER A DC POWER INITIATING EVENT
BSSH1R22S016___I	3.29E-03	2.60E-02	2.13E-05	1.027	8.87	DC SWITCHGEAR S016 FAILS DURING OPERATION
OLA	2.43E-05	2.49E-02	2.76E-03	1.026	1.02E+03	OPERATORS FAIL TO ALIGN AVAILABLE SYSTEM S FOR DECAY HEAT R
AVFC1T46F005	2.00E-03	2.46E-02	3.32E-05	1.025	13.29	AOV F005 FAILS TO CLOSE
AVFC1T48F081	2.00E-03	2.46E-02	3.32E-05	1.025	13.29	SGTS ISOLATION VALVE F081 FAILS TO CLOSE
AVFO1T48F082	2.00E-03	2.46E-02	3.32E-05	1.025	13.29	VENT VALVE F082 FAILS TO OPEN
MNUN1R43S001C	5.51E-03	2.36E-02	1.15E-05	1.024	5.26	DGC MAINTENANCE
OPHEQV1	1.00E-01	2.31E-02	6.22E-07	1.024	1.21	OP FAILS TO INITIATE VENT GIVEN FAILURE TO PROVIDE LONG-TER
MNUN1R43S001A	5.51E-03	2.26E-02	1.10E-05	1.023	5.07	DGA MAINTENANCE
MNUNBC	3.67E-05	2.24E-02	1.65E-03	1.023	611.54	BUS C IN MAINTENANCE
HIRE50	5.00E-01	2.15E-02	1.16E-07	1.022	1.02	RECOVERY OF HIGH PRESS INJECT (CRD UNAVAILABLE; 0.5)
P7SS1E51C001	2.88E-02	1.96E-02	1.84E-06	1.020	1.66	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO START
RPB	3.14E-01	1.96E-02	1.68E-07	1.020	1.04	RETURN TO POWER OP: GIVEN MSIVs INITIALLY CLOSED
XRFD1S11S005	5.61E-03	1.82E-02	8.72E-06	1.018	4.22	SUT D LOAD SHEDS FOLLOWING GENERATOR TRIP
CC-DGS-14	1.80E-05	1.76E-02	2.63E-03	1.018	975.91	3/3, DGSR1R43S001C DGSR1R43S001A DGSR1R43S001B
SORV1	4.38E-03	1.59E-02	9.78E-06	1.016	4.61	ONE SRV FAILS TO RECLOSE
UOL3	3.33E-02	1.55E-02	1.26E-06	1.016	1.45	LOCA SIGNAL ON OPPOSITE UNIT, LOSP FOR 3 HOURS
CC-DGS-16	6.84E-03	1.51E-02	5.95E-06	1.015	3.19	1/3, DG1R1R43S001B
MNUNPS_TRNB	1.57E-02	1.49E-02	2.56E-06	1.015	1.93	MAINT ON PSW PUMP C001B
UA1	8.13E-01	1.42E-02	4.70E-08	1.014	1.00	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL
MNUN1R43S001B	7.21E-03	1.39E-02	5.19E-06	1.014	2.91	DGB MAINTENANCE
OPHES064/S065	2.00E-02	1.34E-02	1.81E-06	1.014	1.66	OPERATOR ACTION TO MANUALLY TRANSFER INSTRUMENT BUS POWER S
CC-DGS-8	3.03E-03	1.31E-02	1.16E-05	1.013	5.31	1/3, DGSR1R43S001C
CC-DGS-9	3.03E-03	1.25E-02	1.11E-05	1.013	5.11	1/3, DGSR1R43S001A
CC-HS-47	2.18E-03	1.18E-02	1.46E-05	1.012	6.40	1/2, MVFO1E11F068B
CC-DGS-4	1.92E-04	1.17E-02	1.65E-04	1.012	62.12	2/3, DGLR1R43S001C DGLR1R43S001A
MIUNDGS_DGB	5.84E-03	1.09E-02	5.03E-06	1.011	2.86	DIESEL B ALIGNED TO UNIT 2 AND UNIT 2 ALSO IN LOSP
P6SS1E41C001	4.26E-02	1.06E-02	6.71E-07	1.011	1.24	HPCI PUMP/TURBINE FAIL TO START
BSSH1R23S004	9.02E-06	1.06E-02	3.15E-03	1.011	1.17E+03	600-V BUS D FAILS DURING OPERATION
%FL-BUSD	1.00E+00	1.02E-02	2.74E-08	1.010	1.00	FLAG FOR INITIATING EVENT CAUSED BY LOSS OF 600V BUS D
XXBD_TRANSIENT	2.00E-01	1.02E-02	1.37E-07	1.010	1.04	LOSS OF BUS D CAUSES INITIATING EVNET (TRIP)
BSSH1R23S004___I	3.29E-03	9.95E-03	8.14E-06	1.010	4.01	600-V BUS D FAILS DURING OPERATION
CC-QT-31	2.18E-03	8.66E-03	1.07E-05	1.009	4.96	1/2, MVFO1E11F028B
FL_IEGATWS	1.00E+00	8.45E-03	2.28E-08	1.009	1.00	FLAG FOR ATWS EVENTS

Event Name	Probability	Fus Ves	BimBm	Red W	Ach W	Description
OSA	8.22E-03	8.45E-03	2.77E-06	1.009	2.02	OPERATORS FAIL TO INITIATE SLCS
XXXX1C11_HCUS	1.00E-05	8.45E-03	2.28E-03	1.009	845.56	COMMON CAUSE FAILURE OF CONTROL RODS TO INSERT OCCURS
MNUNHP_HPCI	3.24E-02	8.00E-03	6.66E-07	1.008	1.24	HPCI SYSTEM INOP DUE TO MAINTENANCE
BTFD1R42S001B	4.54E-04	7.64E-03	4.53E-05	1.008	17.82	STATION BATTERY FAILS ON LOSS OF CHARGER INPUT
YVFO1N37F001	5.87E-03	7.31E-03	3.36E-06	1.007	2.24	BYPASS VALVES FAIL TO OPEN TO RELIEVE PRESSURE (MPL FOR UNI
OPHETBISO1	4.70E-03	6.96E-03	3.99E-06	1.007	2.47	OPERATORS FAIL TO OVERRIDE TB ISO
M2XC1E11F068B	1.35E-03	6.85E-03	1.37E-05	1.007	6.07	MOV F068B FAILS TO CONTROL FLOW - TRANSFERS CLOSED
%LOCV	2.20E-01	6.81E-03	8.34E-08	1.007	1.02	LOSS OF CONDENSER VACUUM
%ULHPCI	1.34E-04	6.50E-03	1.31E-04	1.007	49.51	HPCI STEAM LINE BREAK INITIATING EVENT
%ULRCIC	1.34E-04	6.50E-03	1.31E-04	1.007	49.51	RCIC STEAM LINE BREAK INITIATING EVENT
%ULRWCU	1.34E-04	6.50E-03	1.31E-04	1.007	49.51	RWCU LINE BREAK INITIATING EVENT
CC-HS-15	1.72E-04	6.37E-03	9.99E-05	1.006	38.08	4/4, PMSS1E11C001B PMSS1E11C001D PMSS1E11C001A PMSS1E11C001
%ATWSMS	9.70E-01	6.26E-03	1.74E-08	1.006	1.00	ATWS FOLLOWING MSIV CLOSURE/LOSS OF CONDENSER VACUUM EVENT
CC-DGS-6	1.92E-04	6.17E-03	8.65E-05	1.006	33.09	2/3, DGLR1R43S001A DGLR1R43S001B
P6SR1E41C001	2.47E-02	5.98E-03	6.52E-07	1.006	1.24	HPCI PUMP/TURBINE FAIL TO RUN
CC-HPISO-3	1.19E-04	5.93E-03	1.34E-04	1.006	50.73	2/2, MVFC1E41F002 MVFC1E41F003
CC-RCISO-3	1.19E-04	5.93E-03	1.34E-04	1.006	50.73	2/2, MVFC1E51F007 MVFC1E51F008
CC-RWISO-3	1.19E-04	5.93E-03	1.34E-04	1.006	50.73	2/2, MVFC1G31F001 MVFC1G31F004
CC-DGS-40	6.65E-05	5.84E-03	2.37E-04	1.006	88.93	2/3, CBFC1R22S005_5 CBFC1R22S007_6
OPHEEPA	5.91E-03	5.49E-03	2.50E-06	1.006	1.92	OPERATOR FAILS TO ALIGN 600-V BUS TO BACKUP 4160-V BUS
CC-DGS-5	1.92E-04	5.48E-03	7.69E-05	1.006	29.54	2/3, DGLR1R43S001C DGLR1R43S001B
CC-DGS-10	3.03E-03	5.41E-03	4.81E-06	1.005	2.78	1/3, DGSR1R43S001B
NBA	8.76E-03	5.12E-03	1.58E-06	1.005	1.58	NORM BUS FAST XFER (INCL SPUR XFER OF EMERG BUS TO SUT C)
MIUNHS_LOOP2	1.04E-03	5.06E-03	1.31E-05	1.005	5.85	LOOP 2 VALVE MISALIGNMENT
CC-DGS-26	5.87E-05	5.00E-03	2.29E-04	1.005	86.09	2/3, DGSS1R43S001A DGSS1R43S001C
OPHEEPANOLINK	5.00E-02	4.90E-03	2.64E-07	1.005	1.09	OPERATOR FAILS TO ALIGN 600-V BUS TO BACKUP 4160-V BUS
MCA	7.79E-03	4.88E-03	1.69E-06	1.005	1.62	MSIVS FAIL TO REMAIN OPEN GIVEN FEEDWATER OR FEEDWATER RES
BSSH1R23S003	9.02E-06	4.84E-03	1.45E-03	1.005	537.51	600-V BUS C FAILS
BTFD1R42S002C	4.54E-04	4.59E-03	2.72E-05	1.005	11.10	DIESEL BATTERY C FAILS TO PROVIDE POWER ON LOSS OF CHARGERS
%ULFWA	6.70E-05	4.47E-03	1.80E-04	1.004	67.65	FEEDWATER LINE A BREAK INITIATING EVENT
%ULFWB	6.70E-05	4.47E-03	1.80E-04	1.004	67.65	FEEDWATER LINE B BREAK INITIATING EVENT
BTFD1R42S001A	4.54E-04	4.39E-03	2.61E-05	1.004	10.67	STATION BATTERY FAILS ON LOSS OF CHARGER INPUT
CC-FWAISO-3	1.73E-04	4.29E-03	6.70E-05	1.004	25.86	2/2, CVFC1B21F010A CVFC1B21F032A
CC-FWBISO-6	1.73E-04	4.29E-03	6.70E-05	1.004	25.86	2/2, CVFC1B21F010B CVFC1B21F032B
CC-DGS-38	1.18E-03	4.14E-03	9.43E-06	1.004	4.50	1/3, CBFC1R22S007_6
MNUNQT_TRNB	1.12E-03	4.08E-03	9.80E-06	1.004	4.63	LOOP B TORUS COOLING VALVE MAINTENANCE
COB	2.34E-01	4.06E-03	4.67E-08	1.004	1.01	LOSS OF CONDENSATE GIVEN LOSS OF FEEDWATER
RPA	2.02E-01	3.99E-03	5.32E-08	1.004	1.02	RETURN TO POWER OP: MSIVs REMAIN OPEN
CC-HS-48	1.19E-04	3.94E-03	8.90E-05	1.004	34.04	2/2, MVFO1E11F068A MVFO1E11F068B
CC-SW-2	5.49E-03	3.91E-03	1.92E-06	1.004	1.71	1/4, PMOS1P41C001B
%FL-INTAKE	1.00E+00	3.90E-03	1.05E-08	1.004	1.00	FLAG FOR INITIATING EVENT CAUSED BY LOSS OF PSW DUE TO INTA
INTAKEPLUG_____I	1.00E-04	3.90E-03	1.05E-04	1.004	39.98	PSW INTAKE PLUGGING
SWREC2	1.00E-01	3.90E-03	1.05E-07	1.004	1.04	PLUGGING OF TRAVELING SCREEN NOT RECOVERED
CC-DGS-36	1.18E-03	3.84E-03	8.73E-06	1.004	4.24	1/3, CBFC1R22S005_5
CC-DGS-39	6.65E-05	3.47E-03	1.41E-04	1.003	53.21	2/3, CBFC1R22S005_5 CBFC1R22S006_6
CC-DGS-41	6.65E-05	3.25E-03	1.32E-04	1.003	49.85	2/3, CBFC1R22S006_6 CBFC1R22S007_6
CC-DGS-19	4.13E-05	3.23E-03	2.11E-04	1.003	79.14	2/3, DG1R1R43S001A DG1R1R43S001C
AVFO2P41F340	2.00E-03	3.20E-03	4.31E-06	1.003	2.60	AIR-OPERATED VALVE 2P41F340 FAILS TO OPEN
MNUNSB_BATT	2.00E-04	3.16E-03	4.25E-05	1.003	16.78	STATION BATTERY B DISCONNECTED FROM BUS

Event Name	Probability	Fus Ves	BimBm	Red W	Ach W	Description
OPHENOACT1	2.34E-03	2.94E-03	3.38E-06	1.003	2.25	OPERATORS FAIL TO TAKE ACTION GIVEN LOCA SIGNAL
CC-DGS-37	1.18E-03	2.86E-03	6.50E-06	1.003	3.41	1/3, CBFC1R22S006_6
GRB2&3	3.60E-01	2.77E-03	2.07E-08	1.003	1.00	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSE
%FL-LOBUSE	1.00E+00	2.72E-03	7.34E-09	1.003	1.00	FLAG FOR LOSS OF BUS E OR SUPPLY HARDWARE INITIATING EVENT
BSSH1R22S005___I	3.29E-03	2.72E-03	2.23E-06	1.003	1.82	4KV BUS E FAILS TO OPERATE
%FL-DCPAN	1.00E+00	2.63E-03	7.08E-09	1.003	1.00	FLAG FOR LOSS OF DC PANEL INITIATING EVENT
OPHE_DCPN	6.42E-02	2.63E-03	1.10E-07	1.003	1.04	HUMAN ERROR LEADING TO DEENERGIZATION OF PANEL S001
MNUN1R22S007	3.67E-05	2.56E-03	1.88E-04	1.003	70.77	MAINTENANCE ON BUS 4160VAC 1G
NBREC1	6.00E-02	2.46E-03	1.11E-07	1.002	1.04	RESTORE NORMAL AC, RESTART CONDENSATE (FAST XFER FAILED)
MVFO1E51F013	2.30E-03	2.24E-03	2.63E-06	1.002	1.97	MOTOR OPERATED VALVE 1E51-F013 FAILS TO OPEN
MVFO1E51F045	2.30E-03	2.24E-03	2.63E-06	1.002	1.97	STEAM SUPPLY VALVE 1E51-F045 FAILS TO OPEN
MVFO1E51F046	2.30E-03	2.24E-03	2.63E-06	1.002	1.97	LUBE OIL COOLING WATER VALVE FAILS TO OPEN
%FL-LOBUSF	1.00E+00	2.10E-03	5.66E-09	1.002	1.00	FLAG FOR LOSS OF BUS F INITIATING EVENT
BSSH1R22S006___I	3.29E-03	2.10E-03	1.72E-06	1.002	1.64	4KV BUS F FAILS TO OPERATE
MNUNRS_TRNB	3.56E-03	2.03E-03	1.53E-06	1.002	1.57	PUMP E11-C002B MAINTENANCE
CC-DGS-25	5.87E-05	2.03E-03	9.29E-05	1.002	35.49	2/3, DGSS1R43S001A DGSS1R43S001B
MNUNPS_TRNA	1.57E-02	1.94E-03	3.32E-07	1.002	1.12	MAINT ON PSW PUMP C001A
CC-DGS-27	5.87E-05	1.87E-03	8.58E-05	1.002	32.82	2/3, DGSS1R43S001B DGSS1R43S001C
OPHEHI_STARTHPI	3.78E-03	1.80E-03	1.28E-06	1.002	1.47	OPERATOR FAILS TO MANUALLY INITIATE HIGH PRESSURE INJECTION
CPOS1R43C010C	3.29E-03	1.78E-03	1.46E-06	1.002	1.54	AIR COMPRESSOR FAIL TO START
CBFC1R23S003_9M	9.62E-04	1.78E-03	4.99E-06	1.002	2.85	600-V ALT SUPPLY BRKR FROM XFMR CD FAILS TO CLOSE
MNUNSA_BATT	2.00E-04	1.76E-03	2.37E-05	1.002	9.80	BATTERY DISCONNECTED FROM BUS
CC-SW-36	2.68E-03	1.75E-03	1.76E-06	1.002	1.65	1/4, CVFR1P41F311D
OPHEEPBNOLINK	1.00E-01	1.75E-03	4.72E-08	1.002	1.02	OPERATOR FAILS TO ALIGN 600-V BUS TO BACKUP 4160-V BUS
MNUNDC_BATT	2.00E-04	1.71E-03	2.30E-05	1.002	9.55	BATTERY DISCONNECTED FROM PANEL
YEFRC	5.72E-01	1.66E-03	7.81E-09	1.002	1.00	FAILURE TO RECOVER CONDENSER VACUUM & RESTART FEEDWATER GIV
NBREC2	6.00E-02	1.46E-03	6.55E-08	1.001	1.02	RESTORE NORMAL AC, RESTART CONDENSATE (XD LOAD SHED FAILED)
%ATWSFW	7.10E-01	1.38E-03	5.25E-09	1.001	1.00	ATWS FOLLOWING LOSS OF FEEDWATER EVENT
OPHE1P41D103	1.00E-01	1.36E-03	3.67E-08	1.001	1.01	OPERATOR FAILS TO CLEAN STRAINER BY BACKWASH
MNUNRPSB	2.64E-03	1.32E-03	1.35E-06	1.001	1.50	MG SET IN MAINTENANCE
%IORV	1.80E-02	1.31E-03	1.96E-07	1.001	1.07	INADVERTENTLY OPENED SRV
CC-DGS-18	4.13E-05	1.30E-03	8.47E-05	1.001	32.43	2/3, DG1R1R43S001A DG1R1R43S001B
SWXO1R26M031C	1.11E-04	1.30E-03	3.14E-05	1.001	12.67	THROWOVER SWITCH TRANSFERS OPEN
SWXO1R26M031D	1.11E-04	1.30E-03	3.14E-05	1.001	12.67	THROWOVER SWITCH TRANSFERS OPEN
BSSH1R22S017	9.02E-06	1.29E-03	3.84E-04	1.001	143.65	DC SWITCHGEAR S017 FAILS DURING OPERATION
CC-DGS-20	4.13E-05	1.21E-03	7.91E-05	1.001	30.37	2/3, DG1R1R43S001B DG1R1R43S001C
CC-RS-15	4.16E-05	1.20E-03	7.74E-05	1.001	29.72	4/4, PMSS1E11C002C PMSS1E11C002A PMSS1E11C002B PMSS1E11C002
CBFO1R22S007_10	4.20E-04	1.17E-03	7.50E-06	1.001	3.78	4KV BUS G NORMAL SUPPLY BREAKER FAILS TO OPEN
VLFO1X41C005C	4.65E-04	1.17E-03	6.77E-06	1.001	3.51	DG C VENT SUPPLY LOUVERS FTO OR RELAY GLO FAILS TO ENERGIZE
CC-IS-5	2.18E-03	1.15E-03	1.42E-06	1.001	1.52	1/4, MVFC1P41F310B
SWXO1C71P001_A	1.11E-04	1.12E-03	2.72E-05	1.001	11.08	RPS BUS A SUPPLY SELECTOR SWITCH CONTACTS FAIL
SWXO1C71P001_B	1.11E-04	1.12E-03	2.72E-05	1.001	11.08	RPS BUS B SUPPLY SELECTOR SWITCH CONTACTS FAIL
CC-DGS-11	1.83E-05	1.09E-03	1.60E-04	1.001	60.39	2/3, DGSR1R43S001C DGSR1R43S001A
OPHECHRGR	1.00E-01	1.07E-03	2.89E-08	1.001	1.01	OPERATOR FAILS TO SWITCH TO STANDBY CHARGER
VLFO1X41C005A	4.65E-04	1.07E-03	6.21E-06	1.001	3.30	DG A VENT SUPPLY LOUVERS FTO OR COMMON FAN LOGIC FAILS
BTFD1R42S002A	4.54E-04	1.04E-03	6.16E-06	1.001	3.29	DIESEL BATTERY A FAILS TO PROVIDE POWER ON LOSS OF CHARGERS
CBFO1R22S007_1	4.20E-04	1.03E-03	6.60E-06	1.001	3.45	CIRCUIT BREAKER FAIL TO OPEN
%ULMSL	1.34E-04	9.96E-04	2.00E-05	1.001	8.43	MAIN STEAM LINE BREAK INITIATING EVENT
CBFO1R22S005_1	4.20E-04	9.41E-04	6.04E-06	1.001	3.24	CIRCUIT BREAKER FAIL TO OPEN

Event Name	Probability	Fus Ves	BimBm	Red W	Ach W	Description
CBFO1R22S005_11	4.20E-04	9.41E-04	6.04E-06	1.001	3.24	NORMAL SUPPLY BRKR FAILS TO OPEN
OPHEISOPSWF310	1.00E+00	8.73E-04	2.35E-09	1.001	1.00	OPERATORS FAIL TO MANUALLY ISOLATE F310
OPHEDG1BPSW	2.50E-01	8.63E-04	9.30E-09	1.001	1.00	OPERATOR FAILS TO ALIGN BACKUP COOLING WATER SUPPLY FROM UN
MNUNSB_CHRG	7.68E-05	8.44E-04	2.96E-05	1.001	11.99	CHARGER SWAPPING IN PROGRESS
MNUNHS_LOOP1	6.83E-03	8.20E-04	3.23E-07	1.001	1.12	LOOP 1 MAINTENANCE - RHRSW
%ATWSTT	1.64E+00	8.11E-04	1.33E-09	1.001	1.00	ATWS FOLLOWING TURBINE TRIP EVENT
QCA	8.62E-04	8.00E-04	2.50E-06	1.001	1.93	MAIN CONDENSER UNAVAILABLE FOR DHR (MSIVs OPEN)
IAXTIE	1.00E-01	7.74E-04	2.09E-08	1.001	1.01	FAILURE TO CROSSTIE TO UNIT 2 INSTRUMENT AIR
BTFD1R42S002B	4.54E-04	7.67E-04	4.55E-06	1.001	2.69	DIESEL BATTERY C FAILS TO PROVIDE POWER ON LOSS OF CHARGERS
SWFO1R44S001	1.69E-03	7.63E-04	1.22E-06	1.001	1.45	STATIC TRANSFER SWITCH FAILS DURING OPERATION
S2PL1E11D003B	2.15E-04	7.21E-04	9.05E-06	1.001	4.36	STRAINER D003B PLUGS
CC-SW-19	2.84E-04	7.18E-04	6.81E-06	1.001	3.53	1/2, CVFO1P41F438B
PASS2P41C002	2.49E-03	7.17E-04	7.76E-07	1.001	1.29	STANDBY SERVICE WATER PUMP 2P41C002 FAILS TO START
CC-PS-11_____I	3.44E-04	7.01E-04	5.48E-06	1.001	3.03	3/4, PMOR1P41C001C PMOR1P41C001D PMOR1P41C001B (1 YEAR)
CC-PS-12_____I	3.44E-04	7.01E-04	5.48E-06	1.001	3.03	3/4, PMOR1P41C001C PMOR1P41C001D PMOR1P41C001A (1 YEAR)
CC-PS-13_____I	3.44E-04	7.01E-04	5.48E-06	1.001	3.03	3/4, PMOR1P41C001C PMOR1P41C001B PMOR1P41C001A (1 YEAR)
CC-PS-14_____I	3.44E-04	7.01E-04	5.48E-06	1.001	3.03	3/4, PMOR1P41C001D PMOR1P41C001B PMOR1P41C001A (1 YEAR)
C3XO1R22S017_4T	6.22E-05	6.70E-04	2.90E-05	1.001	11.78	COMMON CHARGER OUTPUT BREAKER TRANSFERS OPEN
INOR1R44S001	1.48E-03	6.66E-04	1.22E-06	1.001	1.45	STATIC INVERTER FAILS DURING OPERATION
PR8	2.00E-04	6.66E-04	8.97E-06	1.001	4.33	PRESS RELIEF INADEQ: MISVC (4+ SRVS FTO); BV UNAVAIL
XROR1R23S004	1.25E-05	6.62E-04	1.43E-04	1.001	54.04	STATION SERVICE TRANSFORMER D FAILS TO OPERATE
CC-MSISO-9	1.33E-05	6.62E-04	1.34E-04	1.001	50.73	8/8, AVFC1B21F022A AVFC1B21F022B AVFC1B21F022C AVFC1B21F022
MNUNPS_TRNC	1.57E-02	6.55E-04	1.12E-07	1.001	1.04	MAINT ON PSW PUMP C001C
MCC	3.19E-01	6.50E-04	5.49E-09	1.001	1.00	MSIVS FAIL TO REMAIN OPEN GIVEN LOCV WITH FAILURE TO RESTAR
COBSFWLS	2.13E-01	6.44E-04	8.16E-09	1.001	1.00	
MNUNIA_CCWB	1.47E-02	6.34E-04	1.16E-07	1.001	1.04	CCW PUMP B MAINTENANCE
MNUNPS_TRND	1.57E-02	6.31E-04	1.08E-07	1.001	1.04	MAINT ON PSW PUMP C001D
FCA	4.18E-02	6.29E-04	4.06E-08	1.001	1.01	OPERATOR FAILS TO CONTROL LEVEL NEAR -100" GIVEN ATWS WITH
S3PL1P41D103A	1.99E-04	6.29E-04	8.52E-06	1.001	4.16	DIVISION I STRAINER D103A PLUGS
S3PL1P41D103A__I	7.26E-02	6.29E-04	2.33E-08	1.001	1.01	PSW STRAINER D103A PLUGS
S3PL1P41D103B	1.99E-04	6.29E-04	8.52E-06	1.001	4.16	DIVISION II STRAINER D103B PLUGS
XROR1R23S003___I	4.56E-03	6.22E-04	3.68E-07	1.001	1.14	STATION SERVICE TRANSFORMER C FAILS TO OPERATE
COBS	7.66E-01	5.95E-04	2.09E-09	1.001	1.00	RECOVERY RULE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODE
FL_FRB	1.00E+00	5.95E-04	1.60E-09	1.001	1.00	FLAG FOR FAILURE TO RESTART FW/RECOVER CONDENSATE GIVEN LO
FWL	7.22E-01	5.95E-04	2.22E-09	1.001	1.00	FEEDWATER UNAVAILABLE GIVEN LOFW
YEFRB	1.92E-01	5.95E-04	8.35E-09	1.001	1.00	FAILURE TO RESTART FEEDWATER & RECOVER CONDENSATE GIVEN LOF
CC-IS-18	1.19E-05	5.84E-04	1.32E-04	1.001	50.16	4/4, MVFC1P41F310D MVFC1P41F310B MVFC1P41F310C MVFC1P41F310
MNUNIS_VLVB	1.27E-03	5.82E-04	1.23E-06	1.001	1.46	VALVE MAINTENANCE - F310B
CC-SW-20	2.84E-04	5.81E-04	5.51E-06	1.001	3.04	1/2, CVFO1P41F438A
MVXC1E11F003B	1.76E-04	5.65E-04	8.66E-06	1.001	4.21	MOTOR-OPERATED VALVE 1E11F003B TRANSFERS CLOSED
MVXC1E11F047B	1.76E-04	5.65E-04	8.66E-06	1.001	4.21	MOTOR-OPERATED VALVE 1E11F047B TRANSFERS CLOSED
BSSH1R22S007	9.02E-06	5.64E-04	1.68E-04	1.001	63.51	4KV BUS G FAILS DURING OPERATION
%FL-LOBUSG	1.00E+00	5.44E-04	1.47E-09	1.001	1.00	FLAG FOR LOSS OF BUS G INITIATING EVENT
BSSH1R22S007___I	3.29E-03	5.44E-04	4.45E-07	1.001	1.16	4KV BUS G FAILS DURING OPERATION
XXBG_TRANSIENT	2.00E-01	5.44E-04	7.33E-09	1.001	1.00	LOSS OF BUS G CAUSES AN INITIATING EVENT (TRIP)
FL_LER_VD	1.00E+00	5.40E-04	1.46E-09	1.001	1.00	FLAG FOR DRYWELL VENTING
S3PL1P41D103B__I	7.26E-02	5.26E-04	1.95E-08	1.001	1.01	PSW STRAINER D103B PLUGS - 1 YEAR
SWXO1R26M032C	1.11E-04	5.18E-04	1.26E-05	1.001	5.66	THROWOVER SWITCH CONTACTS FAIL OPEN
CBFO1R23S003_2M	4.20E-04	5.11E-04	3.28E-06	1.001	2.22	600-V LOAD BRKR FROM XFMR C FAILS TO OPEN

Event Name	Probability	Fus Ves	BimBm	Red W	Ach W	Description
VLFO1X41C005B	4.65E-04	5.09E-04	2.95E-06	1.001	2.09	DG B VENT SUPPLY LOUVERS FTO OR COMMON FAN LOGIC FAILS
CC-SW-1	5.49E-03	4.76E-04	2.34E-07	1.000	1.09	1/4, PMOS1P41C001A
MNUNRS_DIVI	4.74E-03	4.69E-04	2.67E-07	1.000	1.10	RHR LOOP 1 MAINT OR MISALIGNMENT OF VALVES IN LOOP 1 FLOW P
CC-HS-46	2.18E-03	4.59E-04	5.67E-07	1.000	1.21	1/2, MVFO1E11F068A
BCOR1R42S029	4.46E-04	4.33E-04	2.61E-06	1.000	1.97	STATION BATTERY CHARGER FAILS TO PROVIDE OUTPUT
BCOR1R42S030	4.46E-04	4.33E-04	2.61E-06	1.000	1.97	STATION BATTERY CHARGER FAILS TO PROVIDE OUTPUT
CBFO1R22S006_1	4.20E-04	4.32E-04	2.77E-06	1.000	2.03	CIRCUIT BREAKER FAIL TO OPEN
CBFO1R22S006_11	4.20E-04	4.32E-04	2.77E-06	1.000	2.03	4KV BUS F NORMAL SUPPLY BREAKER FAILS TO OPEN
MNUN1R22S005	3.67E-05	4.32E-04	3.17E-05	1.000	12.76	MAINTENANCE ON BUS 4160VAC 1E
MNUN1R22S006	3.67E-05	4.23E-04	3.11E-05	1.000	12.53	MAINTENANCE ON 4160VAC 1F
CC-DGS-13	1.83E-05	4.21E-04	6.20E-05	1.000	24.02	2/3, DGSR1R43S001A DGSR1R43S001B
CC-PS-15	2.13E-07	4.19E-04	5.30E-03	1.000	1.97E+03	4/4, PMOR1P41C001C PMOR1P41C001D PMOR1P41C001B PMOR1P41C001
CC-HS-5	1.25E-04	4.14E-04	8.91E-06	1.000	4.31	2/4, PMSS1E11C001B PMSS1E11C001D
CC-DGS-12	1.83E-05	4.00E-04	5.89E-05	1.000	22.86	2/3, DGSR1R43S001C DGSR1R43S001B
MVXC1E51F007	5.06E-04	3.90E-04	2.08E-06	1.000	1.77	MOTOR OPERATED VALVE 1E51-F007 TRANSFERS CLOSED
MVXC1E51F008	5.06E-04	3.90E-04	2.08E-06	1.000	1.77	MOTOR OPERATED VALVE 1E51-F008 TRANSFERS CLOSED
MVXC1E51F010	5.06E-04	3.90E-04	2.08E-06	1.000	1.77	MOTOR OPERATED VALVE 1E51-F010 TRANSFERS CLOSED
MVXC1E51F012	5.06E-04	3.90E-04	2.08E-06	1.000	1.77	MOTOR OPERATED VALVE 1E51-F012 TRANSFERS CLOSED
CC-SW-33	2.68E-03	3.87E-04	3.89E-07	1.000	1.14	1/4, CVFR1P41F311C
CC-QV-15	4.74E-05	3.82E-04	2.17E-05	1.000	9.07	4/4, AVFO1T48F318 AVFO1T48F319 AVFO1T48F320 AVFO1T48F326
CC-SW-34	2.68E-03	3.73E-04	3.75E-07	1.000	1.14	1/4, CVFR1P41F311A
AVXC1P41F066	3.89E-05	3.60E-04	2.49E-05	1.000	10.25	AIR OPERATED VALVE F066 TRANSFERS CLOSED
AVXC1P41F067___I	1.42E-02	3.60E-04	6.83E-08	1.000	1.02	AIR-OPERATED VALVE F067 TRANSFERS CLOSED (1 YR)
CC-SW-35	2.68E-03	3.56E-04	3.58E-07	1.000	1.13	1/4, CVFR1P41F311B
CBFC1R25S064_39	9.62E-04	3.43E-04	9.60E-07	1.000	1.36	CROSS TIE CIRCUIT BREAKER FAILS TO CLOSE
CBFC1R25S064_40	9.62E-04	3.43E-04	9.60E-07	1.000	1.36	CROSS TIE CIRCUIT BREAKER FAIL TO CLOSE
CBFC1R25S065_39	9.62E-04	3.43E-04	9.60E-07	1.000	1.36	CROSS TIE CIRCUIT BREAKER FAILS TO CLOSE
CBFC1R25S065_40	9.62E-04	3.43E-04	9.60E-07	1.000	1.36	CROSS TIE CIRCUIT BREAKER FAILS TO CLOSE
XXXX1B21_MSIVSIG	6.73E-06	3.35E-04	1.34E-04	1.000	50.73	MSIV ISOLATION SIGNAL NOT RECEIVED
XXXX1E41_ISOLOGI	6.73E-06	3.35E-04	1.34E-04	1.000	50.73	HPCI HI STEAM LINE FLOW, HIGH TEMP ISOLATION LOGIC FAILS
XXXX1E51_ISOLOGI	6.73E-06	3.35E-04	1.34E-04	1.000	50.73	RCIC HI STEAM LINE FLOW AND HI TEMP ISOLATION LOGIC FAILS
XXXX1G31_ISOLOGI	6.73E-06	3.35E-04	1.34E-04	1.000	50.73	RWCU ISOLATION LOGIC FAILS
AVXC1T48F082	3.89E-05	3.14E-04	2.17E-05	1.000	9.07	VENT VALVE F082 TRANSFERS CLOSED
AVXO1T46F005	3.89E-05	3.14E-04	2.17E-05	1.000	9.07	AOV F005 TRANSFERS OPEN
AVXO1T48F081	3.89E-05	3.14E-04	2.17E-05	1.000	9.07	SGTS ISOLATION VALVE F081 TRANSFERS OPEN
MNUNDC_CHRG	7.68E-05	3.11E-04	1.09E-05	1.000	5.05	CHARGER SWAPPING IN PROGRESS
CC-QT-33	1.19E-04	3.07E-04	6.93E-06	1.000	3.57	2/2, MVFO1E11F028B MVFO1E11F028A
MNUNDA_BATT	2.00E-04	3.04E-04	4.09E-06	1.000	2.52	BATTERY DISCONNECTED FROM PANEL
CC-QV-1	1.86E-03	3.03E-04	4.39E-07	1.000	1.16	1/4, AVFO1T48F318
CC-QV-4	1.86E-03	3.03E-04	4.39E-07	1.000	1.16	1/4, AVFO1T48F326
MNUN1R24S026	3.04E-04	3.02E-04	2.67E-06	1.000	1.99	MAINTENANCE ON 1R24-SO26 (ONCE PER 54MOS.;12HRS PER TIME)
MGOR1C71S001B	8.62E-04	2.93E-04	9.15E-07	1.000	1.34	RPS MG SET FAILS TO OPERATE
CC-IS-3	6.71E-06	2.86E-04	1.15E-04	1.000	43.61	2/2, RLFD1P41K15A RLFD1P41K12A
CC-ISSIG-3	6.71E-06	2.86E-04	1.15E-04	1.000	43.61	2/2, RLFD1R43SWETR1 RLFD1R43SWETR2
CC-ISSIG-6	6.71E-06	2.86E-04	1.15E-04	1.000	43.61	2/2, RLFD1P41K12A RLFD1P41K15A
DUR1	3.00E-01	2.84E-04	2.55E-09	1.000	1.00	OFFSITE POWER RESTORED WITHIN 30 MINUTES
UOL1	3.30E-02	2.84E-04	2.32E-08	1.000	1.01	LOCA SIGNAL ON OPPOSITE UNIT, LOSP FOR 30 MINUTES
MNUNXC	6.96E-05	2.57E-04	9.96E-06	1.000	4.70	SUT C INOP FOR MAINTENANCE DURING POWER OPERATION
MNUNXD	6.96E-05	2.57E-04	9.96E-06	1.000	4.70	SUT D INOP FOR MAINTENANCE

Event Name	Probability	Fus Ves	BimBm	Red W	Ach W	Description
FAILRATERATIO	1.00E-01	2.45E-04	6.60E-09	1.000	1.00	ASSUMED RATIO OF PANEL TO MCC FAILURE RATES. (RISKMAN MODEL
MCOR1R25S065	7.94E-06	2.45E-04	8.31E-05	1.000	31.84	R25S065 FAILS DURING OPERATION
CC-HPISO-1	2.18E-03	2.37E-04	2.92E-07	1.000	1.11	1/2, MVFC1E41F002
CC-HPISO-2	2.18E-03	2.37E-04	2.92E-07	1.000	1.11	1/2, MVFC1E41F003
CC-RCISO-1	2.18E-03	2.37E-04	2.92E-07	1.000	1.11	1/2, MVFC1E51F007
CC-RCISO-2	2.18E-03	2.37E-04	2.92E-07	1.000	1.11	1/2, MVFC1E51F008
CC-RWISO-1	2.18E-03	2.37E-04	2.92E-07	1.000	1.11	1/2, MVFC1G31F001
CC-RWISO-2	2.18E-03	2.37E-04	2.92E-07	1.000	1.11	1/2, MVFC1G31F004
CBXO1R22S007_9	4.18E-06	2.21E-04	1.43E-04	1.000	54.04	4160-V SUPPLY BRK. TO XFMR D XFERS OPEN
CBXO1R23S004_9M	4.18E-06	2.21E-04	1.43E-04	1.000	54.04	600-V LOAD BKR. FROM XFMR D TRANSFERS OPEN
M2XC1E11F068A	1.35E-03	2.15E-04	4.30E-07	1.000	1.16	MOV F068A FAILS TO CONTROL FLOW - TRANSFERS CLOSED
MNUNHS_PUMPA	1.62E-02	2.15E-04	3.57E-08	1.000	1.01	PUMP C001A MAINTENANCE
MIUNHS_PRSW	1.31E-05	2.13E-04	4.38E-05	1.000	17.24	MISCALIBRATION OF PRESS. SWITCHES - F068A & B NO PERMISSIVE
CC-PS-10_____I	8.46E-04	2.12E-04	6.76E-07	1.000	1.25	2/4, PMOR1P41C001B PMOR1P41C001A (1 YEAR)
CC-PS-5_____I	8.46E-04	2.12E-04	6.76E-07	1.000	1.25	2/4, PMOR1P41C001C PMOR1P41C001D (1 YEAR)
CC-PS-6_____I	8.46E-04	2.12E-04	6.76E-07	1.000	1.25	2/4, PMOR1P41C001C PMOR1P41C001B (1 YEAR)
CC-PS-7_____I	8.46E-04	2.12E-04	6.76E-07	1.000	1.25	2/4, PMOR1P41C001C PMOR1P41C001A (1 YEAR)
CC-PS-8_____I	8.46E-04	2.12E-04	6.76E-07	1.000	1.25	2/4, PMOR1P41C001D PMOR1P41C001B - 1YR EXPOSURE
CC-PS-9_____I	8.46E-04	2.12E-04	6.76E-07	1.000	1.25	2/4, PMOR1P41C001D PMOR1P41C001A (1 YEAR)
FUSO1R42S001B_A	2.21E-05	2.02E-04	2.46E-05	1.000	10.13	2000A FUSE IN BOX A BLOWS PREMATURELY
FUSO1R42S001B_B	2.21E-05	2.02E-04	2.46E-05	1.000	10.13	2000A FUSE IN BOX B BLOWS PREMATURELY
FUSO1R42S001B_C	2.21E-05	2.02E-04	2.46E-05	1.000	10.13	2000A FUSE IN BOX C BLOWS PREMATURELY
SORV2	1.17E-04	2.01E-04	4.63E-06	1.000	2.72	TWO SRVS FAIL TO RECLOSE
CC-RS-3	7.78E-04	2.00E-04	6.92E-07	1.000	1.26	1/4, PMSS1E11C002B
HIRE20	2.00E-01	1.97E-04	2.65E-09	1.000	1.00	RECOVERY OF HIGH PRESS INJECT (CRD AVAILABLE; 02)
RLFD1R22EDX-C	1.34E-04	1.96E-04	3.95E-06	1.000	2.47	RELAY FAIL ON DEMAND
RLFD1R43-86G	1.34E-04	1.96E-04	3.95E-06	1.000	2.47	RELAY FAIL ON DEMAND
RLFD1R43ETR1C	1.34E-04	1.96E-04	3.95E-06	1.000	2.47	RELAY FAIL ON DEMAND
RLFD1R43K757C	1.34E-04	1.96E-04	3.95E-06	1.000	2.47	RELAY FAIL ON DEMAND
RLFD1R43K86G	1.34E-04	1.96E-04	3.95E-06	1.000	2.47	RELAY FAIL ON DEMAND
RLFD1S32K260	1.34E-04	1.96E-04	3.95E-06	1.000	2.47	RELAY FAIL ON DEMAND
RLFD1S32K261	1.34E-04	1.96E-04	3.95E-06	1.000	2.47	RELAY FAIL ON DEMAND
CVFO1E51F011	2.87E-04	1.95E-04	1.83E-06	1.000	1.68	CHECK VALVE 1E51F011 FAILS TO OPEN
CVFO1E51F014	2.87E-04	1.95E-04	1.83E-06	1.000	1.68	CHECK VALVE 1E51-F014 FAILS TO OPEN
CVFO1E51F040	2.87E-04	1.95E-04	1.83E-06	1.000	1.68	CHECK VALVE 1E51F040 FAILS TO OPEN
CC-RD-13	2.84E-04	1.93E-04	1.83E-06	1.000	1.68	1/2, CVFO1B21F010A
MNUNDB_BATT	2.00E-04	1.90E-04	2.55E-06	1.000	1.95	BATTERY DISCONNECTED FROM DC PANEL
HXPL1E11B001B	6.07E-05	1.88E-04	8.33E-06	1.000	4.09	HEAT EXCHANGER B001B RUPTURES/PLUGS
RLFD1R22EDX-A	1.34E-04	1.81E-04	3.65E-06	1.000	2.35	RELAY FAIL ON DEMAND
RLFD1R43-86E	1.34E-04	1.81E-04	3.65E-06	1.000	2.35	RELAY FAIL ON DEMAND
RLFD1R43ETR1A	1.34E-04	1.81E-04	3.65E-06	1.000	2.35	RELAY FAIL ON DEMAND
RLFD1R43K757A	1.34E-04	1.81E-04	3.65E-06	1.000	2.35	RELAY FAIL ON DEMAND
RLFD1R43K86E	1.34E-04	1.81E-04	3.65E-06	1.000	2.35	RELAY FAIL ON DEMAND
RLFD1S32K240	1.34E-04	1.81E-04	3.65E-06	1.000	2.35	RELAY FAIL ON DEMAND
RLFD1S32K241	1.34E-04	1.81E-04	3.65E-06	1.000	2.35	RELAY FAIL ON DEMAND
MVFO1E41F001	2.30E-03	1.79E-04	2.09E-07	1.000	1.08	MOTOR OPERATED VALVE F001 FAILS TO OPEN
MVFO1E41F006	2.30E-03	1.79E-04	2.09E-07	1.000	1.08	VALVE F006 FAILS TO OPEN
MVFO1E41F059	2.30E-03	1.79E-04	2.09E-07	1.000	1.08	LUBE OIL COOLING VALVE FAILS TO OPEN
CC-FWAISO-1	2.65E-03	1.75E-04	1.78E-07	1.000	1.07	1/2, CVFC1B21F010A

Event Name	Probability	Fus Ves	BimBm	Red W	Ach W	Description
CC-FWAISO-2	2.65E-03	1.75E-04	1.78E-07	1.000	1.07	1/2, CVFC1B21F032A
CC-FWBISO-4	2.65E-03	1.75E-04	1.78E-07	1.000	1.07	1/2, CVFC1B21F010B
CC-FWBISO-5	2.65E-03	1.75E-04	1.78E-07	1.000	1.07	1/2, CVFC1B21F032B
BTOR1R42S001B	1.81E-05	1.65E-04	2.46E-05	1.000	10.13	STATION BATTERY FAILS DURING OPERATION
CC-QV-10	2.32E-05	1.63E-04	1.89E-05	1.000	8.03	2/4, AVFO1T48F320 AVFO1T48F326
CC-QV-5	2.32E-05	1.63E-04	1.89E-05	1.000	8.03	2/4, AVFO1T48F318 AVFO1T48F319
CC-QV-6	2.32E-05	1.63E-04	1.89E-05	1.000	8.03	2/4, AVFO1T48F318 AVFO1T48F320
CC-QV-9	2.32E-05	1.63E-04	1.89E-05	1.000	8.03	2/4, AVFO1T48F319 AVFO1T48F326
AVXC1E11F065B	6.30E-04	1.62E-04	6.92E-07	1.000	1.26	AIR-OPERATED TORUS SUCTION VALVE F065B TRANSFERS CLOSED
OPHEVH1	1.00E+00	1.61E-04	4.34E-10	1.000	1.00	OPERATOR FAILS TO MANUALLY START FAN
BCOR1R42S032C	4.46E-04	1.60E-04	9.65E-07	1.000	1.36	NORMAL CHARGER FAILS DURING OPERATION
AVXC1P41F066___I	1.42E-02	1.59E-04	3.02E-08	1.000	1.01	AIR-OPERATED VALVE TRANSFER CLOSED
CBXO1R22S005_10I	1.52E-03	1.56E-04	2.75E-07	1.000	1.10	4160-V SUPPLY BRKR TO XFMR C XFERS OPEN
CBXO1R23S003_2MI	1.52E-03	1.56E-04	2.75E-07	1.000	1.10	600-V LOAD BRKR FROM XFMR C TRANSFERS OPEN
CC-HS-1	3.33E-03	1.53E-04	1.24E-07	1.000	1.05	1/4, PMSS1E11C001B
CC-HS-2	3.33E-03	1.53E-04	1.24E-07	1.000	1.05	1/4, PMSS1E11C001D
MNUNHS_PUMPB	1.62E-02	1.53E-04	2.54E-08	1.000	1.01	PUMP C001B MAINTENANCE
MNUNHS_PUMPD	1.62E-02	1.53E-04	2.54E-08	1.000	1.01	PUMP C001D MAINTENANCE
SWXO1R26M032A	1.11E-04	1.50E-04	3.65E-06	1.000	2.35	THROWOVER SWITCH CONTACTS FAIL OPEN
CC-RS-17	5.68E-04	1.46E-04	6.92E-07	1.000	1.26	1/4, CVFO1E11F031B
FUSO1R25S065	2.21E-05	1.36E-04	1.66E-05	1.000	7.17	SUPPLY FUSE PREMATURELY OPENS
XROR1R23S004___I	4.56E-03	1.34E-04	7.91E-08	1.000	1.03	STATION SERVICE TRANSFORMER D FAILS TO OPERATE
RLFD1R43ETR1B	1.34E-04	1.27E-04	2.55E-06	1.000	1.95	RELAY FAIL ON DEMAND
RLFD1R43K757B	1.34E-04	1.27E-04	2.55E-06	1.000	1.95	RELAY FAIL ON DEMAND
RLFD1R43K86F	1.34E-04	1.27E-04	2.55E-06	1.000	1.95	RELAY FAIL ON DEMAND
OPHEDW2	1.26E-02	1.24E-04	2.65E-08	1.000	1.01	OPERATOR FAILS TO INITIATE DRYWELL SPRAY SYSTEM
MIUNHS_LOOP1	1.04E-03	1.24E-04	3.21E-07	1.000	1.12	LOOP 1 VALVE MISALIGNMENT
CC-SW-15	3.69E-06	1.23E-04	8.96E-05	1.000	34.26	4/4, PMOS1P41C001A PMOS1P41C001B PMOS1P41C001C PMOS1P41C001
PASR2P41C002	7.97E-04	1.22E-04	4.11E-07	1.000	1.15	STANDBY SERVICE WATER PUMP 2P41C002 FAILS TO RUN
FUSO1R42S001A_A	2.21E-05	1.03E-04	1.25E-05	1.000	5.64	2000A FUSE IN BOX A BLOWS PREMATURELY
FUSO1R42S001A_B	2.21E-05	1.03E-04	1.25E-05	1.000	5.64	2000A FUSE IN BOX B BLOWS PREMATURELY
FUSO1R42S001A_C	2.21E-05	1.03E-04	1.25E-05	1.000	5.64	2000A FUSE IN BOX C BLOWS PREMATURELY
HVXC1P41F063___I	2.54E-04	9.48E-05	1.01E-06	1.000	1.37	MANUAL VALVE TRANSFER CLOSED
PCXC1P41D137___I	3.68E-04	9.22E-05	6.76E-07	1.000	1.25	PRESSURE REGULATOR D137 TRANSFERS CLOSED
PCXC1P41D138___I	3.68E-04	9.22E-05	6.76E-07	1.000	1.25	PRESSURE REGULATOR D138 TRANSFERS CLOSED
FUSO1R42S002C	2.21E-05	8.86E-05	1.08E-05	1.000	5.01	FUSE BLOWS SPURIOUSLY
CC-SW-43	7.07E-05	8.52E-05	3.25E-06	1.000	2.21	4/4, CVFR1P41F311C CVFR1P41F311A CVFR1P41F311B CVFR1P41F311
BTOR1R42S001A	1.81E-05	8.39E-05	1.25E-05	1.000	5.64	STATION BATTERY FAILS DURING OPERATION
VOPA	1.01E-03	8.37E-05	2.23E-07	1.000	1.08	OPERATOR FAILS TO TRIP UNNEEDED PUMPS ON LOSS OF ROOM COOLI
FNSS1T41B005B	2.52E-03	8.31E-05	8.89E-08	1.000	1.03	COOLER B FAN FAILS TO START AFTER RECEIVING SIGNAL
RLFD1R22EDX-B	1.34E-04	8.18E-05	1.65E-06	1.000	1.61	RELAY FAIL ON DEMAND
RLFD1R43-86F	1.34E-04	8.18E-05	1.65E-06	1.000	1.61	RELAY FAIL ON DEMAND
RLFD1S32K250	1.34E-04	8.18E-05	1.65E-06	1.000	1.61	RELAY FAIL ON DEMAND
RLFD1S32K251	1.34E-04	8.18E-05	1.65E-06	1.000	1.61	RELAY FAIL ON DEMAND
CC-SW-3	5.49E-03	7.96E-05	3.91E-08	1.000	1.01	1/4, PMOS1P41C001C
CC-SW-4	5.49E-03	7.96E-05	3.91E-08	1.000	1.01	1/4, PMOS1P41C001D
XROR1R11S042	1.25E-05	7.70E-05	1.66E-05	1.000	7.17	ESSENTIAL BUS1A TRANSFORMER FAILS DURING OPERATION
CBFO1R25S036_25	4.20E-04	7.34E-05	4.71E-07	1.000	1.17	FEEDER BREAKER FAILS TO OPEN
BTOR1R42S002C	1.81E-05	7.26E-05	1.08E-05	1.000	5.01	DIESEL BATTERY C FAILS DURING OPERATION

Event Name	Probability	Fus Ves	BimBm	Red W	Ach W	Description
DE2	1.78E-02	7.07E-05	1.07E-08	1.000	1.00	EMERG DEP FAILS (ELEV DW TEMP)
FL_#SORV0	1.00E+00	7.07E-05	1.91E-10	1.000	1.00	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED
FL_NODWC	1.00E+00	7.07E-05	1.91E-10	1.000	1.00	FLAG FR DRYWELL COLING BEING UNAVAILABLE
SWXO1R26M032B	1.11E-04	6.78E-05	1.65E-06	1.000	1.61	THROWOVER SWITCH CONTACTS FAIL OPEN
AVFO1P41F035B	2.00E-03	6.60E-05	8.89E-08	1.000	1.03	PSW VALVE F035B FAILS TO OPEN
CC-SW-21	2.49E-06	5.83E-05	6.30E-05	1.000	24.37	2/2, CVFO1P41F438B CVFO1P41F438A
MNUNDA_CHRG	7.68E-05	5.71E-05	2.00E-06	1.000	1.74	CHARGER SWAPPING IN PROGRESS
MVXC1P41F380A	1.08E-05	5.61E-05	1.39E-05	1.000	6.17	MOTOR OPERATED VALVE F380A TRANSFERS CLOSED
MVXC1P41F380A__I	3.96E-03	5.61E-05	3.82E-08	1.000	1.01	MOTOR-OPERATED VALVE F380A TRANSFERS CLOSED (1 YR)
MVXC1P41F380B	1.08E-05	5.61E-05	1.39E-05	1.000	6.17	MOTOR OPERATED VALVE F380B TRANSFERS CLOSED
OPHEEPD	2.62E-02	5.33E-05	5.49E-09	1.000	1.00	OP FAILS TO TAKE REQUIRED MANUAL ACTIONS TO SUPPLY DFO TO D
PMSS1Y52C101C	2.35E-02	5.33E-05	6.12E-09	1.000	1.00	PUMP 101 FAILS TO OPERATE GIVEN START SIGNAL
HVXC1E11F002B	3.19E-05	5.22E-05	4.41E-06	1.000	2.64	MANUAL VALVE F002B TRANSFERS CLOSED
HVXC1E11F014B	3.19E-05	5.22E-05	4.41E-06	1.000	2.64	MANUAL VALVE F014B TRANSFERS CLOSED
HVXC1E11F216B	3.19E-05	5.22E-05	4.41E-06	1.000	2.64	MANUAL VALVE F216B TRANSFERS CLOSED
HVXC1E11F217B	3.19E-05	5.22E-05	4.41E-06	1.000	2.64	MANUAL VALVE F217B TRANSFERS CLOSED
HVXC1E11F309D	3.19E-05	5.22E-05	4.41E-06	1.000	2.64	MANUAL VALVE F309D TRANSFERS CLOSED
CC-RS-10	3.04E-05	4.98E-05	4.41E-06	1.000	2.64	2/4, PMSS1E11C002B PMSS1E11C002D
CC-HS-11	3.03E-05	4.96E-05	4.41E-06	1.000	2.64	3/4, PMSS1E11C001B PMSS1E11C001D PMSS1E11C001A
CC-HS-12	3.03E-05	4.96E-05	4.41E-06	1.000	2.64	3/4, PMSS1E11C001B PMSS1E11C001D PMSS1E11C001C
OPHE1N11F002MISP	4.70E-03	4.94E-05	2.83E-08	1.000	1.01	MOVS IN HIGH PRESSURE PIPING MISPOSITIONED PRIOR TO TRIP
XRFO1S11S004	2.10E-05	4.88E-05	6.26E-06	1.000	3.32	SUT C FAILS TO OPERATE
XRFO1S11S005	2.10E-05	4.88E-05	6.26E-06	1.000	3.32	SUT D FAILS TO OPERATE
BSSH1R22S016	9.02E-06	4.73E-05	1.41E-05	1.000	6.24	DC SWITCHGEAR S016 FAILS DURING OPERATION
CVFO1E11F046B	2.87E-04	4.67E-05	4.38E-07	1.000	1.16	RHR PUMP B MINIFLOW CHECK VALVE F046B FAILS TO OPEN
CC-SW-22	2.84E-04	4.62E-05	4.38E-07	1.000	1.16	1/4, CVFO1P41F311B
SWXO1R26M031A__I	4.06E-02	4.58E-05	3.04E-09	1.000	1.00	SWITCH TRANSFER OPEN
SWXO1R26M031B__I	4.06E-02	4.58E-05	3.04E-09	1.000	1.00	SWITCH TRANSFER OPEN
%ALOCA	2.20E-03	4.19E-05	5.13E-08	1.000	1.02	LOCA - SPURIOUS ELEC SRV ACTUATION & BLOWDOWN
CBXO1R22S007_9_I	1.52E-03	3.82E-05	6.76E-08	1.000	1.03	4160-V SUPPLY BRK. TO XFMR D XFERS OPEN
CBXO1R23S004_9MI	1.52E-03	3.82E-05	6.76E-08	1.000	1.03	600-V LOAD BKR. FROM XFMR D TRANSFERS OPEN
BRSH1C71P001_A	7.94E-06	3.74E-05	1.27E-05	1.000	5.71	RPS BUS A SHORTS DURING OPERATION
BRSH1C71P001_B	7.94E-06	3.74E-05	1.27E-05	1.000	5.71	RPS BUS B SHORTS DURING OPERATION
XROR1R23S003	1.25E-05	3.66E-05	7.90E-06	1.000	3.93	STATION SERVICE TRANSFORMER C FAILS TO OPERATE
MCOR1R24S003	7.94E-06	3.58E-05	1.22E-05	1.000	5.51	CONTROL BLDG 600-V MCC 1C FAILS
CC-RS-48	2.18E-04	3.54E-05	4.38E-07	1.000	1.16	1/4, PMSR1E11C002B
CC-QV-11	7.50E-06	3.54E-05	1.27E-05	1.000	5.71	3/4, AVFO1T48F318 AVFO1T48F319 AVFO1T48F320
CC-QV-12	7.50E-06	3.54E-05	1.27E-05	1.000	5.71	3/4, AVFO1T48F318 AVFO1T48F319 AVFO1T48F326
CC-QV-13	7.50E-06	3.54E-05	1.27E-05	1.000	5.71	3/4, AVFO1T48F318 AVFO1T48F320 AVFO1T48F326
CC-QV-14	7.50E-06	3.54E-05	1.27E-05	1.000	5.71	3/4, AVFO1T48F319 AVFO1T48F320 AVFO1T48F326
CBFC1R23S004_1M	9.62E-04	3.36E-05	9.42E-08	1.000	1.03	600-V ALT SUPPLY BRKR FROM XFMR CD FAILS TO CLOSE
BCOR1R42S032A	4.46E-04	3.32E-05	2.00E-07	1.000	1.07	NORMAL CHARGER FAILS DURING OPERATION
CC-QV-2	1.86E-03	3.25E-05	4.71E-08	1.000	1.02	1/4, AVFO1T48F319
CC-QV-3	1.86E-03	3.25E-05	4.71E-08	1.000	1.02	1/4, AVFO1T48F320
MNUNRS_TRNA	3.56E-03	3.15E-05	2.38E-08	1.000	1.01	PUMP E11-C002A MAINTENANCE
CC-QT-25	2.69E-05	3.03E-05	3.04E-06	1.000	2.13	2/4, MVFC1E11F015B MVFC1E11F017B
CC-QT-5	2.69E-05	3.03E-05	3.04E-06	1.000	2.13	2/4, MVFO1E11F027B MVFO1E11F024B
BSSH1R22S005	9.02E-06	2.85E-05	8.51E-06	1.000	4.16	4KV BUS E FAILS TO OPERATE
BSSH1R22S006	9.02E-06	2.85E-05	8.51E-06	1.000	4.16	4KV BUS F FAILS TO OPERATE

Event Name	Probability	Fus Ves	BimBm	Red W	Ach W	Description
MNUNDB_CHRG	7.68E-05	2.61E-05	9.16E-07	1.000	1.34	CHARGER SWAPPING IN PROGRESS
MNUN1S11S007	6.94E-05	2.44E-05	9.49E-07	1.000	1.35	TRANSFORMER 1CD IN MAINTENANCE
CVFO2P41F321	2.87E-04	2.44E-05	2.29E-07	1.000	1.08	PUMP DISCHARGE CHECK VALVE 2P41F321 FAILS TO OPEN
MNUNHS_PUMPC	1.62E-02	2.41E-05	4.01E-09	1.000	1.00	PUMP C001C MAINTENANCE
%FL-LOMCHV	1.00E+00	2.14E-05	5.76E-11	1.000	1.00	FLAG FOR LOSS OF MCR COOLING INITIATING EVENT
CC-VM-21_____I	4.61E-03	2.14E-05	1.25E-08	1.000	1.00	3/3, CHSR1Z41B008B CHOR1Z41B008A CHOR1Z41B008C
CC-IA-24	2.78E-03	2.06E-05	2.00E-08	1.000	1.01	1/2, FNOS1P51B0022
CBXO1R23S004_3T	4.18E-06	1.88E-05	1.22E-05	1.000	5.51	SUPPLY BREAKER TO CONTROL BLDG 600-V MCC 1C TRANSFERS OPEN
CC-OW-3	2.18E-03	1.87E-05	2.32E-08	1.000	1.01	1/4, MVFD1E11F016B
CC-OW-4	2.18E-03	1.87E-05	2.32E-08	1.000	1.01	1/4, MVFD1E11F021B
MCOR1R24S011	7.94E-06	1.72E-05	5.85E-06	1.000	3.17	RX BLDG 600-V MCC 1C FAILS
MCOR1R24S012	7.94E-06	1.72E-05	5.85E-06	1.000	3.17	RX BLDG 600-V MCC 1B FAILS
MCOR1R24S027	7.94E-06	1.72E-05	5.85E-06	1.000	3.17	DG BLDG 600-V MCC 1C FAILS
CBXO1R23S004_3M	4.18E-06	1.67E-05	1.08E-05	1.000	5.00	FEEDER TO ESSENTIAL TRANSFORMER 1R11S042 TRANSFERS OPEN
CBXO1R25S037_26	4.18E-06	1.67E-05	1.08E-05	1.000	5.00	FEEDER BREAKER TRANSFERS OPEN
CC-IA-2	2.24E-03	1.66E-05	2.00E-08	1.000	1.01	1/2, PMOS1P51C008B
DE5	4.23E-02	1.57E-05	9.99E-10	1.000	1.00	EMERG DEP FAILS (ATWS & NO HI PRESS INJECT)
MVXC1E11F004B	1.76E-04	1.55E-05	2.38E-07	1.000	1.09	RHR SUCTION MOV 1E11F004B TRANSFERS CLOSED
BCOR1R42S032B	4.46E-04	1.52E-05	9.16E-08	1.000	1.03	NORMAL CHARGER FAILS DURING OPERATION
COAFWTQCA	2.67E-02	1.51E-05	1.52E-09	1.000	1.00	RECOVERY RULE ADDED FOR FORTE HYBRID CUTSET MODEL
RLFD1R4386G	1.34E-04	1.50E-05	3.02E-07	1.000	1.11	BUS 1G LOCKOUT RELAY 86 FAILS ON DEMAND
AVXC2P41F340	3.89E-05	0.00E+00	0.00E+00	1.000	1.00	AIR-OPERATED VALVE 2P41F340 TRANSFERS CLOSED
BTOR1R42S002A	1.81E-05	0.00E+00	0.00E+00	1.000	1.00	DIESEL BATTERY A FAILS DURING OPERATION
BTOR1R42S002B	1.81E-05	0.00E+00	0.00E+00	1.000	1.00	DIESEL BATTERY B FAILS DURING OPERATION
C2FC1C71P003E	9.62E-04	0.00E+00	0.00E+00	1.000	1.00	LOW VOLTAGE CIRCUIT BREAKER FAILS TO CLOSE
C2FC1C71P003F	9.62E-04	0.00E+00	0.00E+00	1.000	1.00	LOW VOLTAGE CIRCUIT BREAKER FAILS TO CLOSE
CC-HS-3	3.33E-03	0.00E+00	0.00E+00	1.000	1.00	1/4, PMSS1E11C001A
CC-HS-4	3.33E-03	0.00E+00	0.00E+00	1.000	1.00	1/4, PMSS1E11C001C
CC-IS-13	2.69E-05	0.00E+00	0.00E+00	1.000	1.00	2/4, MVFC1P41F310C MVFC1P41F310A
CC-IS-14	8.91E-06	0.00E+00	0.00E+00	1.000	1.00	3/4, MVFC1P41F310D MVFC1P41F310B MVFC1P41F310C
CC-IS-15	8.91E-06	0.00E+00	0.00E+00	1.000	1.00	3/4, MVFC1P41F310D MVFC1P41F310B MVFC1P41F310A
CC-IS-16	8.91E-06	0.00E+00	0.00E+00	1.000	1.00	3/4, MVFC1P41F310D MVFC1P41F310C MVFC1P41F310A
CC-IS-17	8.91E-06	0.00E+00	0.00E+00	1.000	1.00	3/4, MVFC1P41F310B MVFC1P41F310C MVFC1P41F310A
CC-IS-7	2.18E-03	0.00E+00	0.00E+00	1.000	1.00	1/4, MVFC1P41F310A
CC-IS-8	2.69E-05	0.00E+00	0.00E+00	1.000	1.00	2/4, MVFC1P41F310D MVFC1P41F310B
CC-ISSIG-2	1.27E-04	0.00E+00	0.00E+00	1.000	1.00	1/2, RLFD1R43SWETR2
CC-ISSIG-5	1.27E-04	0.00E+00	0.00E+00	1.000	1.00	1/2, RLFD1P41K15A
CC-PS-13	9.43E-07	0.00E+00	0.00E+00	1.000	1.00	3/4, PMOR1P41C001C PMOR1P41C001B PMOR1P41C001A
CC-PS-3	1.54E-04	0.00E+00	0.00E+00	1.000	1.00	1/4, PMOR1P41C001B
CC-PS-4	1.54E-04	0.00E+00	0.00E+00	1.000	1.00	1/4, PMOR1P41C001A
CC-SW-11	2.64E-06	0.00E+00	0.00E+00	1.000	1.00	3/4, PMOS1P41C001A PMOS1P41C001B PMOS1P41C001C
CC-SW-24	2.84E-04	0.00E+00	0.00E+00	1.000	1.00	1/4, CVFO1P41F311A
CC-SW-32	3.50E-07	0.00E+00	0.00E+00	1.000	1.00	4/4, CVFO1P41F311B CVFO1P41F311D CVFO1P41F311A CVFO1P41F311
CC-SW-5	1.16E-05	0.00E+00	0.00E+00	1.000	1.00	2/4, PMOS1P41C001A PMOS1P41C001B
CC-SW-6	1.16E-05	0.00E+00	0.00E+00	1.000	1.00	2/4, PMOS1P41C001A PMOS1P41C001C
CC-SW-9	1.16E-05	0.00E+00	0.00E+00	1.000	1.00	2/4, PMOS1P41C001B PMOS1P41C001D
COCFWTQCA	3.13E-02	0.00E+00	0.00E+00	1.000	1.00	RECOVERY RULE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODE
CPOS1R43C001A	3.29E-03	0.00E+00	0.00E+00	1.000	1.00	AIR COMPRESSOR FAIL TO START
CPOS1R43C001B	3.29E-03	0.00E+00	0.00E+00	1.000	1.00	AIR COMPRESSOR FAIL TO START

Event Name	Probability	Fus Ves	BimBm	Red W	Ach W	Description
CPOS1R43C001C	3.29E-03	0.00E+00	0.00E+00	1.000	1.00	AIR COMPRESSOR FAIL TO START
CPOS1R43C010A	3.29E-03	0.00E+00	0.00E+00	1.000	1.00	AIR COMPRESSOR FAIL TO START
CPOS1R43C010B	3.29E-03	0.00E+00	0.00E+00	1.000	1.00	AIR COMPRESSOR FAIL TO START
DE4	5.02E-02	0.00E+00	0.00E+00	1.000	1.00	EMERG DEP FAILS (MLOCA & HI PRESS INJECT INADEQ)
DE6	3.82E-02	0.00E+00	0.00E+00	1.000	1.00	EMERG DEP FAILS (NO LO PRESS SYSTEMS AVAIL, ELEV. DW TEMP,
FL_DE4COND	1.00E+00	0.00E+00	0.00E+00	1.000	1.00	FLAG FOR CONDITIONS FOR DE4
FUSO1R42S002A	2.21E-05	0.00E+00	0.00E+00	1.000	1.00	FUSE BLOWS SPURIOUSLY
FUSO1R42S002B	2.21E-05	0.00E+00	0.00E+00	1.000	1.00	FUSE BLOWS SPURIOUSLY
MCOR1R24S025	7.94E-06	0.00E+00	0.00E+00	1.000	1.00	600VAC SECTION OF DG BLDG MCC 1A FAILS
MNUNIS_VLVA	1.27E-03	0.00E+00	0.00E+00	1.000	1.00	VALVE MAINTENANCE - F310A
MNUNRPSA	2.64E-03	0.00E+00	0.00E+00	1.000	1.00	MG SET IN MAINTENANCE
MNUNRS_TRNC	3.56E-03	0.00E+00	0.00E+00	1.000	1.00	RHR PUMP E11-C002C MAINTENANCE
MVXC1E11F007B	1.65E-04	0.00E+00	0.00E+00	1.000	1.00	MOTOR-OPERATED VALVE 1E11F007B TRANSFERS CLOSED
MVXC1P41F317A	1.08E-05	0.00E+00	0.00E+00	1.000	1.00	MOTOR-OPERATED VALVE F317A TRANSFER CLOSED
MVXC1P41F317B	1.08E-05	0.00E+00	0.00E+00	1.000	1.00	MOTOR-OPERATED VALVE F317B TRANSFER CLOSED
MVXC1P41F401B	1.08E-05	0.00E+00	0.00E+00	1.000	1.00	MOTOR-OPERATED VALVE F401B TRANSFER CLOSED
MVXC1P41F403A	1.08E-05	0.00E+00	0.00E+00	1.000	1.00	MOTOR-OPERATED VALVE F403A TRANSFER CLOSED
OPHED03	1.01E-03	0.00E+00	0.00E+00	1.000	1.00	OPERATORS FAIL TO REALIGN RPS BUS TO ALTERNATE SUPPLY
OPHED31	2.50E-01	0.00E+00	0.00E+00	1.000	1.00	OPERATOR FAILS TO ALIGN STANDBY STRAINER
PMSS1Y52C001A	2.35E-02	0.00E+00	0.00E+00	1.000	1.00	MOTOR DRIVEN PUMP FAILS TO START
PMSS1Y52C001B	2.35E-02	0.00E+00	0.00E+00	1.000	1.00	PUMP 001 FAILS TO OPERATE GIVEN START SIGNAL
PMSS1Y52C001C	2.35E-02	0.00E+00	0.00E+00	1.000	1.00	MOTOR-DRIVEN PUMP FAIL TO START
PMSS1Y52C101A	2.35E-02	0.00E+00	0.00E+00	1.000	1.00	MOTOR-DRIVEN PUMP FAILS TO START
PMSS1Y52C101B	2.35E-02	0.00E+00	0.00E+00	1.000	1.00	MOTOR-DRIVEN PUMP FAIL TO START
S3PL2P41D003A	1.99E-04	0.00E+00	0.00E+00	1.000	1.00	STRAINER 2P41D003A PLUGS
SORVB	2.00E-03	0.00E+00	0.00E+00	1.000	1.00	ONE SRV FAILS TO RECLOSE GIVEN 5 SRVS OPENED
STPL1E11B	1.49E-04	0.00E+00	0.00E+00	1.000	1.00	RHR PMP B STRAINER PLUGS
SUCCESS	0.00E+00	0.00E+00	0.00E+00	1.000	1.00	LOSP RECOVERY TO REMOVE SUCCESS TERMS ADDED FOR FORTE HYBRI
XROR1S11S007	1.25E-05	0.00E+00	0.00E+00	1.000	1.00	STATION SERVICE TRANSFORMER CD FAILS TO OPERATE

Report Summary:
Filename: C:\CAFTA-W\U1HOLD~1\HATCH1.CUT
Print date: 06/18/1900 4:07 PM
Sorted by Fussel-Vesely

Attachment 4
Top 100 CDF Cutsets
(page 1 of 20)

Cutsets with Descriptions Report

@H1CDFTOP = 1.62E-05

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
1	%LOFW	LOSS OF FEEDWATER		7.10E-01	7.10E-01	4.43E-07
	COB	LOSS OF CONDENSATE GIVEN LOSS OF FEEDWATER		2.34E-01	2.34E-01	
	DEA	EMERG DEP FAILS (CRD AVAIL & NORM DW TEMP)		3.34E-03	3.34E-03	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	MNUNHP_HPCI	HPCI SYSTEM INOP DUE TO MAINTENANCE		3.24E-02	3.24E-02	
	P7SR1E51C001	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO RUN	1.03E-03	2.40E+01	2.47E-02	
	SORVA	ALL SRVS RECLOSE GIVEN 5 SRVS OPENED		9.98E-01	9.98E-01	
2	%LOFW	LOSS OF FEEDWATER		7.10E-01	7.10E-01	3.38E-07
	COB	LOSS OF CONDENSATE GIVEN LOSS OF FEEDWATER		2.34E-01	2.34E-01	
	DEA	EMERG DEP FAILS (CRD AVAIL & NORM DW TEMP)		3.34E-03	3.34E-03	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	P6SR1E41C001	HPCI PUMP/TURBINE FAIL TO RUN	1.03E-03	2.40E+01	2.47E-02	
	P7SR1E51C001	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO RUN	1.03E-03	2.40E+01	2.47E-02	
	SORVA	ALL SRVS RECLOSE GIVEN 5 SRVS OPENED		9.98E-01	9.98E-01	
3	%LOFW	LOSS OF FEEDWATER		7.10E-01	7.10E-01	3.17E-07
	COB	LOSS OF CONDENSATE GIVEN LOSS OF FEEDWATER		2.34E-01	2.34E-01	
	DEA	EMERG DEP FAILS (CRD AVAIL & NORM DW TEMP)		3.34E-03	3.34E-03	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	MNUNHP_RCIC	RCIC SYSTEM INOP DUE TO MAINTENANCE		2.32E-02	2.32E-02	
	P6SR1E41C001	HPCI PUMP/TURBINE FAIL TO RUN	1.03E-03	2.40E+01	2.47E-02	
	SORVA	ALL SRVS RECLOSE GIVEN 5 SRVS OPENED		9.98E-01	9.98E-01	
4	%FL-LODC	FLAG FOR LOSS OF STATION BATTER A DC POWER INITIATING EVENT		1.00E+00	1.00E+00	2.76E-07
	BSSH1R22S016___I	DC SWITCHGEAR S016 FAILS DURING OPERATION	3.76E-07	8.76E+03	3.29E-03	
	DEA	EMERG DEP FAILS (CRD AVAIL & NORM DW TEMP)		3.34E-03	3.34E-03	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	MNUNHP_HPCI	HPCI SYSTEM INOP DUE TO MAINTENANCE		3.24E-02	3.24E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
5	%FL-LODC	FLAG FOR LOSS OF STATION BATTER A DC POWER INITIATING EVENT		1.00E+00	1.00E+00	2.26E-07
	BSSH1R22S016___I	DC SWITCHGEAR S016 FAILS DURING OPERATION	3.76E-07	8.76E+03	3.29E-03	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	MNUNHP_HPCI	HPCI SYSTEM INOP DUE TO MAINTENANCE		3.24E-02	3.24E-02	
	OPHENS_NRESTORED	LP INJECTION REQUIRED BEFORE CHANNEL RESTORED		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	TTUNNS_CHANB	CHANNEL B IN TEST		2.74E-03	2.74E-03	
6	%FL-LODC	FLAG FOR LOSS OF STATION BATTER A DC POWER INITIATING EVENT		1.00E+00	1.00E+00	2.26E-07
	BSSH1R22S016___I	DC SWITCHGEAR S016 FAILS DURING OPERATION	3.76E-07	8.76E+03	3.29E-03	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	MNUNHP_HPCI	HPCI SYSTEM INOP DUE TO MAINTENANCE		3.24E-02	3.24E-02	
	OPHENS_NRESTORED	LP INJECTION REQUIRED BEFORE CHANNEL RESTORED		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	TTUNNS_CHAND	CHANNEL D IN TEST		2.74E-03	2.74E-03	
7	%FL-LODC	FLAG FOR LOSS OF STATION BATTER A DC POWER INITIATING EVENT		1.00E+00	1.00E+00	2.11E-07
	BSSH1R22S016___I	DC SWITCHGEAR S016 FAILS DURING OPERATION	3.76E-07	8.76E+03	3.29E-03	
	DEA	EMERG DEP FAILS (CRD AVAIL & NORM DW TEMP)		3.34E-03	3.34E-03	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	P6SR1E41C001	HPCI PUMP/TURBINE FAIL TO RUN	1.03E-03	2.40E+01	2.47E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
8	%FL-LODC	FLAG FOR LOSS OF STATION BATTER A DC POWER INITIATING EVENT		1.00E+00	1.00E+00	1.73E-07
	BSSH1R22S016___I	DC SWITCHGEAR S016 FAILS DURING OPERATION	3.76E-07	8.76E+03	3.29E-03	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	OPHENS_NRESTORED	LP INJECTION REQUIRED BEFORE CHANNEL RESTORED		1.00E+00	1.00E+00	
	P6SR1E41C001	HPCI PUMP/TURBINE FAIL TO RUN	1.03E-03	2.40E+01	2.47E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	TTUNNS_CHANB	CHANNEL B IN TEST		2.74E-03	2.74E-03	
9	%FL-LODC	FLAG FOR LOSS OF STATION BATTER A DC POWER INITIATING EVENT		1.00E+00	1.00E+00	1.73E-07
	BSSH1R22S016___I	DC SWITCHGEAR S016 FAILS DURING OPERATION	3.76E-07	8.76E+03	3.29E-03	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	OPHENS_NRESTORED	LP INJECTION REQUIRED BEFORE CHANNEL RESTORED		1.00E+00	1.00E+00	
	P6SR1E41C001	HPCI PUMP/TURBINE FAIL TO RUN	1.03E-03	2.40E+01	2.47E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	TTUNNS_CHAND	CHANNEL D IN TEST		2.74E-03	2.74E-03	

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#	Inputs	Description	Rate	Exposure	Event Prob	Probability
10	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	1.71E-07
	CC-DGS-7	3/3, DGLR1R43S001C DGLR1R43S001A DGLR1R43S001B		1.89E-04	1.89E-04	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	
11	%LOFW	LOSS OF FEEDWATER		7.10E-01	7.10E-01	1.36E-07
	COB	LOSS OF CONDENSATE GIVEN LOSS OF FEEDWATER		2.34E-01	2.34E-01	
	DEA	EMERG DEP FAILS (CRD AVAIL & NORM DW TEMP)		3.34E-03	3.34E-03	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	HIRE20	RECOVERY OF HIGH PRESS INJECT (CRD AVAILABLE; 02)		2.00E-01	2.00E-01	
	P6SS1E41C001	HPCI PUMP/TURBINE FAIL TO START	4.26E-02	1.00E+00	4.26E-02	
	P7SS1E51C001	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO START	2.88E-02	1.00E+00	2.88E-02	
	SORVA	ALL SRVS RECLOSE GIVEN 5 SRVS OPENED		9.98E-01	9.98E-01	
12	%ATWSTT	ATWS FOLLOWING TURBINE TRIP EVENT		1.64E+00	1.64E+00	1.34E-07
	FL_IEGATWS	FLAG FOR ATWS EVENTS		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	OSA	OPERATORS FAIL TO INITIATE SLCS		8.22E-03	8.22E-03	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	XXXX1C11_HCUS	COMMON CAUSE FAILURE OF CONTROL RODS TO INSERT OCCURS		1.00E-05	1.00E-05	
13	%FL-LOPSW	FLAG FOR LOSS OF PLANT SERVICE WATER INITIATING EVENT		1.00E+00	1.00E+00	1.20E-07
	AVFC1T46F005	AOV F005 FAILS TO CLOSE	2.00E-03	1.00E+00	2.00E-03	
	CC-PS-15_____I	4/4, PMOR1P41C001C PMOR1P41C001D PMOR1P41C001B PMOR1P41C001A (1 YR)		7.76E-05	7.76E-05	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
14	%FL-LOPSW	FLAG FOR LOSS OF PLANT SERVICE WATER INITIATING EVENT		1.00E+00	1.00E+00	1.20E-07
	AVFC1T48F081	SGTS ISOLATION VALVE F081 FAILS TO CLOSE	2.00E-03	1.00E+00	2.00E-03	
	CC-PS-15_____I	4/4, PMOR1P41C001C PMOR1P41C001D PMOR1P41C001B PMOR1P41C001A (1 YR)		7.76E-05	7.76E-05	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
15	%FL-LOPSW	FLAG FOR LOSS OF PLANT SERVICE WATER INITIATING EVENT		1.00E+00	1.00E+00	1.20E-07
	AVFO1T48F082	VENT VALVE F082 FAILS TO OPEN	2.00E-03	1.00E+00	2.00E-03	
	CC-PS-15_____I	4/4, PMOR1P41C001C PMOR1P41C001D PMOR1P41C001B PMOR1P41C001A (1 YR)		7.76E-05	7.76E-05	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
16	%LOFW	LOSS OF FEEDWATER		7.10E-01	7.10E-01	1.17E-07
	COB	LOSS OF CONDENSATE GIVEN LOSS OF FEEDWATER		2.34E-01	2.34E-01	
	DEA	EMERG DEP FAILS (CRD AVAIL & NORM DW TEMP)		3.34E-03	3.34E-03	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	HIRE20	RECOVERY OF HIGH PRESS INJECT (CRD AVAILABLE; 02)		2.00E-01	2.00E-01	
	P6SS1E41C001	HPCI PUMP/TURBINE FAIL TO START	4.26E-02	1.00E+00	4.26E-02	
	P7SR1E51C001	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO RUN	1.03E-03	2.40E+01	2.47E-02	
	SORVA	ALL SRVS RECLOSE GIVEN 5 SRVS OPENED		9.98E-01	9.98E-01	
17	%LOFW	LOSS OF FEEDWATER		7.10E-01	7.10E-01	1.09E-07
	COB	LOSS OF CONDENSATE GIVEN LOSS OF FEEDWATER		2.34E-01	2.34E-01	
	DEA	EMERG DEP FAILS (CRD AVAIL & NORM DW TEMP)		3.34E-03	3.34E-03	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	HIRE20	RECOVERY OF HIGH PRESS INJECT (CRD AVAILABLE; 02)		2.00E-01	2.00E-01	
	MNUNHP_RCIC	RCIC SYSTEM INOP DUE TO MAINTENANCE		2.32E-02	2.32E-02	
	P6SS1E41C001	HPCI PUMP/TURBINE FAIL TO START	4.26E-02	1.00E+00	4.26E-02	
	SORVA	ALL SRVS RECLOSE GIVEN 5 SRVS OPENED		9.98E-01	9.98E-01	
18	%LOFW	LOSS OF FEEDWATER		7.10E-01	7.10E-01	1.03E-07
	COB	LOSS OF CONDENSATE GIVEN LOSS OF FEEDWATER		2.34E-01	2.34E-01	
	DEA	EMERG DEP FAILS (CRD AVAIL & NORM DW TEMP)		3.34E-03	3.34E-03	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	HIRE20	RECOVERY OF HIGH PRESS INJECT (CRD AVAILABLE; 02)		2.00E-01	2.00E-01	
	MNUNHP_HPCI	HPCI SYSTEM INOP DUE TO MAINTENANCE		3.24E-02	3.24E-02	
	P7SS1E51C001	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO START	2.88E-02	1.00E+00	2.88E-02	
	SORVA	ALL SRVS RECLOSE GIVEN 5 SRVS OPENED		9.98E-01	9.98E-01	
19	%FL-BUSC	FLAG FOR LOSS OF 600-V BUS C INITIATING EVENT		1.00E+00	1.00E+00	9.83E-08
	BSSH1R23S003___I	600-V BUS C FAILS	3.76E-07	8.76E+03	3.29E-03	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	MNUNHS_LOOP2	LOOP 2 MAINTENANCE - RHRSW		6.83E-03	6.83E-03	
	SORVX	ALL SRVs REMAIN CLOSED GIVEN SUCCESSFUL BYPASS VALVE OPERATION		1.00E+00	1.00E+00	
	XRFD1S11S004	SUT C LOAD SHEDS FOLLOWING GENERATOR TRIP	5.61E-03	1.00E+00	5.61E-03	
20	%FL-BUSC	FLAG FOR LOSS OF 600-V BUS C INITIATING EVENT		1.00E+00	1.00E+00	9.41E-08
	BSSH1R23S003___I	600-V BUS C FAILS	3.76E-07	8.76E+03	3.29E-03	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	MNUNBD	BUS D IN MAINTENANCE		3.67E-05	3.67E-05	
	SORVX	ALL SRVs REMAIN CLOSED GIVEN SUCCESSFUL BYPASS VALVE OPERATION		1.00E+00	1.00E+00	
21	%FL-LODC	FLAG FOR LOSS OF STATION BATTER A DC POWER INITIATING EVENT		1.00E+00	1.00E+00	9.36E-08
	BSSH1R22S016___I	DC SWITCHGEAR S016 FAILS DURING OPERATION	3.76E-07	8.76E+03	3.29E-03	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	MNUNBD	BUS D IN MAINTENANCE		3.67E-05	3.67E-05	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
22	%IORV	INADVERTENTLY OPENED SRV		1.80E-02	1.80E-02	9.00E-08
	DE4	EMERG DEP FAILS (MLOCA & HI PRESS INJECT INADEQ)		5.02E-02	5.02E-02	
	FL_DE4COND	FLAG FOR CONDITIONS FOR DE4		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_NODWC	FLAG FR DRYWELL COLING BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	OPHENOACT1	OPERATORS FAIL TO TAKE ACTION GIVEN LOCA SIGNAL		2.34E-03	2.34E-03	
	P6SS1E41C001	HPCI PUMP/TURBINE FAIL TO START	4.26E-02	1.00E+00	4.26E-02	
23	%FL-DISCH	FLAG FOR PSW DISCHARGE FLOW PATH FAILURE INITIATING EVENT		1.00E+00	1.00E+00	8.66E-08
	DE2	EMERG DEP FAILS (ELEV DW TEMP)		1.78E-02	1.78E-02	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_NODWC	FLAG FR DRYWELL COLING BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	M4XC1P41F303A__I	MOTOR OPERATED VALVE F303A TRANSFERS CLOSED	2.90E-08	8.76E+03	2.54E-04	
	P7SR1E51C001	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO RUN	1.03E-03	2.40E+01	2.47E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
24	%VSEQ	V SEQUENCE		8.62E-08	8.62E-08	8.62E-08
25	%FL-DISCH	FLAG FOR PSW DISCHARGE FLOW PATH FAILURE INITIATING EVENT		1.00E+00	1.00E+00	8.13E-08
	DE2	EMERG DEP FAILS (ELEV DW TEMP)		1.78E-02	1.78E-02	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_NODWC	FLAG FR DRYWELL COLING BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	M4XC1P41F303A__I	MOTOR OPERATED VALVE F303A TRANSFERS CLOSED	2.90E-08	8.76E+03	2.54E-04	
	MNUNHP_RCIC	RCIC SYSTEM INOP DUE TO MAINTENANCE		2.32E-02	2.32E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
26	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	8.09E-08
	DEB	EMERG DEP FAILS (NO CRD)		4.62E-03	4.62E-03	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_HPI-B-F	HPCI AND RCIC NOT AVAILABLE WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_NOCRD	FLAG FOR CRD BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	MNUNHP_HPCI	HPCI SYSTEM INOP DUE TO MAINTENANCE		3.24E-02	3.24E-02	
	P7SR1E51C001	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO RUN	1.03E-03	2.40E+01	2.47E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
27	%ATWSMS	ATWS FOLLOWING MSIV CLOSURE/LOSS OF CONDENSER VACUUM EVENT		9.70E-01	9.70E-01	7.93E-08
	FL_IEGATWS	FLAG FOR ATWS EVENTS		1.00E+00	1.00E+00	
	OSA	OPERATORS FAIL TO INITIATE SLCS		8.22E-03	8.22E-03	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	XXXX1C11_HCUS	COMMON CAUSE FAILURE OF CONTROL RODS TO INSERT OCCURS		1.00E-05	1.00E-05	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
28	%LOFW	LOSS OF FEEDWATER		7.10E-01	7.10E-01	7.89E-08
	COB	LOSS OF CONDENSATE GIVEN LOSS OF FEEDWATER		2.34E-01	2.34E-01	
	DEA	EMERG DEP FAILS (CRD AVAIL & NORM DW TEMP)		3.34E-03	3.34E-03	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	HIRE20	RECOVERY OF HIGH PRESS INJECT (CRD AVAILABLE; 02)		2.00E-01	2.00E-01	
	P6SR1E41C001	HPCI PUMP/TURBINE FAIL TO RUN	1.03E-03	2.40E+01	2.47E-02	
	P7SS1E51C001	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO START	2.88E-02	1.00E+00	2.88E-02	
	SORVA	ALL SRVS RECLOSE GIVEN 5 SRVS OPENED		9.98E-01	9.98E-01	
29	%FL-LODC	FLAG FOR LOSS OF STATION BATTER A DC POWER INITIATING EVENT		1.00E+00	1.00E+00	7.27E-08
	BSSH1R22S016___I	DC SWITCHGEAR S016 FAILS DURING OPERATION	3.76E-07	8.76E+03	3.29E-03	
	DEA	EMERG DEP FAILS (CRD AVAIL & NORM DW TEMP)		3.34E-03	3.34E-03	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	HIRE20	RECOVERY OF HIGH PRESS INJECT (CRD AVAILABLE; 02)		2.00E-01	2.00E-01	
	P6SS1E41C001	HPCI PUMP/TURBINE FAIL TO START	4.26E-02	1.00E+00	4.26E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
30	%LOFW	LOSS OF FEEDWATER		7.10E-01	7.10E-01	7.13E-08
	COB	LOSS OF CONDENSATE GIVEN LOSS OF FEEDWATER		2.34E-01	2.34E-01	
	DEC	EMERG DEP FAILS (NO CRD, SORV)		5.04E-03	5.04E-03	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	P6SS1E41C001	HPCI PUMP/TURBINE FAIL TO START	4.26E-02	1.00E+00	4.26E-02	
	SORVB	ONE SRV FAILS TO RECLOSE GIVEN 5 SRVS OPENED		2.00E-03	2.00E-03	
31	%IORV	INADVERTENTLY OPENED SRV		1.80E-02	1.80E-02	6.84E-08
	DE4	EMERG DEP FAILS (MLOCA & HI PRESS INJECT INADEQ)		5.02E-02	5.02E-02	
	FL_DE4COND	FLAG FOR CONDITIONS FOR DE4		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_NODWC	FLAG FR DRYWELL COLING BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	MNUNHP_HPCI	HPCI SYSTEM INOP DUE TO MAINTENANCE		3.24E-02	3.24E-02	
	OPHENOACT1	OPERATORS FAIL TO TAKE ACTION GIVEN LOCA SIGNAL		2.34E-03	2.34E-03	
32	%FL-BUSC	FLAG FOR LOSS OF 600-V BUS C INITIATING EVENT		1.00E+00	1.00E+00	6.82E-08
	BSSH1R23S003___I	600-V BUS C FAILS	3.76E-07	8.76E+03	3.29E-03	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	MNUNRS_DIVII	RHR LOOP 2.MAINT OR MISALIGNMENT OF VALVES IN LOOP 2 FLOW PATH		4.74E-03	4.74E-03	
	SORVX	ALL SRVs REMAIN CLOSED GIVEN SUCCESSFUL BYPASS VALVE OPERATION		1.00E+00	1.00E+00	
	XRFD1S11S004	SUT C LOAD SHEDS FOLLOWING GENERATOR TRIP	5.61E-03	1.00E+00	5.61E-03	
33	%MLOCA	MEDIUM BREAK LOCA INSIDE THE DRYWELL		7.59E-04	7.59E-04	6.78E-08
	DE4	EMERG DEP FAILS (MLOCA & HI PRESS INJECT INADEQ)		5.02E-02	5.02E-02	
	FL_DE4COND	FLAG FOR CONDITIONS FOR DE4		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	OPHEFW6	OPERATORS FAIL TO USE CONDENSATE FOR INJECITON GIVEN MEDIUM LOCA		4.18E-02	4.18E-02	
	P6SS1E41C001	HPCI PUMP/TURBINE FAIL TO START	4.26E-02	1.00E+00	4.26E-02	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
34	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	6.20E-08
	DEB	EMERG DEP FAILS (NO CRD)		4.62E-03	4.62E-03	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_HPI-B-F	HPCI AND RCIC NOT AVAILABLE WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_NOCRD	FLAG FOR CRD BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	HIRE50	RECOVERY OF HIGH PRESS INJECT (CRD UNAVAILABLE; 0.5)		5.00E-01	5.00E-01	
	P6SS1E41C001	HPCI PUMP/TURBINE FAIL TO START	4.26E-02	1.00E+00	4.26E-02	
	P7SS1E51C001	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO START	2.88E-02	1.00E+00	2.88E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
35	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	6.18E-08
	DEB	EMERG DEP FAILS (NO CRD)		4.62E-03	4.62E-03	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_HPI-B-F	HPCI AND RCIC NOT AVAILABLE WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_NOCRD	FLAG FOR CRD BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	P6SR1E41C001	HPCI PUMP/TURBINE FAIL TO RUN	1.03E-03	2.40E+01	2.47E-02	
	P7SR1E51C001	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO RUN	1.03E-03	2.40E+01	2.47E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
36	%FL-LOPSW	FLAG FOR LOSS OF PLANT SERVICE WATER INITIATING EVENT		1.00E+00	1.00E+00	6.08E-08
	CC-PS-15_____I	4/4, PMOR1P41C001C PMOR1P41C001D PMOR1P41C001B PMOR1P41C001A (1 YR)		7.76E-05	7.76E-05	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	VOPA	OPERATOR FAILS TO TRIP UNNEEDED PUMPS ON LOSS OF ROOM COOLING		1.01E-03	1.01E-03	
37	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	5.97E-08
	CC-DGS-42	3/3, CBFC1R22S005_5 CBFC1R22S006_6 CBFC1R22S007_6		6.60E-05	6.60E-05	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	
38	%FL-LODC	FLAG FOR LOSS OF STATION BATTER A DC POWER INITIATING EVENT		1.00E+00	1.00E+00	5.96E-08
	BSSH1R22S016___I	DC SWITCHGEAR S016 FAILS DURING OPERATION	3.76E-07	8.76E+03	3.29E-03	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	HIRE20	RECOVERY OF HIGH PRESS INJECT (CRD AVAILABLE; 02)		2.00E-01	2.00E-01	
	OPHENS_NRESTORED	LP INJECTION REQUIRED BEFORE CHANNEL RESTORED		1.00E+00	1.00E+00	
	P6SS1E41C001	HPCI PUMP/TURBINE FAIL TO START	4.26E-02	1.00E+00	4.26E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	TTUNNS_CHANB	CHANNEL B IN TEST		2.74E-03	2.74E-03	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
39	%FL-LODC	FLAG FOR LOSS OF STATION BATTER A DC POWER INITIATING EVENT		1.00E+00	1.00E+00	5.96E-08
	BSSH1R22S016___I	DC SWITCHGEAR S016 FAILS DURING OPERATION	3.76E-07	8.76E+03	3.29E-03	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	HIRE20	RECOVERY OF HIGH PRESS INJECT (CRD AVAILABLE; 02)		2.00E-01	2.00E-01	
	OPHENS_NRESTORED	LP INJECTION REQUIRED BEFORE CHANNEL RESTORED		1.00E+00	1.00E+00	
	P6SS1E41C001	HPCI PUMP/TURBINE FAIL TO START	4.26E-02	1.00E+00	4.26E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	TTUNNS_CHAND	CHANNEL D IN TEST		2.74E-03	2.74E-03	
40	%ATWSFW	ATWS FOLLOWING LOSS OF FEEDWATER EVENT		7.10E-01	7.10E-01	5.81E-08
	FL_IEGATWS	FLAG FOR ATWS EVENTS		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	OSA	OPERATORS FAIL TO INITIATE SLCS		8.22E-03	8.22E-03	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	XXXX1C11_HCUS	COMMON CAUSE FAILURE OF CONTROL RODS TO INSERT OCCURS		1.00E-05	1.00E-05	
41	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	5.80E-08
	DEB	EMERG DEP FAILS (NO CRD)		4.62E-03	4.62E-03	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_HPI-B-F	HPCI AND RCIC NOT AVAILABLE WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_NOCRD	FLAG FOR CRD BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	MNUNHP_RCIC	RCIC SYSTEM INOP DUE TO MAINTENANCE		2.32E-02	2.32E-02	
	P6SR1E41C001	HPCI PUMP/TURBINE FAIL TO RUN	1.03E-03	2.40E+01	2.47E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
42	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	5.79E-08
	CC-DGS-28	3/3, DGSS1R43S001A DGSS1R43S001B DGSS1R43S001C		6.40E-05	6.40E-05	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	
43	%MSIVC	MSIV CLOSURE INITIATING EVENT		7.50E-01	7.50E-01	5.70E-08
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	OLA	OPERATORS FAIL TO ALIGN AVAILABLE SYSTEM S FOR DECAY HEAT REMOVAL		2.43E-05	2.43E-05	
	OPHEQV1	OP FAILS TO INITIATE VENT GIVEN FAILURE TO PROVIDE LONG-TERM HEAT REMOVAL		1.00E-01	1.00E-01	
	QRA	DECAY HEAT REMOVAL NOT RECOVERED BEFORE CONTAINMENT OR ECCS FAILS		1.00E-01	1.00E-01	
	RPB	RETURN TO POWER OP: GIVEN MSIVs INITIALLY CLOSED		3.14E-01	3.14E-01	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
44	%LOFW	LOSS OF FEEDWATER		7.10E-01	7.10E-01	5.42E-08
	COB	LOSS OF CONDENSATE GIVEN LOSS OF FEEDWATER		2.34E-01	2.34E-01	
	DEC	EMERG DEP FAILS (NO CRD, SORV)		5.04E-03	5.04E-03	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	MNUNHP_HPCI	HPCI SYSTEM INOP DUE TO MAINTENANCE		3.24E-02	3.24E-02	
	SORVB	ONE SRV FAILS TO RECLOSE GIVEN 5 SRVS OPENED		2.00E-03	2.00E-03	
45	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	5.32E-08
	DEB	EMERG DEP FAILS (NO CRD)		4.62E-03	4.62E-03	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_HPI-B-F	HPCI AND RCIC NOT AVAILABLE WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_NOCRD	FLAG FOR CRD BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	HIRE50	RECOVERY OF HIGH PRESS INJECT (CRD UNAVAILABLE; 0.5)		5.00E-01	5.00E-01	
	P6SS1E41C001	HPCI PUMP/TURBINE FAIL TO START	4.26E-02	1.00E+00	4.26E-02	
	P7SR1E51C001	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO RUN	1.03E-03	2.40E+01	2.47E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
46	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	5.32E-08
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	OLA	OPERATORS FAIL TO ALIGN AVAILABLE SYSTEM S FOR DECAY HEAT REMOVAL		2.43E-05	2.43E-05	
	OPHEQV1	OP FAILS TO INITIATE VENT GIVEN FAILURE TO PROVIDE LONG-TERM HEAT REMOVAL		1.00E-01	1.00E-01	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
47	%IORV	INADVERTENTLY OPENED SRV		1.80E-02	1.80E-02	5.22E-08
	DE4	EMERG DEP FAILS (MLOCA & HI PRESS INJECT INADEQ)		5.02E-02	5.02E-02	
	FL_DE4COND	FLAG FOR CONDITIONS FOR DE4		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_NODWC	FLAG FR DRYWELL COLING BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	OPHENOACT1	OPERATORS FAIL TO TAKE ACTION GIVEN LOCA SIGNAL		2.34E-03	2.34E-03	
	P6SR1E41C001	HPCI PUMP/TURBINE FAIL TO RUN	1.03E-03	2.40E+01	2.47E-02	
48	%MLOCA	MEDIUM BREAK LOCA INSIDE THE DRYWELL		7.59E-04	7.59E-04	5.15E-08
	DE4	EMERG DEP FAILS (MLOCA & HI PRESS INJECT INADEQ)		5.02E-02	5.02E-02	
	FL_DE4COND	FLAG FOR CONDITIONS FOR DE4		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	MNUNHP_HPCI	HPCI SYSTEM INOP DUE TO MAINTENANCE		3.24E-02	3.24E-02	
	OPHEFW6	OPERATORS FAIL TO USE CONDENSATE FOR INJECITON GIVEN MEDIUM LOCA		4.18E-02	4.18E-02	

Attachment 4
Top 100 CDF Cutsets
Cutsets with Descriptions Report
@H1CDFTOP = 1.62E-05

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
49	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	5.00E-08
	DEB	EMERG DEP FAILS (NO CRD)		4.62E-03	4.62E-03	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_HPI-B-F	HPCI AND RCIC NOT AVAILABLE WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_NOCRD	FLAG FOR CRD BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	HIRE50	RECOVERY OF HIGH PRESS INJECT (CRD UNAVAILABLE; 0.5)		5.00E-01	5.00E-01	
	MNUNHP_RCIC	RCIC SYSTEM INOP DUE TO MAINTENANCE		2.32E-02	2.32E-02	
	P6SS1E41C001	HPCI PUMP/TURBINE FAIL TO START	4.26E-02	1.00E+00	4.26E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
50	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	4.71E-08
	DEB	EMERG DEP FAILS (NO CRD)		4.62E-03	4.62E-03	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_HPI-B-F	HPCI AND RCIC NOT AVAILABLE WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_NOCRD	FLAG FOR CRD BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	HIRE50	RECOVERY OF HIGH PRESS INJECT (CRD UNAVAILABLE; 0.5)		5.00E-01	5.00E-01	
	MNUNHP_HPCI	HPCI SYSTEM INOP DUE TO MAINTENANCE		3.24E-02	3.24E-02	
	P7SS1E51C001	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO START	2.88E-02	1.00E+00	2.88E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
51	%LOFW	LOSS OF FEEDWATER		7.10E-01	7.10E-01	4.64E-08
	COB	LOSS OF CONDENSATE GIVEN LOSS OF FEEDWATER		2.34E-01	2.34E-01	
	DE2	EMERG DEP FAILS (ELEV DW TEMP)		1.78E-02	1.78E-02	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_NODWC	FLAG FR DRYWELL COLING BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	MNUNHP_HPCI	HPCI SYSTEM INOP DUE TO MAINTENANCE		3.24E-02	3.24E-02	
	OPHEL1D	OPERATORS FAIL TO START SYSTEM AFTER LOCA SIGNAL		1.97E-02	1.97E-02	
	P7SR1E51C001	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO RUN	1.03E-03	2.40E+01	2.47E-02	
	SORVA	ALL SRVS RECLOSE GIVEN 5 SRVS OPENED		9.98E-01	9.98E-01	
52	%FL-LOMCHV	FLAG FOR LOSS OF MCR COOLING INITIATING EVENT		1.00E+00	1.00E+00	4.44E-08
	CC-VM-21_____I	3/3, CHSR1Z41B008B CHOR1Z41B008A CHOR1Z41B008C		4.61E-03	4.61E-03	
	DE4	EMERG DEP FAILS (MLOCA & HI PRESS INJECT INADEQ)		5.02E-02	5.02E-02	
	FL_DE4COND	FLAG FOR CONDITIONS FOR DE4		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	OPHEKMCR2	OPERATORS FAIL TO INITIATE PURGE MODE OF MCR COOLING		1.00E-02	1.00E-02	
	P7SR1E51C001	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO RUN	1.03E-03	2.40E+01	2.47E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
53	%FL-DISCH	FLAG FOR PSW DISCHARGE FLOW PATH FAILURE INITIATING EVENT		1.00E+00	1.00E+00	4.35E-08
	DE4	EMERG DEP FAILS (MLOCA & HI PRESS INJECT INADEQ)		5.02E-02	5.02E-02	
	FL_DE4COND	FLAG FOR CONDITIONS FOR DE4		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_NODWC	FLAG FR DRYWELL COLING BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	M4XC1P41F303A__I	MOTOR OPERATED VALVE F303A TRANSFERS CLOSED	2.90E-08	8.76E+03	2.54E-04	
	SORV1	ONE SRV FAILS TO RECLOSE		4.38E-03	4.38E-03	
54	%FL-LOMCHV	FLAG FOR LOSS OF MCR COOLING INITIATING EVENT		1.00E+00	1.00E+00	4.16E-08
	CC-VM-21_____I	3/3, CHSR1Z41B008B CHOR1Z41B008A CHOR1Z41B008C		4.61E-03	4.61E-03	
	DE4	EMERG DEP FAILS (MLOCA & HI PRESS INJECT INADEQ)		5.02E-02	5.02E-02	
	FL_DE4COND	FLAG FOR CONDITIONS FOR DE4		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	MNUNHP_RCIC	RCIC SYSTEM INOP DUE TO MAINTENANCE		2.32E-02	2.32E-02	
	OPHEKMCR2	OPERATORS FAIL TO INITIATE PURGE MODE OF MCR COOLING		1.00E-02	1.00E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
55	%LOFW	LOSS OF FEEDWATER		7.10E-01	7.10E-01	4.14E-08
	COB	LOSS OF CONDENSATE GIVEN LOSS OF FEEDWATER		2.34E-01	2.34E-01	
	DEC	EMERG DEP FAILS (NO CRD, SORV)		5.04E-03	5.04E-03	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	P6SR1E41C001	HPCI PUMP/TURBINE FAIL TO RUN	1.03E-03	2.40E+01	2.47E-02	
	SORVB	ONE SRV FAILS TO RECLOSE GIVEN 5 SRVS OPENED		2.00E-03	2.00E-03	
56	%LOFW	LOSS OF FEEDWATER		7.10E-01	7.10E-01	4.12E-08
	COB	LOSS OF CONDENSATE GIVEN LOSS OF FEEDWATER		2.34E-01	2.34E-01	
	DEA	EMERG DEP FAILS (CRD AVAIL & NORM DW TEMP)		3.34E-03	3.34E-03	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	MNUNHP_HPCI	HPCI SYSTEM INOP DUE TO MAINTENANCE		3.24E-02	3.24E-02	
	MVF01E51F013	MOTOR OPERATED VALVE 1E51-F013 FAILS TO OPEN	2.30E-03	1.00E+00	2.30E-03	
	SORVA	ALL SRVS RECLOSE GIVEN 5 SRVS OPENED		9.98E-01	9.98E-01	
57	%LOFW	LOSS OF FEEDWATER		7.10E-01	7.10E-01	4.12E-08
	COB	LOSS OF CONDENSATE GIVEN LOSS OF FEEDWATER		2.34E-01	2.34E-01	
	DEA	EMERG DEP FAILS (CRD AVAIL & NORM DW TEMP)		3.34E-03	3.34E-03	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	MNUNHP_HPCI	HPCI SYSTEM INOP DUE TO MAINTENANCE		3.24E-02	3.24E-02	
	MVF01E51F045	STEAM SUPPLY VALVE 1E51-F045 FAILS TO OPEN	2.30E-03	1.00E+00	2.30E-03	
	SORVA	ALL SRVS RECLOSE GIVEN 5 SRVS OPENED		9.98E-01	9.98E-01	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
58	%LOFW	LOSS OF FEEDWATER		7.10E-01	7.10E-01	4.12E-08
	COB	LOSS OF CONDENSATE GIVEN LOSS OF FEEDWATER		2.34E-01	2.34E-01	
	DEA	EMERG DEP FAILS (CRD AVAIL & NORM DW TEMP)		3.34E-03	3.34E-03	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	MNUNHP_HPCI	HPCI SYSTEM INOP DUE TO MAINTENANCE		3.24E-02	3.24E-02	
	MVFO1E51F046	LUBE OIL COOLING WATER VALVE FAILS TO OPEN	2.30E-03	1.00E+00	2.30E-03	
	SORVA	ALL SRVS RECLOSE GIVEN 5 SRVS OPENED		9.98E-01	9.98E-01	
59	%MLOCA	MEDIUM BREAK LOCA INSIDE THE DRYWELL		7.59E-04	7.59E-04	3.94E-08
	DE4	EMERG DEP FAILS (MLOCA & HI PRESS INJECT INADEQ)		5.02E-02	5.02E-02	
	FL_DE4COND	FLAG FOR CONDITIONS FOR DE4		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	OPHEFW6	OPERATORS FAIL TO USE CONDENSATE FOR INJECITON GIVEN MEDIUM LOCA		4.18E-02	4.18E-02	
	P6SR1E41C001	HPCI PUMP/TURBINE FAIL TO RUN	1.03E-03	2.40E+01	2.47E-02	
60	%LOFW	LOSS OF FEEDWATER		7.10E-01	7.10E-01	3.78E-08
	COB	LOSS OF CONDENSATE GIVEN LOSS OF FEEDWATER		2.34E-01	2.34E-01	
	DE2	EMERG DEP FAILS (ELEV DW TEMP)		1.78E-02	1.78E-02	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_NODWC	FLAG FR DRYWELL COLING BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	MNUNHP_HPCI	HPCI SYSTEM INOP DUE TO MAINTENANCE		3.24E-02	3.24E-02	
	OPHERDWC1	OPERATORS FAIL TO RESTORE DRYWELL COOLING		1.60E-02	1.60E-02	
	P7SR1E51C001	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO RUN	1.03E-03	2.40E+01	2.47E-02	
	SORVA	ALL SRVS RECLOSE GIVEN 5 SRVS OPENED		9.98E-01	9.98E-01	
61	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	3.67E-08
	CC-DGS-21	3/3, DG1R1R43S001A DG1R1R43S001B DG1R1R43S001C		4.06E-05	4.06E-05	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
62	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	3.60E-08
	DEB	EMERG DEP FAILS (NO CRD)		4.62E-03	4.62E-03	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_HPI-B-F	HPCI AND RCIC NOT AVAILABLE WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_NOCRD	FLAG FOR CRD BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	HIRE50	RECOVERY OF HIGH PRESS INJECT (CRD UNAVAILABLE; 0.5)		5.00E-01	5.00E-01	
	P6SR1E41C001	HPCI PUMP/TURBINE FAIL TO RUN	1.03E-03	2.40E+01	2.47E-02	
	P7SS1E51C001	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO START	2.88E-02	1.00E+00	2.88E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
63	%TTRIP	TURBINE TRIP EVENT		1.64E+00	1.64E+00	3.59E-08
	DE4	EMERG DEP FAILS (MLOCA & HI PRESS INJECT INADEQ)		5.02E-02	5.02E-02	
	FL_DE4COND	FLAG FOR CONDITIONS FOR DE4		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_NODWC	FLAG FR DRYWELL COLING BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	OPHENOACT1	OPERATORS FAIL TO TAKE ACTION GIVEN LOCA SIGNAL		2.34E-03	2.34E-03	
	P6SS1E41C001	HPCI PUMP/TURBINE FAIL TO START	4.26E-02	1.00E+00	4.26E-02	
	SORV1	ONE SRV FAILS TO RECLOSE		4.38E-03	4.38E-03	
64	%FL-LOMCHV	FLAG FOR LOSS OF MCR COOLING INITIATING EVENT		1.00E+00	1.00E+00	3.57E-08
	CC-VM-21_____I	3/3, CHSR1Z41B008B CHOR1Z41B008A CHOR1Z41B008C		4.61E-03	4.61E-03	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	KRSDP3	TRANSFER OF CONTROL TO REMOTE S/D PANEL FAILS		1.00E-03	1.00E-03	
	OPHEKMCR2	OPERATORS FAIL TO INITIATE PURGE MODE OF MCR COOLING		1.00E-02	1.00E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
65	%LOFW	LOSS OF FEEDWATER		7.10E-01	7.10E-01	3.55E-08
	COB	LOSS OF CONDENSATE GIVEN LOSS OF FEEDWATER		2.34E-01	2.34E-01	
	DE2	EMERG DEP FAILS (ELEV DW TEMP)		1.78E-02	1.78E-02	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_NODWC	FLAG FR DRYWELL COLING BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	OPHEL1D	OPERATORS FAIL TO START SYSTEM AFTER LOCA SIGNAL		1.97E-02	1.97E-02	
	P6SR1E41C001	HPCI PUMP/TURBINE FAIL TO RUN	1.03E-03	2.40E+01	2.47E-02	
	P7SR1E51C001	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO RUN	1.03E-03	2.40E+01	2.47E-02	
	SORVA	ALL SRVS RECLOSE GIVEN 5 SRVS OPENED		9.98E-01	9.98E-01	
66	%FL-LODC	FLAG FOR LOSS OF STATION BATTER A DC POWER INITIATING EVENT		1.00E+00	1.00E+00	3.49E-08
	AVFC1T46F005	AOV F005 FAILS TO CLOSE	2.00E-03	1.00E+00	2.00E-03	
	BSSH1R22S016___I	DC SWITCHGEAR S016 FAILS DURING OPERATION	3.76E-07	8.76E+03	3.29E-03	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	MNUNHS_LOOP2	LOOP 2 MAINTENANCE - RHRSW		6.83E-03	6.83E-03	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
67	%FL-LODC	FLAG FOR LOSS OF STATION BATTER A DC POWER INITIATING EVENT		1.00E+00	1.00E+00	3.49E-08
	AVFC1T48F081	SGTS ISOLATION VALVE F081 FAILS TO CLOSE	2.00E-03	1.00E+00	2.00E-03	
	BSSH1R22S016___I	DC SWITCHGEAR S016 FAILS DURING OPERATION	3.76E-07	8.76E+03	3.29E-03	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	MNUNHS_LOOP2	LOOP 2 MAINTENANCE - RHRSW		6.83E-03	6.83E-03	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
68	%FL-LODC	FLAG FOR LOSS OF STATION BATTER A DC POWER INITIATING EVENT		1.00E+00	1.00E+00	3.49E-08
	AVFO1T48F082	VENT VALVE F082 FAILS TO OPEN	2.00E-03	1.00E+00	2.00E-03	
	BSSH1R22S016___I	DC SWITCHGEAR S016 FAILS DURING OPERATION	3.76E-07	8.76E+03	3.29E-03	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	MNUNHS_LOOP2	LOOP 2 MAINTENANCE - RHRSW		6.83E-03	6.83E-03	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
69	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	3.46E-08
	CC-DGS-1	1/3, DGLR1R43S001C		3.18E-02	3.18E-02	
	CC-DGS-2	1/3, DGLR1R43S001A		3.18E-02	3.18E-02	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	UOL24	LOCA SIGNAL ON OPPOSITE UNIT, LOSP FOR 24 HOURS		3.78E-02	3.78E-02	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	
70	%FL-INTAKE	FLAG FOR INITIATING EVENT CAUSED BY LOSS OF PSW DUE TO INTAKE PLUGGING		1.00E+00	1.00E+00	3.41E-08
	DE2	EMERG DEP FAILS (ELEV DW TEMP)		1.78E-02	1.78E-02	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_NODWC	FLAG FR DRYWELL COLING BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	INTAKEPLUG_____I	PSW INTAKE PLUGGING		1.00E-04	1.00E-04	
	P7SR1E51C001	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO RUN	1.03E-03	2.40E+01	2.47E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
71	%IORV	INADVERTENTLY OPENED SRV		1.80E-02	1.80E-02	3.39E-08
	DEC	EMERG DEP FAILS (NO CRD, SORV)		5.04E-03	5.04E-03	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	NBA	NORM BUS FAST XFER (INCL SPUR XFER OF EMERG BUS TO SUT C)		8.76E-03	8.76E-03	
	P6SS1E41C001	HPCI PUMP/TURBINE FAIL TO START	4.26E-02	1.00E+00	4.26E-02	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
72	%LOFW	LOSS OF FEEDWATER		7.10E-01	7.10E-01	3.33E-08
	COB	LOSS OF CONDENSATE GIVEN LOSS OF FEEDWATER		2.34E-01	2.34E-01	
	DE2	EMERG DEP FAILS (ELEV DW TEMP)		1.78E-02	1.78E-02	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_NODWC	FLAG FR DRYWELL COLING BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	MNUNHP_RCIC	RCIC SYSTEM INOP DUE TO MAINTENANCE		2.32E-02	2.32E-02	
	OPHEL1D	OPERATORS FAIL TO START SYSTEM AFTER LOCA SIGNAL		1.97E-02	1.97E-02	
	P6SR1E41C001	HPCI PUMP/TURBINE FAIL TO RUN	1.03E-03	2.40E+01	2.47E-02	
	SORVA	ALL SRVS RECLOSE GIVEN 5 SRVS OPENED		9.98E-01	9.98E-01	
73	%FL-INTAKE	FLAG FOR INITIATING EVENT CAUSED BY LOSS OF PSW DUE TO INTAKE PLUGGING		1.00E+00	1.00E+00	3.20E-08
	DE2	EMERG DEP FAILS (ELEV DW TEMP)		1.78E-02	1.78E-02	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_NODWC	FLAG FR DRYWELL COLING BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	INTAKEPLUG_____I	PSW INTAKE PLUGGING		1.00E-04	1.00E-04	
	MNUNHP_RCIC	RCIC SYSTEM INOP DUE TO MAINTENANCE		2.32E-02	2.32E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
74	%LOFW	LOSS OF FEEDWATER		7.10E-01	7.10E-01	3.15E-08
	COB	LOSS OF CONDENSATE GIVEN LOSS OF FEEDWATER		2.34E-01	2.34E-01	
	DEA	EMERG DEP FAILS (CRD AVAIL & NORM DW TEMP)		3.34E-03	3.34E-03	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	MVFO1E41F001	MOTOR OPERATED VALVE F001 FAILS TO OPEN	2.30E-03	1.00E+00	2.30E-03	
	P7SR1E51C001	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO RUN	1.03E-03	2.40E+01	2.47E-02	
	SORVA	ALL SRVS RECLOSE GIVEN 5 SRVS OPENED		9.98E-01	9.98E-01	
75	%LOFW	LOSS OF FEEDWATER		7.10E-01	7.10E-01	3.15E-08
	COB	LOSS OF CONDENSATE GIVEN LOSS OF FEEDWATER		2.34E-01	2.34E-01	
	DEA	EMERG DEP FAILS (CRD AVAIL & NORM DW TEMP)		3.34E-03	3.34E-03	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	MVFO1E41F006	VALVE F006 FAILS TO OPEN	2.30E-03	1.00E+00	2.30E-03	
	P7SR1E51C001	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO RUN	1.03E-03	2.40E+01	2.47E-02	
	SORVA	ALL SRVS RECLOSE GIVEN 5 SRVS OPENED		9.98E-01	9.98E-01	
76	%LOFW	LOSS OF FEEDWATER		7.10E-01	7.10E-01	3.15E-08
	COB	LOSS OF CONDENSATE GIVEN LOSS OF FEEDWATER		2.34E-01	2.34E-01	
	DEA	EMERG DEP FAILS (CRD AVAIL & NORM DW TEMP)		3.34E-03	3.34E-03	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	MVFO1E41F059	LUBE OIL COOLING VALVE FAILS TO OPEN	2.30E-03	1.00E+00	2.30E-03	
	P7SR1E51C001	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO RUN	1.03E-03	2.40E+01	2.47E-02	
	SORVA	ALL SRVS RECLOSE GIVEN 5 SRVS OPENED		9.98E-01	9.98E-01	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
77	%LOFW	LOSS OF FEEDWATER		7.10E-01	7.10E-01	3.15E-08
	COB	LOSS OF CONDENSATE GIVEN LOSS OF FEEDWATER		2.34E-01	2.34E-01	
	DEA	EMERG DEP FAILS (CRD AVAIL & NORM DW TEMP)		3.34E-03	3.34E-03	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	MVFO1E51F013	MOTOR OPERATED VALVE 1E51-F013 FAILS TO OPEN	2.30E-03	1.00E+00	2.30E-03	
	P6SR1E41C001	HPCI PUMP/TURBINE FAIL TO RUN	1.03E-03	2.40E+01	2.47E-02	
	SORVA	ALL SRVS RECLOSE GIVEN 5 SRVS OPENED		9.98E-01	9.98E-01	
78	%LOFW	LOSS OF FEEDWATER		7.10E-01	7.10E-01	3.15E-08
	COB	LOSS OF CONDENSATE GIVEN LOSS OF FEEDWATER		2.34E-01	2.34E-01	
	DEA	EMERG DEP FAILS (CRD AVAIL & NORM DW TEMP)		3.34E-03	3.34E-03	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	MVFO1E51F045	STEAM SUPPLY VALVE 1E51-F045 FAILS TO OPEN	2.30E-03	1.00E+00	2.30E-03	
	P6SR1E41C001	HPCI PUMP/TURBINE FAIL TO RUN	1.03E-03	2.40E+01	2.47E-02	
	SORVA	ALL SRVS RECLOSE GIVEN 5 SRVS OPENED		9.98E-01	9.98E-01	
79	%LOFW	LOSS OF FEEDWATER		7.10E-01	7.10E-01	3.15E-08
	COB	LOSS OF CONDENSATE GIVEN LOSS OF FEEDWATER		2.34E-01	2.34E-01	
	DEA	EMERG DEP FAILS (CRD AVAIL & NORM DW TEMP)		3.34E-03	3.34E-03	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	MVFO1E51F046	LUBE OIL COOLING WATER VALVE FAILS TO OPEN	2.30E-03	1.00E+00	2.30E-03	
	P6SR1E41C001	HPCI PUMP/TURBINE FAIL TO RUN	1.03E-03	2.40E+01	2.47E-02	
	SORVA	ALL SRVS RECLOSE GIVEN 5 SRVS OPENED		9.98E-01	9.98E-01	
80	%FL-BUSC	FLAG FOR LOSS OF 600-V BUS C INITIATING EVENT		1.00E+00	1.00E+00	3.14E-08
	BSSH1R23S003___I	600-V BUS C FAILS	3.76E-07	8.76E+03	3.29E-03	
	CC-HS-47	1/2, MVFO1E11F068B		2.18E-03	2.18E-03	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	SORVX	ALL SRVs REMAIN CLOSED GIVEN SUCCESSFUL BYPASS VALVE OPERATION		1.00E+00	1.00E+00	
	XRFD1S11S004	SUT C LOAD SHEDS FOLLOWING GENERATOR TRIP	5.61E-03	1.00E+00	5.61E-03	
81	%FL-BUSC	FLAG FOR LOSS OF 600-V BUS C INITIATING EVENT		1.00E+00	1.00E+00	3.14E-08
	BSSH1R23S003___I	600-V BUS C FAILS	3.76E-07	8.76E+03	3.29E-03	
	CC-QT-31	1/2, MVFO1E11F028B		2.18E-03	2.18E-03	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	SORVX	ALL SRVs REMAIN CLOSED GIVEN SUCCESSFUL BYPASS VALVE OPERATION		1.00E+00	1.00E+00	
	XRFD1S11S004	SUT C LOAD SHEDS FOLLOWING GENERATOR TRIP	5.61E-03	1.00E+00	5.61E-03	
82	%FL-BUSC	FLAG FOR LOSS OF 600-V BUS C INITIATING EVENT		1.00E+00	1.00E+00	3.09E-08
	BSSH1R23S003___I	600-V BUS C FAILS	3.76E-07	8.76E+03	3.29E-03	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	MNUNRS_DIVII	RHR LOOP 2 MAINT OR MISALIGNMENT OF VALVES IN LOOP 2 FLOW PATH		4.74E-03	4.74E-03	
	OPHETBISO1	OPERATORS FAIL TO OVERRIDE TB ISO		4.70E-03	4.70E-03	
	QCB	MAIN CONDENSER UNAVAILABLE FOR DHR (MSIVs CLOSED)		5.40E-01	5.40E-01	
	SORVX	ALL SRVs REMAIN CLOSED GIVEN SUCCESSFUL BYPASS VALVE OPERATION		1.00E+00	1.00E+00	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
83	%LOFW	LOSS OF FEEDWATER		7.10E-01	7.10E-01	2.95E-08
	COB	LOSS OF CONDENSATE GIVEN LOSS OF FEEDWATER		2.34E-01	2.34E-01	
	DEA	EMERG DEP FAILS (CRD AVAIL & NORM DW TEMP)		3.34E-03	3.34E-03	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	MNUNHP_RCIC	RCIC SYSTEM INOP DUE TO MAINTENANCE		2.32E-02	2.32E-02	
	MVFO1E41F001	MOTOR OPERATED VALVE F001 FAILS TO OPEN	2.30E-03	1.00E+00	2.30E-03	
	SORVA	ALL SRVS RECLOSE GIVEN 5 SRVS OPENED		9.98E-01	9.98E-01	
84	%LOFW	LOSS OF FEEDWATER		7.10E-01	7.10E-01	2.95E-08
	COB	LOSS OF CONDENSATE GIVEN LOSS OF FEEDWATER		2.34E-01	2.34E-01	
	DEA	EMERG DEP FAILS (CRD AVAIL & NORM DW TEMP)		3.34E-03	3.34E-03	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	MNUNHP_RCIC	RCIC SYSTEM INOP DUE TO MAINTENANCE		2.32E-02	2.32E-02	
	MVFO1E41F006	VALVE F006 FAILS TO OPEN	2.30E-03	1.00E+00	2.30E-03	
	SORVA	ALL SRVS RECLOSE GIVEN 5 SRVS OPENED		9.98E-01	9.98E-01	
85	%LOFW	LOSS OF FEEDWATER		7.10E-01	7.10E-01	2.95E-08
	COB	LOSS OF CONDENSATE GIVEN LOSS OF FEEDWATER		2.34E-01	2.34E-01	
	DEA	EMERG DEP FAILS (CRD AVAIL & NORM DW TEMP)		3.34E-03	3.34E-03	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	MNUNHP_RCIC	RCIC SYSTEM INOP DUE TO MAINTENANCE		2.32E-02	2.32E-02	
	MVFO1E41F059	LUBE OIL COOLING VALVE FAILS TO OPEN	2.30E-03	1.00E+00	2.30E-03	
	SORVA	ALL SRVS RECLOSE GIVEN 5 SRVS OPENED		9.98E-01	9.98E-01	
86	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	2.91E-08
	CC-DGS-1	1/3, DGLR1R43S001C		3.18E-02	3.18E-02	
	CC-DGS-2	1/3, DGLR1R43S001A		3.18E-02	3.18E-02	
	CC-DGS-3	1/3, DGLR1R43S001B		3.18E-02	3.18E-02	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
87	%FL-LODC	FLAG FOR LOSS OF STATION BATTER A DC POWER INITIATING EVENT		1.00E+00	1.00E+00	2.89E-08
	BSSH1R22S016___I	DC SWITCHGEAR S016 FAILS DURING OPERATION	3.76E-07	8.76E+03	3.29E-03	
	DE2	EMERG DEP FAILS (ELEV DW TEMP)		1.78E-02	1.78E-02	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_NODWC	FLAG FR DRYWELL COLING BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	MNUNHP_HPCI	HPCI SYSTEM INOP DUE TO MAINTENANCE		3.24E-02	3.24E-02	
	OPHEL1D	OPERATORS FAIL TO START SYSTEM AFTER LOCA SIGNAL		1.97E-02	1.97E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
88	%LOFW	LOSS OF FEEDWATER		7.10E-01	7.10E-01	2.88E-08
	COB	LOSS OF CONDENSATE GIVEN LOSS OF FEEDWATER		2.34E-01	2.34E-01	
	DE2	EMERG DEP FAILS (ELEV DW TEMP)		1.78E-02	1.78E-02	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_NODWC	FLAG FR DRYWELL COLING BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	OPHERDWC1	OPERATORS FAIL TO RESTORE DRYWELL COOLING		1.60E-02	1.60E-02	
	P6SR1E41C001	HPCI PUMP/TURBINE FAIL TO RUN	1.03E-03	2.40E+01	2.47E-02	
	P7SR1E51C001	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO RUN	1.03E-03	2.40E+01	2.47E-02	
	SORVA	ALL SRVS RECLOSE GIVEN 5 SRVS OPENED		9.98E-01	9.98E-01	
89	%ALOCA	LOCA - SPURIOUS ELEC SRV ACTUATION & BLOWDOWN		2.20E-03	2.20E-03	2.88E-08
	MIUNLC	MISCALIBRATION FAILS BOTH DIVISIONS OF LEVEL 1 SIGNAL		1.31E-05	1.31E-05	
90	%ALOCA	LOCA - SPURIOUS ELEC SRV ACTUATION & BLOWDOWN		2.20E-03	2.20E-03	2.88E-08
	MIUNNS	MISCALIBRATION OF TRIP UNITS - FAILURE OF LOW PRESSURE PERMISSIVE SIGNAL		1.31E-05	1.31E-05	
91	%TTRIP	TURBINE TRIP EVENT		1.64E+00	1.64E+00	2.73E-08
	DE4	EMERG DEP FAILS (MLOCA & HI PRESS INJECT INADEQ)		5.02E-02	5.02E-02	
	FL_DE4COND	FLAG FOR CONDITIONS FOR DE4		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_NODWC	FLAG FR DRYWELL COLING BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	MNUNHP_HPCI	HPCI SYSTEM INOP DUE TO MAINTENANCE		3.24E-02	3.24E-02	
	OPHENOACT1	OPERATORS FAIL TO TAKE ACTION GIVEN LOCA SIGNAL		2.34E-03	2.34E-03	
	SORV1	ONE SRV FAILS TO RECLOSE		4.38E-03	4.38E-03	
92	%LOFW	LOSS OF FEEDWATER		7.10E-01	7.10E-01	2.71E-08
	COB	LOSS OF CONDENSATE GIVEN LOSS OF FEEDWATER		2.34E-01	2.34E-01	
	DE2	EMERG DEP FAILS (ELEV DW TEMP)		1.78E-02	1.78E-02	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_NODWC	FLAG FR DRYWELL COLING BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	MNUNHP_RCIC	RCIC SYSTEM INOP DUE TO MAINTENANCE		2.32E-02	2.32E-02	
	OPHERDWC1	OPERATORS FAIL TO RESTORE DRYWELL COOLING		1.60E-02	1.60E-02	
	P6SR1E41C001	HPCI PUMP/TURBINE FAIL TO RUN	1.03E-03	2.40E+01	2.47E-02	
	SORVA	ALL SRVS RECLOSE GIVEN 5 SRVS OPENED		9.98E-01	9.98E-01	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
93	%FL-LOPSW	FLAG FOR LOSS OF PLANT SERVICE WATER INITIATING EVENT		1.00E+00	1.00E+00	2.65E-08
	CC-PS-15_____I	4/4, PMOR1P41C001C PMOR1P41C001D PMOR1P41C001B PMOR1P41C001A (1 YR)		7.76E-05	7.76E-05	
	DE2	EMERG DEP FAILS (ELEV DW TEMP)		1.78E-02	1.78E-02	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_NODWC	FLAG FR DRYWELL COLING BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	P7SR1E51C001	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO RUN	1.03E-03	2.40E+01	2.47E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
94	%IORV	INADVERTENTLY OPENED SRV		1.80E-02	1.80E-02	2.57E-08
	DEC	EMERG DEP FAILS (NO CRD, SORV)		5.04E-03	5.04E-03	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	MNUNHP_HPCI	HPCI SYSTEM INOP DUE TO MAINTENANCE		3.24E-02	3.24E-02	
	NBA	NORM BUS FAST XFER (INCL SPUR XFER OF EMERG BUS TO SUT C)		8.76E-03	8.76E-03	
95	%MSIVC	MSIV CLOSURE INITIATING EVENT		7.50E-01	7.50E-01	2.49E-08
	DE2	EMERG DEP FAILS (ELEV DW TEMP)		1.78E-02	1.78E-02	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_NODWC	FLAG FR DRYWELL COLING BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	MNUNHP_HPCI	HPCI SYSTEM INOP DUE TO MAINTENANCE		3.24E-02	3.24E-02	
	OPHENOACT1	OPERATORS FAIL TO TAKE ACTION GIVEN LOCA SIGNAL		2.34E-03	2.34E-03	
	P7SR1E51C001	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO RUN	1.03E-03	2.40E+01	2.47E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
96	%FL-LOPSW	FLAG FOR LOSS OF PLANT SERVICE WATER INITIATING EVENT		1.00E+00	1.00E+00	2.48E-08
	CC-PS-15_____I	4/4, PMOR1P41C001C PMOR1P41C001D PMOR1P41C001B PMOR1P41C001A (1 YR)		7.76E-05	7.76E-05	
	DE2	EMERG DEP FAILS (ELEV DW TEMP)		1.78E-02	1.78E-02	
	FL_#SORV0	FLAG FOR ALL SRVs RECLOSE OR REMAIN CLOSED		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_NODWC	FLAG FR DRYWELL COLING BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	MNUNHP_RCIC	RCIC SYSTEM INOP DUE TO MAINTENANCE		2.32E-02	2.32E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
97	%MSIVC	MSIV CLOSURE INITIATING EVENT		7.50E-01	7.50E-01	2.43E-08
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	OLA	OPERATORS FAIL TO ALIGN AVAILABLE SYSTEM S FOR DECAY HEAT REMOVAL		2.43E-05	2.43E-05	
	OPHEQV1	OP FAILS TO INITIATE VENT GIVEN FAILURE TO PROVIDE LONG-TERM HEAT REMOVAL		1.00E-01	1.00E-01	
	P6SS1E41C001	HPCI PUMP/TURBINE FAIL TO START	4.26E-02	1.00E+00	4.26E-02	
	RPB	RETURN TO POWER OP: GIVEN MSIVs INITIALLY CLOSED		3.14E-01	3.14E-01	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
98	%FL-LODC	FLAG FOR LOSS OF STATION BATTER A DC POWER INITIATING EVENT		1.00E+00	1.00E+00	2.42E-08
	AVFC1T46F005	AOV F005 FAILS TO CLOSE	2.00E-03	1.00E+00	2.00E-03	
	BSSH1R22S016___I	DC SWITCHGEAR S016 FAILS DURING OPERATION	3.76E-07	8.76E+03	3.29E-03	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	MNUNRS_DIVII	RHR LOOP 2 MAINT OR MISALIGNMENT OF VALVES IN LOOP 2 FLOW PATH		4.74E-03	4.74E-03	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
99	%FL-LODC	FLAG FOR LOSS OF STATION BATTER A DC POWER INITIATING EVENT		1.00E+00	1.00E+00	2.42E-08
	AVFC1T48F081	SGTS ISOLATION VALVE F081 FAILS TO CLOSE	2.00E-03	1.00E+00	2.00E-03	
	BSSH1R22S016___I	DC SWITCHGEAR S016 FAILS DURING OPERATION	3.76E-07	8.76E+03	3.29E-03	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	MNUNRS_DIVII	RHR LOOP 2 MAINT OR MISALIGNMENT OF VALVES IN LOOP 2 FLOW PATH		4.74E-03	4.74E-03	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
100	%FL-LODC	FLAG FOR LOSS OF STATION BATTER A DC POWER INITIATING EVENT		1.00E+00	1.00E+00	2.42E-08
	AVFO1T48F082	VENT VALVE F082 FAILS TO OPEN	2.00E-03	1.00E+00	2.00E-03	
	BSSH1R22S016___I	DC SWITCHGEAR S016 FAILS DURING OPERATION	3.76E-07	8.76E+03	3.29E-03	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	MNUNRS_DIVII	RHR LOOP 2 MAINT OR MISALIGNMENT OF VALVES IN LOOP 2 FLOW PATH		4.74E-03	4.74E-03	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	

Report Summary:
Filename: C:\CAFTA-W\U1HOLD~1\HATCH1.CUT
Print date: 06/18/1900 4:05 PM
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Attachment 5
Top 100 LERF Cutsets
(page 1 of 28)

Cutsets with Descriptions Report
@H1LERFTOP = 2.69E-06

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
1	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	1.71E-07
	CC-DGS-7	3/3, DGLR1R43S001C DGLR1R43S001A DGLR1R43S001B		1.89E-04	1.89E-04	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	
2	%FL-BUSC	FLAG FOR LOSS OF 600-V BUS C INITIATING EVENT		1.00E+00	1.00E+00	9.41E-08
	BSSH1R23S003___I	600-V BUS C FAILS	3.76E-07	8.76E+03	3.29E-03	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	MNUNBD	BUS D IN MAINTENANCE		3.67E-05	3.67E-05	
	SORVX	ALL SRVs REMAIN CLOSED GIVEN SUCCESSFUL BYPASS VALVE OPERATION		1.00E+00	1.00E+00	
3	%VSEQ	V SEQUENCE		8.62E-08	8.62E-08	8.62E-08
4	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	5.97E-08
	CC-DGS-42	3/3, CBFC1R22S005_5 CBFC1R22S006_6 CBFC1R22S007_6		6.60E-05	6.60E-05	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
5	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	5.79E-08
	CC-DGS-28	3/3, DGSS1R43S001A DGSS1R43S001B DGSS1R43S001C		6.40E-05	6.40E-05	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	
6	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	3.67E-08
	CC-DGS-21	3/3, DG1R1R43S001A DG1R1R43S001B DG1R1R43S001C		4.06E-05	4.06E-05	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	
7	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	3.46E-08
	CC-DGS-1	1/3, DGLR1R43S001C		3.18E-02	3.18E-02	
	CC-DGS-2	1/3, DGLR1R43S001A		3.18E-02	3.18E-02	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	UOL24	LOCA SIGNAL ON OPPOSITE UNIT, LOSP FOR 24 HOURS		3.78E-02	3.78E-02	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
8	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	2.91E-08
	CC-DGS-1	1/3, DGLR1R43S001C		3.18E-02	3.18E-02	
	CC-DGS-2	1/3, DGLR1R43S001A		3.18E-02	3.18E-02	
	CC-DGS-3	1/3, DGLR1R43S001B		3.18E-02	3.18E-02	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	
9	%FL-LOPSW	FLAG FOR LOSS OF PLANT SERVICE WATER INITIATING EVENT		1.00E+00	1.00E+00	2.54E-08
	AVFC1T46F005	AOV F005 FAILS TO CLOSE	2.00E-03	1.00E+00	2.00E-03	
	CC-PS-15_____I	4/4, PMOR1P41C001C PMOR1P41C001D PMOR1P41C001B PMOR1P41C001A (1 YR)		7.76E-05	7.76E-05	
	CNMT2&3	DRYWELL FAILS GIVEN CONTAINMENT OVERPRESSURE FAILURE		2.11E-01	2.11E-01	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
10	%FL-LOPSW	FLAG FOR LOSS OF PLANT SERVICE WATER INITIATING EVENT		1.00E+00	1.00E+00	2.54E-08
	AVFC1T48F081	SGTS ISOLATION VALVE F081 FAILS TO CLOSE	2.00E-03	1.00E+00	2.00E-03	
	CC-PS-15_____I	4/4, PMOR1P41C001C PMOR1P41C001D PMOR1P41C001B PMOR1P41C001A (1 YR)		7.76E-05	7.76E-05	
	CNMT2&3	DRYWELL FAILS GIVEN CONTAINMENT OVERPRESSURE FAILURE		2.11E-01	2.11E-01	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
11	%FL-LOPSW	FLAG FOR LOSS OF PLANT SERVICE WATER INITIATING EVENT		1.00E+00	1.00E+00	2.54E-08
	AVFO1T48F082	VENT VALVE F082 FAILS TO OPEN	2.00E-03	1.00E+00	2.00E-03	
	CC-PS-15_____I	4/4, PMOR1P41C001C PMOR1P41C001D PMOR1P41C001B PMOR1P41C001A (1 YR)		7.76E-05	7.76E-05	
	CNMT2&3	DRYWELL FAILS GIVEN CONTAINMENT OVERPRESSURE FAILURE		2.11E-01	2.11E-01	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
12	%FL-BUSC	FLAG FOR LOSS OF 600-V BUS C INITIATING EVENT		1.00E+00	1.00E+00	2.32E-08
	BSSH1R23S003___I	600-V BUS C FAILS	3.76E-07	8.76E+03	3.29E-03	
	BSSH1R23S004	600-V BUS D FAILS DURING OPERATION	3.76E-07	2.40E+01	9.02E-06	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	SORVX	ALL SRVs REMAIN CLOSED GIVEN SUCCESSFUL BYPASS VALVE OPERATION		1.00E+00	1.00E+00	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
13	%FL-BUSC	FLAG FOR LOSS OF 600-V BUS C INITIATING EVENT		1.00E+00	1.00E+00	2.07E-08
	BSSH1R23S003___I	600-V BUS C FAILS	3.76E-07	8.76E+03	3.29E-03	
	CNMT2&3	DRYWELL FAILS GIVEN CONTAINMENT OVERPRESSURE FAILURE		2.11E-01	2.11E-01	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	MNUNHS_LOOP2	LOOP 2 MAINTENANCE - RHRSW		6.83E-03	6.83E-03	
	SORVX	ALL SRVs REMAIN CLOSED GIVEN SUCCESSFUL BYPASS VALVE OPERATION		1.00E+00	1.00E+00	
	XRFD1S11S004	SUT C LOAD SHEDS FOLLOWING GENERATOR TRIP	5.61E-03	1.00E+00	5.61E-03	
14	%FL-BUSD	FLAG FOR INITIATING EVENT CAUSED BY LOSS OF 600V BUS D		1.00E+00	1.00E+00	1.88E-08
	BSSH1R23S004___I	600-V BUS D FAILS DURING OPERATION	3.76E-07	8.76E+03	3.29E-03	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	MNUNBC	BUS C IN MAINTENANCE		3.67E-05	3.67E-05	
	SORVX	ALL SRVs REMAIN CLOSED GIVEN SUCCESSFUL BYPASS VALVE OPERATION		1.00E+00	1.00E+00	
	XXBD_TRANSIENT	LOSS OF BUS D CAUSES INITIATING EVNET (TRIP)		2.00E-01	2.00E-01	
15	%ATWSMS	ATWS FOLLOWING MSIV CLOSURE/LOSS OF CONDENSER VACUUM EVENT		9.70E-01	9.70E-01	1.67E-08
	CNMT2&3	DRYWELL FAILS GIVEN CONTAINMENT OVERPRESSURE FAILURE		2.11E-01	2.11E-01	
	FL_IEGATWS	FLAG FOR ATWS EVENTS		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	OSA	OPERATORS FAIL TO INITIATE SLCS		8.22E-03	8.22E-03	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	XXXX1C11_HCUS	COMMON CAUSE FAILURE OF CONTROL RODS TO INSERT OCCURS		1.00E-05	1.00E-05	
16	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	1.63E-08
	CC-DGS-14	3/3, DGSR1R43S001C DGSR1R43S001A DGSR1R43S001B		1.80E-05	1.80E-05	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	
17	%ULHPCI	HPCI STEAM LINE BREAK INITIATING EVENT		1.34E-04	1.34E-04	1.60E-08
	CC-HPISO-3	2/2, MVFC1E41F002 MVFC1E41F003		1.19E-04	1.19E-04	
18	%ULRCIC	RCIC STEAM LINE BREAK INITIATING EVENT		1.34E-04	1.34E-04	1.60E-08
	CC-RCISO-3	2/2, MVFC1E51F007 MVFC1E51F008		1.19E-04	1.19E-04	
19	%ULRWCU	RWCU LINE BREAK INITIATING EVENT		1.34E-04	1.34E-04	1.60E-08
	CC-RWISO-3	2/2, MVFC1G31F001 MVFC1G31F004		1.19E-04	1.19E-04	

Attachment 5
Top 100 LERF Cutsets
Cutsets with Descriptions Report
@H1LERFTOP = 2.69E-06

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
20	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	1.54E-08
	CC-DGS-1	1/3, DGLR1R43S001C		3.18E-02	3.18E-02	
	CC-DGS-2	1/3, DGLR1R43S001A		3.18E-02	3.18E-02	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	OPHEEPB	OPERATOR FAILS TO ALIGN 600-V BUS TO BACKUP 4160-V BUS		1.62E-02	1.62E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA2	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.56E-01	7.56E-01	
21	%FL-BUSC	FLAG FOR LOSS OF 600-V BUS C INITIATING EVENT		1.00E+00	1.00E+00	1.44E-08
	BSSH1R23S003___I	600-V BUS C FAILS	3.76E-07	8.76E+03	3.29E-03	
	CNMT2&3	DRYWELL FAILS GIVEN CONTAINMENT OVERPRESSURE FAILURE		2.11E-01	2.11E-01	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	MNUNRS_DIVII	RHR LOOP 2 MAINT OR MISALIGNMENT OF VALVES IN LOOP 2 FLOW PATH		4.74E-03	4.74E-03	
	SORVX	ALL SRVs REMAIN CLOSED GIVEN SUCCESSFUL BYPASS VALVE OPERATION		1.00E+00	1.00E+00	
	XRFD1S11S004	SUT C LOAD SHEDS FOLLOWING GENERATOR TRIP	5.61E-03	1.00E+00	5.61E-03	
22	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	1.38E-08
	CC-DGS-1	1/3, DGLR1R43S001C		3.18E-02	3.18E-02	
	CC-DGS-22	1/3, DGSS1R43S001A		1.27E-02	1.27E-02	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	UOL24	LOCA SIGNAL ON OPPOSITE UNIT, LOSP FOR 24 HOURS		3.78E-02	3.78E-02	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
23	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	1.38E-08
	CC-DGS-2	1/3, DGLR1R43S001A		3.18E-02	3.18E-02	
	CC-DGS-24	1/3, DGSS1R43S001C		1.27E-02	1.27E-02	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	UOL24	LOCA SIGNAL ON OPPOSITE UNIT, LOSP FOR 24 HOURS		3.78E-02	3.78E-02	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	
24	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	1.28E-08
	CC-DGS-42	3/3, CBFC1R22S005_5 CBFC1R22S006_6 CBFC1R22S007_6		6.60E-05	6.60E-05	
	DUR3	OFFSITE POWER RESTORED AFTER 30 MINUTES, WITHIN 2.5 HOURS		4.90E-01	4.90E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_HPI-B-F	HPCI AND RCIC NOT AVAILABLE WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	P7SR1E51C001	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO RUN	1.03E-03	2.40E+01	2.47E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRE2&3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.30E-01	7.30E-01	
25	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	1.24E-08
	CC-DGS-28	3/3, DGSS1R43S001A DGSS1R43S001B DGSS1R43S001C		6.40E-05	6.40E-05	
	DUR3	OFFSITE POWER RESTORED AFTER 30 MINUTES, WITHIN 2.5 HOURS		4.90E-01	4.90E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_HPI-B-F	HPCI AND RCIC NOT AVAILABLE WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	P7SR1E51C001	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO RUN	1.03E-03	2.40E+01	2.47E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRE2&3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.30E-01	7.30E-01	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
26	%MSIVC	MSIV CLOSURE INITIATING EVENT		7.50E-01	7.50E-01	1.20E-08
	CNMT2&3	DRYWELL FAILS GIVEN CONTAINMENT OVERPRESSURE FAILURE		2.11E-01	2.11E-01	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	OLA	OPERATORS FAIL TO ALIGN AVAILABLE SYSTEM S FOR DECAY HEAT REMOVAL		2.43E-05	2.43E-05	
	OPHEQV1	OP FAILS TO INITIATE VENT GIVEN FAILURE TO PROVIDE LONG-TERM HEAT REMOVAL		1.00E-01	1.00E-01	
	QRA	DECAY HEAT REMOVAL NOT RECOVERED BEFORE CONTAINMENT OR ECCS FAILS		1.00E-01	1.00E-01	
	RPB	RETURN TO POWER OP: GIVEN MSIVs INITIALLY CLOSED		3.14E-01	3.14E-01	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
27	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	1.20E-08
	CC-DGS-42	3/3, CBFC1R22S005_5 CBFC1R22S006_6 CBFC1R22S007_6		6.60E-05	6.60E-05	
	DUR3	OFFSITE POWER RESTORED AFTER 30 MINUTES, WITHIN 2.5 HOURS		4.90E-01	4.90E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_HPI-B-F	HPCI AND RCIC NOT AVAILABLE WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	MNUNHP_RCIC	RCIC SYSTEM INOP DUE TO MAINTENANCE		2.32E-02	2.32E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRE2&3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.30E-01	7.30E-01	
28	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	1.16E-08
	CC-DGS-28	3/3, DGSS1R43S001A DGSS1R43S001B DGSS1R43S001C		6.40E-05	6.40E-05	
	DUR3	OFFSITE POWER RESTORED AFTER 30 MINUTES, WITHIN 2.5 HOURS		4.90E-01	4.90E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_HPI-B-F	HPCI AND RCIC NOT AVAILABLE WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	MNUNHP_RCIC	RCIC SYSTEM INOP DUE TO MAINTENANCE		2.32E-02	2.32E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRE2&3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.30E-01	7.30E-01	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
29	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	1.16E-08
	CC-DGS-1	1/3, DGLR1R43S001C		3.18E-02	3.18E-02	
	CC-DGS-2	1/3, DGLR1R43S001A		3.18E-02	3.18E-02	
	CC-DGS-23	1/3, DGSS1R43S001B		1.27E-02	1.27E-02	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	
30	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	1.16E-08
	CC-DGS-1	1/3, DGLR1R43S001C		3.18E-02	3.18E-02	
	CC-DGS-22	1/3, DGSS1R43S001A		1.27E-02	1.27E-02	
	CC-DGS-3	1/3, DGLR1R43S001B		3.18E-02	3.18E-02	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	
31	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	1.16E-08
	CC-DGS-2	1/3, DGLR1R43S001A		3.18E-02	3.18E-02	
	CC-DGS-24	1/3, DGSS1R43S001C		1.27E-02	1.27E-02	
	CC-DGS-3	1/3, DGLR1R43S001B		3.18E-02	3.18E-02	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	
32	%ULFWA	FEEDWATER LINE A BREAK INITIATING EVENT		6.70E-05	6.70E-05	1.16E-08
	CC-FWAISO-3	2/2, CVFC1B21F010A CVFC1B21F032A		1.73E-04	1.73E-04	
33	%ULFWB	FEEDWATER LINE B BREAK INITIATING EVENT		6.70E-05	6.70E-05	1.16E-08
	CC-FWBISO-6	2/2, CVFC1B21F010B CVFC1B21F032B		1.73E-04	1.73E-04	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
34	%TTRIP	TURBINE TRIP EVENT		1.64E+00	1.64E+00	1.13E-08
	CC-DGS-7	3/3, DGLR1R43S001C DGLR1R43S001A DGLR1R43S001B		1.89E-04	1.89E-04	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	XXOG_DEMAND	LOSS OF 230KV GRID CAUSED BY GENERATOR TRIP		2.40E-04	2.40E-04	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	
35	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	1.12E-08
	CNMT2&3	DRYWELL FAILS GIVEN CONTAINMENT OVERPRESSURE FAILURE		2.11E-01	2.11E-01	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	OLA	OPERATORS FAIL TO ALIGN AVAILABLE SYSTEM S FOR DECAY HEAT REMOVAL		2.43E-05	2.43E-05	
	OPHEQV1	OP FAILS TO INITIATE VENT GIVEN FAILURE TO PROVIDE LONG-TERM HEAT REMOVAL		1.00E-01	1.00E-01	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
36	%FL-BUSC	FLAG FOR LOSS OF 600-V BUS C INITIATING EVENT		1.00E+00	1.00E+00	1.07E-08
	BSSH1R23S003___I	600-V BUS C FAILS	3.76E-07	8.76E+03	3.29E-03	
	CNMT2&3	DRYWELL FAILS GIVEN CONTAINMENT OVERPRESSURE FAILURE		2.11E-01	2.11E-01	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	MNUNBD	BUS D IN MAINTENANCE		3.67E-05	3.67E-05	
	QCB	MAIN CONDENSER UNAVAILABLE FOR DHR (MSIVs CLOSED)		5.40E-01	5.40E-01	
	SORVX	ALL SRVs REMAIN CLOSED GIVEN SUCCESSFUL BYPASS VALVE OPERATION		1.00E+00	1.00E+00	
37	%SCRAM	REACTOR SCRAM INITIATING EVENT		1.39E+00	1.39E+00	9.65E-09
	CC-DGS-7	3/3, DGLR1R43S001C DGLR1R43S001A DGLR1R43S001B		1.89E-04	1.89E-04	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORVX	ALL SRVs REMAIN CLOSED GIVEN SUCCESSFUL BYPASS VALVE OPERATION		1.00E+00	1.00E+00	
	XXOG_DEMAND	LOSS OF 230KV GRID CAUSED BY GENERATOR TRIP		2.40E-04	2.40E-04	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
38	%TTRIP	TURBINE TRIP EVENT		1.64E+00	1.64E+00	9.24E-09
	CC-DGS-42	3/3, CBFC1R22S005_5 CBFC1R22S006_6 CBFC1R22S007_6		6.60E-05	6.60E-05	
	DUR3	OFFSITE POWER RESTORED AFTER 30 MINUTES, WITHIN 2.5 HOURS		4.90E-01	4.90E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	XXOG_DEMAND	LOSS OF 230KV GRID CAUSED BY GENERATOR TRIP		2.40E-04	2.40E-04	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	
39	%TTRIP	TURBINE TRIP EVENT		1.64E+00	1.64E+00	8.95E-09
	CC-DGS-28	3/3, DGSS1R43S001A DGSS1R43S001B DGSS1R43S001C		6.40E-05	6.40E-05	
	DUR3	OFFSITE POWER RESTORED AFTER 30 MINUTES, WITHIN 2.5 HOURS		4.90E-01	4.90E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	XXOG_DEMAND	LOSS OF 230KV GRID CAUSED BY GENERATOR TRIP		2.40E-04	2.40E-04	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	
40	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	8.80E-09
	CC-DGS-7	3/3, DGLR1R43S001C DGLR1R43S001A DGLR1R43S001B		1.89E-04	1.89E-04	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_HPI-B-F	HPCI AND RCIC NOT AVAILABLE WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	P7SR1E51C001	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO RUN	1.03E-03	2.40E+01	2.47E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRC2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		4.10E-01	4.10E-01	

Attachment 5
Top 100 LERF Cutsets
Cutsets with Descriptions Report
@H1LERFTOP = 2.69E-06

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
41	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	8.26E-09
	CC-DGS-7	3/3, DGLR1R43S001C DGLR1R43S001A DGLR1R43S001B		1.89E-04	1.89E-04	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_HPI-B-F	HPCI AND RCIC NOT AVAILABLE WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	MNUNHP_RCIC	RCIC SYSTEM INOP DUE TO MAINTENANCE		2.32E-02	2.32E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRC2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		4.10E-01	4.10E-01	
42	%SCRAM	REACTOR SCRAM INITIATING EVENT		1.39E+00	1.39E+00	7.87E-09
	CC-DGS-42	3/3, CBFC1R22S005_5 CBFC1R22S006_6 CBFC1R22S007_6		6.60E-05	6.60E-05	
	DUR3	OFFSITE POWER RESTORED AFTER 30 MINUTES, WITHIN 2.5 HOURS		4.90E-01	4.90E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORVX	ALL SRVs REMAIN CLOSED GIVEN SUCCESSFUL BYPASS VALVE OPERATION		1.00E+00	1.00E+00	
	XXOG_DEMAND	LOSS OF 230KV GRID CAUSED BY GENERATOR TRIP		2.40E-04	2.40E-04	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	
43	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	7.86E-09
	CC-DGS-21	3/3, DG1R1R43S001A DG1R1R43S001B DG1R1R43S001C		4.06E-05	4.06E-05	
	DUR3	OFFSITE POWER RESTORED AFTER 30 MINUTES, WITHIN 2.5 HOURS		4.90E-01	4.90E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_HPI-B-F	HPCI AND RCIC NOT AVAILABLE WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	P7SR1E51C001	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO RUN	1.03E-03	2.40E+01	2.47E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRE2&3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.30E-01	7.30E-01	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
44	%SCRAM	REACTOR SCRAM INITIATING EVENT		1.39E+00	1.39E+00	7.63E-09
	CC-DGS-28	3/3, DGSS1R43S001A DGSS1R43S001B DGSS1R43S001C		6.40E-05	6.40E-05	
	DUR3	OFFSITE POWER RESTORED AFTER 30 MINUTES, WITHIN 2.5 HOURS		4.90E-01	4.90E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORVX	ALL SRVs REMAIN CLOSED GIVEN SUCCESSFUL BYPASS VALVE OPERATION		1.00E+00	1.00E+00	
	XXOG_DEMAND	LOSS OF 230KV GRID CAUSED BY GENERATOR TRIP		2.40E-04	2.40E-04	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	
45	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	7.44E-09
	CC-DGS-42	3/3, CBFC1R22S005_5 CBFC1R22S006_6 CBFC1R22S007_6		6.60E-05	6.60E-05	
	DUR3	OFFSITE POWER RESTORED AFTER 30 MINUTES, WITHIN 2.5 HOURS		4.90E-01	4.90E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_HPI-B-F	HPCI AND RCIC NOT AVAILABLE WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	HIRE50	RECOVERY OF HIGH PRESS INJECT (CRD UNAVAILABLE; 0.5)		5.00E-01	5.00E-01	
	P7SS1E51C001	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO START	2.88E-02	1.00E+00	2.88E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRE2&3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.30E-01	7.30E-01	
46	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	7.44E-09
	CC-DGS-1	1/3, DGLR1R43S001C		3.18E-02	3.18E-02	
	CC-DGS-15	1/3, DG1R1R43S001A		6.84E-03	6.84E-03	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	UOL24	LOCA SIGNAL ON OPPOSITE UNIT, LOSP FOR 24 HOURS		3.78E-02	3.78E-02	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
47	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	7.44E-09
	CC-DGS-17	1/3, DG1R1R43S001C		6.84E-03	6.84E-03	
	CC-DGS-2	1/3, DGLR1R43S001A		3.18E-02	3.18E-02	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	UOL24	LOCA SIGNAL ON OPPOSITE UNIT, LOSP FOR 24 HOURS		3.78E-02	3.78E-02	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	
48	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	7.37E-09
	CC-DGS-21	3/3, DG1R1R43S001A DG1R1R43S001B DG1R1R43S001C		4.06E-05	4.06E-05	
	DUR3	OFFSITE POWER RESTORED AFTER 30 MINUTES, WITHIN 2.5 HOURS		4.90E-01	4.90E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_HPI-B-F	HPCI AND RCIC NOT AVAILABLE WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	MNUNHP_RCIC	RCIC SYSTEM INOP DUE TO MAINTENANCE		2.32E-02	2.32E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRE2&3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.30E-01	7.30E-01	
49	%FL-LODC	FLAG FOR LOSS OF STATION BATTER A DC POWER INITIATING EVENT		1.00E+00	1.00E+00	7.36E-09
	AVFC1T46F005	AOV F005 FAILS TO CLOSE	2.00E-03	1.00E+00	2.00E-03	
	BSSH1R22S016___I	DC SWITCHGEAR S016 FAILS DURING OPERATION	3.76E-07	8.76E+03	3.29E-03	
	CNMT2&3	DRYWELL FAILS GIVEN CONTAINMENT OVERPRESSURE FAILURE		2.11E-01	2.11E-01	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	MNUNHS_LOOP2	LOOP 2 MAINTENANCE - RHRSW		6.83E-03	6.83E-03	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
50	%FL-LODC	FLAG FOR LOSS OF STATION BATTER A DC POWER INITIATING EVENT		1.00E+00	1.00E+00	7.36E-09
	AVFC1T48F081	SGTS ISOLATION VALVE F081 FAILS TO CLOSE	2.00E-03	1.00E+00	2.00E-03	
	BSSH1R22S016___I	DC SWITCHGEAR S016 FAILS DURING OPERATION	3.76E-07	8.76E+03	3.29E-03	
	CNMT2&3	DRYWELL FAILS GIVEN CONTAINMENT OVERPRESSURE FAILURE		2.11E-01	2.11E-01	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	MNUNHS_LOOP2	LOOP 2 MAINTENANCE - RHRSW		6.83E-03	6.83E-03	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
51	%FL-LODC	FLAG FOR LOSS OF STATION BATTER A DC POWER INITIATING EVENT		1.00E+00	1.00E+00	7.36E-09
	AVFO1T48F082	VENT VALVE F082 FAILS TO OPEN	2.00E-03	1.00E+00	2.00E-03	
	BSSH1R22S016___I	DC SWITCHGEAR S016 FAILS DURING OPERATION	3.76E-07	8.76E+03	3.29E-03	
	CNMT2&3	DRYWELL FAILS GIVEN CONTAINMENT OVERPRESSURE FAILURE		2.11E-01	2.11E-01	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	MNUNHS_LOOP2	LOOP 2 MAINTENANCE - RHRSW		6.83E-03	6.83E-03	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
52	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	7.22E-09
	CC-DGS-28	3/3, DGSS1R43S001A DGSS1R43S001B DGSS1R43S001C		6.40E-05	6.40E-05	
	DUR3	OFFSITE POWER RESTORED AFTER 30 MINUTES, WITHIN 2.5 HOURS		4.90E-01	4.90E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_HPI-B-F	HPCI AND RCIC NOT AVAILABLE WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	HIRE50	RECOVERY OF HIGH PRESS INJECT (CRD UNAVAILABLE; 0.5)		5.00E-01	5.00E-01	
	P7SS1E51C001	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO START	2.88E-02	1.00E+00	2.88E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRE2&3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.30E-01	7.30E-01	
53	%LOFW	LOSS OF FEEDWATER		7.10E-01	7.10E-01	6.75E-09
	CC-DGS-7	3/3, DGLR1R43S001C DGLR1R43S001A DGLR1R43S001B		1.89E-04	1.89E-04	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORVA	ALL SRVS RECLOSE GIVEN 5 SRVS OPENED		9.98E-01	9.98E-01	
	XXOG_DEMAND	LOSS OF 230KV GRID CAUSED BY GENERATOR TRIP		2.40E-04	2.40E-04	
54	%FL-BUSC	FLAG FOR LOSS OF 600-V BUS C INITIATING EVENT		1.00E+00	1.00E+00	6.62E-09
	BSSH1R23S003___I	600-V BUS C FAILS	3.76E-07	8.76E+03	3.29E-03	
	CC-HS-47	1/2, MVFO1E11F068B		2.18E-03	2.18E-03	
	CNMT2&3	DRYWELL FAILS GIVEN CONTAINMENT OVERPRESSURE FAILURE		2.11E-01	2.11E-01	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	SORVX	ALL SRVs REMAIN CLOSED GIVEN SUCCESSFUL BYPASS VALVE OPERATION		1.00E+00	1.00E+00	
	XRFD1S11S004	SUT C LOAD SHEDS FOLLOWING GENERATOR TRIP	5.61E-03	1.00E+00	5.61E-03	

Attachment 5
Top 100 LERF Cutsets
Cutsets with Descriptions Report
@H1LERFTOP = 2.69E-06

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
55	%FL-BUSC	FLAG FOR LOSS OF 600-V BUS C INITIATING EVENT		1.00E+00	1.00E+00	6.62E-09
	BSSH1R23S003___I	600-V BUS C FAILS	3.76E-07	8.76E+03	3.29E-03	
	CC-QT-31	1/2, MVFO1E11F028B		2.18E-03	2.18E-03	
	CNMT2&3	DRYWELL FAILS GIVEN CONTAINMENT OVERPRESSURE FAILURE		2.11E-01	2.11E-01	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	SORVX	ALL SRVs REMAIN CLOSED GIVEN SUCCESSFUL BYPASS VALVE OPERATION		1.00E+00	1.00E+00	
	XRFD1S11S004	SUT C LOAD SHEDS FOLLOWING GENERATOR TRIP	5.61E-03	1.00E+00	5.61E-03	
56	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	6.60E-09
	CC-DGS-1	1/3, DGLR1R43S001C		3.18E-02	3.18E-02	
	CC-DGS-2	1/3, DGLR1R43S001A		3.18E-02	3.18E-02	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	MNUN1R43S001B	DGB MAINTENANCE		7.21E-03	7.21E-03	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	
57	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	6.57E-09
	CC-DGS-4	2/3, DGLR1R43S001C DGLR1R43S001A		1.92E-04	1.92E-04	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	UOL24	LOCA SIGNAL ON OPPOSITE UNIT, LOSP FOR 24 HOURS		3.78E-02	3.78E-02	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	
58	%FL-BUSC	FLAG FOR LOSS OF 600-V BUS C INITIATING EVENT		1.00E+00	1.00E+00	6.52E-09
	BSSH1R23S003___I	600-V BUS C FAILS	3.76E-07	8.76E+03	3.29E-03	
	CNMT2&3	DRYWELL FAILS GIVEN CONTAINMENT OVERPRESSURE FAILURE		2.11E-01	2.11E-01	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	MNUNRS_DIVII	RHR LOOP 2 MAINT OR MISALIGNMENT OF VALVES IN LOOP 2 FLOW PATH		4.74E-03	4.74E-03	
	OPHETBISO1	OPERATORS FAIL TO OVERRIDE TB ISO		4.70E-03	4.70E-03	
	QCB	MAIN CONDENSER UNAVAILABLE FOR DHR (MSIVs CLOSED)		5.40E-01	5.40E-01	
	SORVX	ALL SRVs REMAIN CLOSED GIVEN SUCCESSFUL BYPASS VALVE OPERATION		1.00E+00	1.00E+00	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
59	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	6.36E-09
	CC-DGS-42	3/3, CBFC1R22S005_5 CBFC1R22S006_6 CBFC1R22S007_6		6.60E-05	6.60E-05	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	SORV1	ONE SRV FAILS TO RECLOSE		4.38E-03	4.38E-03	
60	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	6.26E-09
	CC-DGS-1	1/3, DGLR1R43S001C		3.18E-02	3.18E-02	
	CC-DGS-15	1/3, DG1R1R43S001A		6.84E-03	6.84E-03	
	CC-DGS-3	1/3, DGLR1R43S001B		3.18E-02	3.18E-02	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	
61	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	6.26E-09
	CC-DGS-1	1/3, DGLR1R43S001C		3.18E-02	3.18E-02	
	CC-DGS-16	1/3, DG1R1R43S001B		6.84E-03	6.84E-03	
	CC-DGS-2	1/3, DGLR1R43S001A		3.18E-02	3.18E-02	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
62	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	6.26E-09
	CC-DGS-17	1/3, DG1R1R43S001C		6.84E-03	6.84E-03	
	CC-DGS-2	1/3, DGLR1R43S001A		3.18E-02	3.18E-02	
	CC-DGS-3	1/3, DGLR1R43S001B		3.18E-02	3.18E-02	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	
63	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	6.17E-09
	CC-DGS-28	3/3, DGSS1R43S001A DGSS1R43S001B DGSS1R43S001C		6.40E-05	6.40E-05	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	SORV1	ONE SRV FAILS TO RECLOSE		4.38E-03	4.38E-03	
64	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	6.12E-09
	CC-DGS-1	1/3, DGLR1R43S001C		3.18E-02	3.18E-02	
	CC-DGS-22	1/3, DGSS1R43S001A		1.27E-02	1.27E-02	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	OPHEEPB	OPERATOR FAILS TO ALIGN 600-V BUS TO BACKUP 4160-V BUS		1.62E-02	1.62E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA2	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.56E-01	7.56E-01	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
65	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	6.12E-09
	CC-DGS-2	1/3, DGLR1R43S001A		3.18E-02	3.18E-02	
	CC-DGS-24	1/3, DGSS1R43S001C		1.27E-02	1.27E-02	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	OPHEEPB	OPERATOR FAILS TO ALIGN 600-V BUS TO BACKUP 4160-V BUS		1.62E-02	1.62E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA2	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.56E-01	7.56E-01	
66	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	5.99E-09
	CC-DGS-1	1/3, DGLR1R43S001C		3.18E-02	3.18E-02	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	MNUN1R43S001A	DGA MAINTENANCE		5.51E-03	5.51E-03	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	UOL24	LOCA SIGNAL ON OPPOSITE UNIT, LOSP FOR 24 HOURS		3.78E-02	3.78E-02	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	
67	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	5.99E-09
	CC-DGS-2	1/3, DGLR1R43S001A		3.18E-02	3.18E-02	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	MNUN1R43S001C	DGC MAINTENANCE		5.51E-03	5.51E-03	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	UOL24	LOCA SIGNAL ON OPPOSITE UNIT, LOSP FOR 24 HOURS		3.78E-02	3.78E-02	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
68	%TTRIP	TURBINE TRIP EVENT		1.64E+00	1.64E+00	5.68E-09
	CC-DGS-21	3/3, DG1R1R43S001A DG1R1R43S001B DG1R1R43S001C		4.06E-05	4.06E-05	
	DUR3	OFFSITE POWER RESTORED AFTER 30 MINUTES, WITHIN 2.5 HOURS		4.90E-01	4.90E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	XXOG_DEMAND	LOSS OF 230KV GRID CAUSED BY GENERATOR TRIP		2.40E-04	2.40E-04	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	
69	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	5.53E-09
	CC-DGS-1	1/3, DGLR1R43S001C		3.18E-02	3.18E-02	
	CC-DGS-6	2/3, DGLR1R43S001A DGLR1R43S001B		1.92E-04	1.92E-04	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	
70	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	5.53E-09
	CC-DGS-2	1/3, DGLR1R43S001A		3.18E-02	3.18E-02	
	CC-DGS-5	2/3, DGLR1R43S001C DGLR1R43S001B		1.92E-04	1.92E-04	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
71	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	5.53E-09
	CC-DGS-3	1/3, DGLR1R43S001B		3.18E-02	3.18E-02	
	CC-DGS-4	2/3, DGLR1R43S001C DGLR1R43S001A		1.92E-04	1.92E-04	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	
72	%LOFW	LOSS OF FEEDWATER		7.10E-01	7.10E-01	5.50E-09
	CC-DGS-42	3/3, CBFC1R22S005_5 CBFC1R22S006_6 CBFC1R22S007_6		6.60E-05	6.60E-05	
	DUR3	OFFSITE POWER RESTORED AFTER 30 MINUTES, WITHIN 2.5 HOURS		4.90E-01	4.90E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORVA	ALL SRVS RECLOSE GIVEN 5 SRVS OPENED		9.98E-01	9.98E-01	
	XXOG_DEMAND	LOSS OF 230KV GRID CAUSED BY GENERATOR TRIP		2.40E-04	2.40E-04	
73	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	5.49E-09
	CC-DGS-22	1/3, DGSS1R43S001A		1.27E-02	1.27E-02	
	CC-DGS-24	1/3, DGSS1R43S001C		1.27E-02	1.27E-02	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	UOL24	LOCA SIGNAL ON OPPOSITE UNIT, LOSP FOR 24 HOURS		3.78E-02	3.78E-02	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
74	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	5.35E-09
	CC-DGS-1	1/3, DGLR1R43S001C		3.18E-02	3.18E-02	
	CC-DGS-2	1/3, DGLR1R43S001A		3.18E-02	3.18E-02	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	MIUNDGS_DGB	DIESEL B ALIGNED TO UNIT 2 AND UNIT 2 ALSO IN LOSP		5.84E-03	5.84E-03	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	
75	%LOFW	LOSS OF FEEDWATER		7.10E-01	7.10E-01	5.33E-09
	CC-DGS-28	3/3, DGSS1R43S001A DGSS1R43S001B DGSS1R43S001C		6.40E-05	6.40E-05	
	DUR3	OFFSITE POWER RESTORED AFTER 30 MINUTES, WITHIN 2.5 HOURS		4.90E-01	4.90E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORVA	ALL SRVS RECLOSE GIVEN 5 SRVS OPENED		9.98E-01	9.98E-01	
	XXOG_DEMAND	LOSS OF 230KV GRID CAUSED BY GENERATOR TRIP		2.40E-04	2.40E-04	
76	%MSIVC	MSIV CLOSURE INITIATING EVENT		7.50E-01	7.50E-01	5.18E-09
	CC-DGS-7	3/3, DGLR1R43S001C DGLR1R43S001A DGLR1R43S001B		1.89E-04	1.89E-04	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	XXOG_DEMAND	LOSS OF 230KV GRID CAUSED BY GENERATOR TRIP		2.40E-04	2.40E-04	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
77	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	5.13E-09
	CC-DGS-7	3/3, DGLR1R43S001C DGLR1R43S001A DGLR1R43S001B		1.89E-04	1.89E-04	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_HPI-B-F	HPCI AND RCIC NOT AVAILABLE WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	HIRE50	RECOVERY OF HIGH PRESS INJECT (CRD UNAVAILABLE; 0.5)		5.00E-01	5.00E-01	
	P7SS1E51C001	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO START	2.88E-02	1.00E+00	2.88E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRC2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		4.10E-01	4.10E-01	
78	%MSIVC	MSIV CLOSURE INITIATING EVENT		7.50E-01	7.50E-01	5.12E-09
	CNMT2&3	DRYWELL FAILS GIVEN CONTAINMENT OVERPRESSURE FAILURE		2.11E-01	2.11E-01	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	OLA	OPERATORS FAIL TO ALIGN AVAILABLE SYSTEM S FOR DECAY HEAT REMOVAL		2.43E-05	2.43E-05	
	OPHEQV1	OP FAILS TO INITIATE VENT GIVEN FAILURE TO PROVIDE LONG-TERM HEAT REMOVAL		1.00E-01	1.00E-01	
	P6SS1E41C001	HPCI PUMP/TURBINE FAIL TO START	4.26E-02	1.00E+00	4.26E-02	
	RPB	RETURN TO POWER OP: GIVEN MSIVs INITIALLY CLOSED		3.14E-01	3.14E-01	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
79	%FL-LODC	FLAG FOR LOSS OF STATION BATTER A DC POWER INITIATING EVENT		1.00E+00	1.00E+00	5.11E-09
	AVFC1T46F005	AOV F005 FAILS TO CLOSE	2.00E-03	1.00E+00	2.00E-03	
	BSSH1R22S016___I	DC SWITCHGEAR S016 FAILS DURING OPERATION	3.76E-07	8.76E+03	3.29E-03	
	CNMT2&3	DRYWELL FAILS GIVEN CONTAINMENT OVERPRESSURE FAILURE		2.11E-01	2.11E-01	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	MNUNRS_DIVII	RHR LOOP 2 MAINT OR MISALIGNMENT OF VALVES IN LOOP 2 FLOW PATH		4.74E-03	4.74E-03	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
80	%FL-LODC	FLAG FOR LOSS OF STATION BATTER A DC POWER INITIATING EVENT		1.00E+00	1.00E+00	5.11E-09
	AVFC1T48F081	SGTS ISOLATION VALVE F081 FAILS TO CLOSE	2.00E-03	1.00E+00	2.00E-03	
	BSSH1R22S016___I	DC SWITCHGEAR S016 FAILS DURING OPERATION	3.76E-07	8.76E+03	3.29E-03	
	CNMT2&3	DRYWELL FAILS GIVEN CONTAINMENT OVERPRESSURE FAILURE		2.11E-01	2.11E-01	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	MNUNRS_DIVII	RHR LOOP 2 MAINT OR MISALIGNMENT OF VALVES IN LOOP 2 FLOW PATH		4.74E-03	4.74E-03	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
81	%FL-LODC	FLAG FOR LOSS OF STATION BATTER A DC POWER INITIATING EVENT		1.00E+00	1.00E+00	5.11E-09
	AVFO1T48F082	VENT VALVE F082 FAILS TO OPEN	2.00E-03	1.00E+00	2.00E-03	
	BSSH1R22S016___I	DC SWITCHGEAR S016 FAILS DURING OPERATION	3.76E-07	8.76E+03	3.29E-03	
	CNMT2&3	DRYWELL FAILS GIVEN CONTAINMENT OVERPRESSURE FAILURE		2.11E-01	2.11E-01	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	MNUNRS_DIVII	RHR LOOP 2 MAINT OR MISALIGNMENT OF VALVES IN LOOP 2 FLOW PATH		4.74E-03	4.74E-03	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
82	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	5.04E-09
	CC-DGS-1	1/3, DGLR1R43S001C		3.18E-02	3.18E-02	
	CC-DGS-3	1/3, DGLR1R43S001B		3.18E-02	3.18E-02	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	MNUN1R43S001A	DGA MAINTENANCE		5.51E-03	5.51E-03	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	
83	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	5.04E-09
	CC-DGS-2	1/3, DGLR1R43S001A		3.18E-02	3.18E-02	
	CC-DGS-3	1/3, DGLR1R43S001B		3.18E-02	3.18E-02	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	MNUN1R43S001C	DGC MAINTENANCE		5.51E-03	5.51E-03	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	
84	%SCRAM	REACTOR SCRAM INITIATING EVENT		1.39E+00	1.39E+00	4.84E-09
	CC-DGS-21	3/3, DG1R1R43S001A DG1R1R43S001B DG1R1R43S001C		4.06E-05	4.06E-05	
	DUR3	OFFSITE POWER RESTORED AFTER 30 MINUTES, WITHIN 2.5 HOURS		4.90E-01	4.90E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORVX	ALL SRV# REMAIN CLOSED GIVEN SUCCESSFUL BYPASS VALVE OPERATION		1.00E+00	1.00E+00	
	XXOG_DEMAND	LOSS OF 230KV GRID CAUSED BY GENERATOR TRIP		2.40E-04	2.40E-04	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
85	%FL-BUSC	FLAG FOR LOSS OF 600-V BUS C INITIATING EVENT		1.00E+00	1.00E+00	4.71E-09
	BSSH1R23S003___I	600-V BUS C FAILS	3.76E-07	8.76E+03	3.29E-03	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	MNUN1R22S007	MAINTENANCE ON BUS 4160VAC 1G		3.67E-05	3.67E-05	
	OPHEEPANOLINK	OPERATOR FAILS TO ALIGN 600-V BUS TO BACKUP 4160-V BUS		5.00E-02	5.00E-02	
	SORVX	ALL SRVs REMAIN CLOSED GIVEN SUCCESSFUL BYPASS VALVE OPERATION		1.00E+00	1.00E+00	
86	%FL-BUSD	FLAG FOR INITIATING EVENT CAUSED BY LOSS OF 600V BUS D		1.00E+00	1.00E+00	4.63E-09
	BSSH1R23S003	600-V BUS C FAILS	3.76E-07	2.40E+01	9.02E-06	
	BSSH1R23S004___I	600-V BUS D FAILS DURING OPERATION	3.76E-07	8.76E+03	3.29E-03	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	SORVX	ALL SRVs REMAIN CLOSED GIVEN SUCCESSFUL BYPASS VALVE OPERATION		1.00E+00	1.00E+00	
	XXBD_TRANSIENT	LOSS OF BUS D CAUSES INITIATING EVNET (TRIP)		2.00E-01	2.00E-01	
87	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	4.62E-09
	CC-DGS-1	1/3, DGLR1R43S001C		3.18E-02	3.18E-02	
	CC-DGS-22	1/3, DGSS1R43S001A		1.27E-02	1.27E-02	
	CC-DGS-23	1/3, DGSS1R43S001B		1.27E-02	1.27E-02	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	
88	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	4.62E-09
	CC-DGS-2	1/3, DGLR1R43S001A		3.18E-02	3.18E-02	
	CC-DGS-23	1/3, DGSS1R43S001B		1.27E-02	1.27E-02	
	CC-DGS-24	1/3, DGSS1R43S001C		1.27E-02	1.27E-02	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
89	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	4.62E-09
	CC-DGS-22	1/3, DGSS1R43S001A		1.27E-02	1.27E-02	
	CC-DGS-24	1/3, DGSS1R43S001C		1.27E-02	1.27E-02	
	CC-DGS-3	1/3, DGLR1R43S001B		3.18E-02	3.18E-02	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPI-B-S	SUCCESS OF HPI OPERATION WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRA2&3	LOSP RECOVERY VALUE ADDED TO BE FILE FOR FORTE HYBRID CUTSET MODEL		2.70E-01	2.70E-01	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	
90	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	4.58E-09
	CC-DGS-21	3/3, DG1R1R43S001A DG1R1R43S001B DG1R1R43S001C		4.06E-05	4.06E-05	
	DUR3	OFFSITE POWER RESTORED AFTER 30 MINUTES, WITHIN 2.5 HOURS		4.90E-01	4.90E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_HPI-B-F	HPCI AND RCIC NOT AVAILABLE WITH BATTERY POWER ONLY		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	HIRE50	RECOVERY OF HIGH PRESS INJECT (CRD UNAVAILABLE; 0.5)		5.00E-01	5.00E-01	
	P7SS1E51C001	RCIC TURBINE DRIVEN PUMP 1E51-C001 FAILS TO START	2.88E-02	1.00E+00	2.88E-02	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	GRE2&3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.30E-01	7.30E-01	
91	%MSIVC	MSIV CLOSURE INITIATING EVENT		7.50E-01	7.50E-01	4.22E-09
	CC-DGS-42	3/3, CBFC1R22S005_5 CBFC1R22S006_6 CBFC1R22S007_6		6.60E-05	6.60E-05	
	DUR3	OFFSITE POWER RESTORED AFTER 30 MINUTES, WITHIN 2.5 HOURS		4.90E-01	4.90E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	XXOG_DEMAND	LOSS OF 230KV GRID CAUSED BY GENERATOR TRIP		2.40E-04	2.40E-04	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
92	%FL-BUSC	FLAG FOR LOSS OF 600-V BUS C INITIATING EVENT		1.00E+00	1.00E+00	4.11E-09
	BSSH1R23S003___I	600-V BUS C FAILS	3.76E-07	8.76E+03	3.29E-03	
	CC-DGS-1	1/3, DGLR1R43S001C		3.18E-02	3.18E-02	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	SORVX	ALL SRVs REMAIN CLOSED GIVEN SUCCESSFUL BYPASS VALVE OPERATION		1.00E+00	1.00E+00	
	XXOG_DEMAND	LOSS OF 230KV GRID CAUSED BY GENERATOR TRIP		2.40E-04	2.40E-04	
93	%FL-BUSC	FLAG FOR LOSS OF 600-V BUS C INITIATING EVENT		1.00E+00	1.00E+00	4.10E-09
	BSSH1R23S003___I	600-V BUS C FAILS	3.76E-07	8.76E+03	3.29E-03	
	CNMT2&3	DRYWELL FAILS GIVEN CONTAINMENT OVERPRESSURE FAILURE		2.11E-01	2.11E-01	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	M2XC1E11F068B	MOV F068B FAILS TO CONTROL FLOW - TRANSFERS CLOSED	5.62E-05	2.40E+01	1.35E-03	
	SORVX	ALL SRVs REMAIN CLOSED GIVEN SUCCESSFUL BYPASS VALVE OPERATION		1.00E+00	1.00E+00	
	XRFD1S11S004	SUT C LOAD SHEDS FOLLOWING GENERATOR TRIP	5.61E-03	1.00E+00	5.61E-03	
94	%MSIVC	MSIV CLOSURE INITIATING EVENT		7.50E-01	7.50E-01	4.10E-09
	CC-DGS-28	3/3, DGSS1R43S001A DGSS1R43S001B DGSS1R43S001C		6.40E-05	6.40E-05	
	DUR3	OFFSITE POWER RESTORED AFTER 30 MINUTES, WITHIN 2.5 HOURS		4.90E-01	4.90E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	XXOG_DEMAND	LOSS OF 230KV GRID CAUSED BY GENERATOR TRIP		2.40E-04	2.40E-04	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	
95	%FL-BUSC	FLAG FOR LOSS OF 600-V BUS C INITIATING EVENT		1.00E+00	1.00E+00	3.99E-09
	BSSH1R23S003___I	600-V BUS C FAILS	3.76E-07	8.76E+03	3.29E-03	
	CNMT2&3	DRYWELL FAILS GIVEN CONTAINMENT OVERPRESSURE FAILURE		2.11E-01	2.11E-01	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	HATCHAVAIL	HATCH AVAILABILITY		7.79E-01	7.79E-01	
	MNUNHS_LOOP2	LOOP 2 MAINTENANCE - RHRSW		6.83E-03	6.83E-03	
	OPHES064/S065	OPERATOR ACTION TO MANUALLY TRANSFER INSTRUMENT BUS POWER SUPPLIES		2.00E-02	2.00E-02	
	QCB	MAIN CONDENSER UNAVAILABLE FOR DHR (MSIVs CLOSED)		5.40E-01	5.40E-01	
	QRA	DECAY HEAT REMOVAL NOT RECOVERED BEFORE CONTAINMENT OR ECCS FAILS		1.00E-01	1.00E-01	
	SORVX	ALL SRVs REMAIN CLOSED GIVEN SUCCESSFUL BYPASS VALVE OPERATION		1.00E+00	1.00E+00	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
96	%TTRIP	TURBINE TRIP EVENT		1.64E+00	1.64E+00	3.96E-09
	CC-DGS-42	3/3, CBFC1R22S005_5 CBFC1R22S006_6 CBFC1R22S007_6		6.60E-05	6.60E-05	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	XXOG_DEMAND	LOSS OF 230KV GRID CAUSED BY GENERATOR TRIP		2.40E-04	2.40E-04	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	
97	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	3.91E-09
	CC-DGS-21	3/3, DG1R1R43S001A DG1R1R43S001B DG1R1R43S001C		4.06E-05	4.06E-05	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	SORV1	ONE SRV FAILS TO RECLOSE		4.38E-03	4.38E-03	
98	%MSIVC	MSIV CLOSURE INITIATING EVENT		7.50E-01	7.50E-01	3.89E-09
	CNMT2&3	DRYWELL FAILS GIVEN CONTAINMENT OVERPRESSURE FAILURE		2.11E-01	2.11E-01	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	MNUNHP_HPCI	HPCI SYSTEM INOP DUE TO MAINTENANCE		3.24E-02	3.24E-02	
	OLA	OPERATORS FAIL TO ALIGN AVAILABLE SYSTEM S FOR DECAY HEAT REMOVAL		2.43E-05	2.43E-05	
	OPHEQV1	OP FAILS TO INITIATE VENT GIVEN FAILURE TO PROVIDE LONG-TERM HEAT REMOVAL		1.00E-01	1.00E-01	
	RPB	RETURN TO POWER OP: GIVEN MSIVs INITIALLY CLOSED		3.14E-01	3.14E-01	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
99	%TTRIP	TURBINE TRIP EVENT		1.64E+00	1.64E+00	3.84E-09
	CC-DGS-28	3/3, DGSS1R43S001A DGSS1R43S001B DGSS1R43S001C		6.40E-05	6.40E-05	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	SORV0	ALL SRVS RECLOSE		9.95E-01	9.95E-01	
	XXOG_DEMAND	LOSS OF 230KV GRID CAUSED BY GENERATOR TRIP		2.40E-04	2.40E-04	
	UA3	LOSP RECOVERY ADDED FOR FORTE HYBRID CUTSET MODEL		7.29E-01	7.29E-01	

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
100	%LOSP	LOSP INITIATING EVENT		2.20E-02	2.20E-02	3.82E-09
	CC-DGS-7	3/3, DGLR1R43S001C DGLR1R43S001A DGLR1R43S001B		1.89E-04	1.89E-04	
	DUR24	LOSP EXCEEDS 2.5 HOURS (24 HOURS ASSUMED)		2.10E-01	2.10E-01	
	FL_DGA	DG A FAILS TO SUPPLY POWER TO 4160-V BUS E GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGB	DG B FAILS TO SUPPLY POWER TO 4160-V BUS F GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_DGC	DG C FAILS TO SUPPLY POWER TO 4160-V BUS G GIVEN LOSS OF BUS POWER		1.00E+00	1.00E+00	
	FL_HPCI	FLAG FOR HPCI BEING UNAVAILABLE		1.00E+00	1.00E+00	
	FL_LER_OT	FLAG FOR DRYWELL OVERTEMPERATURE FAILURE		1.00E+00	1.00E+00	
	FL_LOSP	FLAG FOR SELECTED LOSP		1.00E+00	1.00E+00	
	FL_QV	FALG FOR CONTAINMENT VENT FAILURE		1.00E+00	1.00E+00	
	FL_RCIC	FLAG FOR RCIC BEING UNAVAILABLE		1.00E+00	1.00E+00	
	SORV1	ONE SRV FAILS TO RECLOSE		4.38E-03	4.38E-03	

Report Summary:
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Attachment 6
Derivation of ΔCDF and ΔLERF for the Remaining SAMAs

Phase II SAMA Identifier: P2-7

Title: Redundant DC power for PSW pump controls

A. PRA Assumptions Applicable to Evaluation

The current Hatch PSA model does not include the pump 1C and pump 1D trip on loss of DC control power. Therefore, modifications were required to the base model to include this failure mode. Then from the revised base model, changes were made to incorporate the design modification of the SAMA.

B. Effects on Initiating Events

A small potential effect on the loss of PSW initiating event frequency could be postulated for this modification. The loss of station battery A initiating event frequency in the model is 2.70E-3, 20 times lower than the pump failure frequency, already modeled, due to other causes. In addition, a single pump failure to run has a low importance (~2E-4 F-V importance) with a frequency of 5.6E-2 per year. To include the loss of diesel battery A or C as part of the loss of PSW initiator model would have an insignificant contribution to the initiating event frequency. Therefore, no changes were made to the initiating event frequency model due to this design modification.

C. System Effects to Prevent Core Damage

PSW supplies cooling water to several safety-related systems, such as emergency diesel generators, RHR/CS pump room HVAC, control room HVAC, HPCI room HVAC, drywell cooling, RHRSW pump cooling, RBCCW (CRD support), and the availability of bypass valves (EHC support) and is, therefore, an important support system in the prevention of core damage. This SAMA involves providing a redundant DC control power supply for PSW pumps 1C and 1D, now supplied from diesel battery A and diesel battery C, respectively. The pump breakers for these two pumps trip open on loss of DC control power. This SAMA would provide backup control power to these two pumps from diesel battery B through automatic electro-mechanical switches on loss of the normal DC control power supply. It is assumed that the automatic transfer to the redundant DC supply would not occur fast enough to prevent pump trip and that the pump would be required to restart once the backup DC control power source is aligned.

D. System Effects to Mitigate Core Melt Progression

PSW supplies cooling water to several safety-related systems that are important to the mitigation of core melt progression. These include drywell cooling, control room HVAC, and decay heat removal. Improving the availability of PSW would reduce the frequency of large-early release (LERF).

E. Description of Quantification

As stated in Section A, the current Hatch PSA model does not include the pump 1C and pump 1D trip on loss of DC control power. The current model was modified to include this failure mode and a quantification was made of the revised base case PSA model. The same frequency truncation limits (cutoff) were used for the SAMA quantifications as were used for the current Hatch model. The results for the revised base case model are as follows:

BASE CASE

Parameter	Cutoff	Frequency
CDF	1.0E-10	1.6384E-05
LERF	5.0E-11	2.7030E-06

Then modifications were made to the revised base case model to include the redundant DC control power supply with an automatic switch for each of the two pumps. The failure rate for a relay failure to operate on demand (1.34E-04 per demand) was used for the automatic electro-mechanical switches. The results of the quantification with the SAMA in place are as follows:

Parameter	Cutoff	Frequency	Change from Base Case
CDF	1.0E-10	1.6366E-05	-0.11 %
LERF	5.0E-11	2.7012E-06	-0.07 %

Phase II SAMA Identifier: P2-10

Title: Allow cross-connection of PSW

A. PRA Assumptions Applicable to Evaluation

The current Hatch PSA model does not include the pump 1C and pump 1D trip on loss of DC control power.

Operator actions already exist in the current Hatch PSA model for aligning the following loads to the opposite division of PSW:

Load	Operator Action Basic Event
Containment Fan Coolers	OPHEOWE
Diesel Generator 1B	OPHEDG1BSSW
RHR Service Water	RSREC2
Screen Wash	(alternate supply from Unit 2 included in model)

Control Room HVAC OPHEVM1

B. Effects on Initiating Events

This SAMA has no effect on the complete loss of PSW initiating event frequency. There is no initiating event for the loss of a single division of PSW.

C. System Effects to Prevent Core Damage

PSW supplies cooling water to several safety-related systems, such as emergency diesel generators, RHR/CS pump room HVAC, control room HVAC, HPCI room HVAC, drywell cooling, RHRSW pump cooling, RBCCW (CRD support), and the availability of bypass valves (EHC support) and is, therefore, an important support system in the prevention of core damage. This SAMA involves providing procedures for cross-connecting the two divisions of PSW. The base PRA model already includes operator actions to align most of the important loads to the opposite division of PSW, leaving no appreciable risk reduction from this SAMA.

D. System Effects to Mitigate Core Melt Progression

PSW supplies cooling water to several safety-related systems that are important to the mitigation of core melt progression. These include drywell cooling, control room HVAC, and decay heat removal. Improving the availability of PSW would reduce the frequency of large-early release (LERF), however, as discussed in Section C, there is a negligible impact from this SAMA, because of existing procedures.

E. Description of Quantification

This SAMA involves revising procedures to allow the cross-connection of Div. I PSW pumps to the Div. II reactor building header or vice versa.

This SAMA is only useful for recovering failure of one PSW division pump train in conjunction with the failure of the reactor building header flow path for the opposite division during conditions where isolation of the turbine building loads is required (LOSP or LOCA). The failure frequency of a single division reactor building flow path is approximately 5.8E-5 (gate PS-G00MNC or PS-G01MNC) and the failure frequency of a single division set of pump trains is approximately 7.5E-4 (gate PSW1DGTB or PSW2DGTB), not including support system failures. Hence, the frequency of events when this SAMA would be useful is 2*(5.8E-5)*(7.5E-4), or 8.7E-8. By contrast, the total failure frequency for both divisions of PSW is at least 8.9E-4 (top event PS). Many of the top cutsets that fail both divisions of PSW, in this case, involve failure of the turbine building isolation, making this crosstie unavailable. Therefore, this SAMA would have no appreciable impact on availability of PSW and, hence, no appreciable impact on CDF or LERF.

Phase II SAMA Identifier: P2-3

Title: Proceduralize intermittent operation of HPCI

A. PRA Assumptions Applicable to Evaluation

It is assumed in the base PRA model that operators will use HPCI intermittently to control level. The intermittent operation of HPCI is already credited in the Hatch PSA model by way of operator actions OPHEHP2, OPHEHP3, and OPHEHP8.

B. Effects on Initiating Events

HPCI is a standby system and this SAMA has no effect on initiating event frequencies.

C. System Effects to Prevent Core Damage

The intermittent operation of HPCI is slightly important in the prevention of core damage, as evidenced by the importance values shown in Section E. This SAMA involves revising procedures 34SO-E41-001-1S and 34SO-E41-001-2S by adding a note reminding operators that intermittent operation of HPCI is possible as long as all system operational prerequisites, system precautions, and limitations are observed.

D. System Effects to Mitigate Core Melt Progression

As discussed below, the three operator actions related to intermittent operation of HPCI all have 0.0 importance to LERF, so that this SAMA has no impact on core melt progression.

E. Description of Quantification

The intermittent operation of HPCI is already credited in the Hatch PSA model by way of operator actions OPHEHP2, OPHEHP3, and OPHEHP8. These operator action basic events have the following significance to CDF:

Event	Value	F-V	Birnbaum	RRW	RAW
OPHEHP2	1.02E-2	3.99E-3	6.39E-6	1.004	1.39
OPHEHP3	2.98E-3	1.93E-3	1.06E-5	1.002	1.65
OPHEHP8	1.70E-2	1.60E-3	1.55E-6	1.002	1.09

These three operator action basic events should be mutually exclusive and more than one should not appear in any single cutset, so that the change in CDF due to a change in the operator actions is cumulative. In order to quantify the change in failure frequency of each of these actions due to the note being added to the procedure, the human reliability analysis (HRA) for Hatch would have to be revisited and the impact of this minor change to procedures would have to be

assessed. Short of that, we will examine the impact of reducing the three operator failure frequencies by some selected percentages. If the operator action failure rates are reduced by 10%, the revised CDF will be 1.6372E-5 or a –0.07% change in CDF. If the error rates are reduced by 50%, the revised CDF will be 1.6322E-5 or a –0.38% change in CDF. If the error rates are assumed to be 0.0 (bounding case), the revised CDF will be 1.6254E-5 or a –0.79% change in CDF. The calculations of CDF with revised operator failure rates were done manually, i.e., no changes were made to the PRA model and no cutsets were generated.

If the human reliability analysis were revisited, it is expected that the change in operator failure rates due to this minor procedure change would be quite small, probably 10% or less.

All three of these operator action basic events have a 0.0 F-V importance to LERF, so that any change in their failure rates would have no impact on LERF at the cutoff used for quantification.

Phase II SAMA Identifier: P2-4

Title: Enhance standby gas treatment procedures

A. PRA Assumptions Applicable to Evaluation

N/A

B. Effects on Initiating Events

SGTS is a standby system and this SAMA has no effect on initiating event frequencies.

C. System Effects to Prevent Core Damage

This SAMA involves revising procedures governing the operation of SGTS trains. The only place SGTS appears in the Hatch CDF and LERF models is in the containment hardened vent top event QV. Top event QV questions only the isolation of SGTS in order to use the hardened vent path, since part of the flow path is shared between the two functions. Therefore, there is no impact to core damage frequency, given the current models, from changes to SGTS procedures or operating philosophy.

D. System Effects to Mitigate Core Melt Progression

As discussed above, there is no impact on LERF or CDF from this SAMA.

E. Description of Quantification

No quantification was performed for this SAMA

Phase II SAMA Identifier: P2-12

Title: Provide DC power to the 120/240V Vital AC system from the Class 1E station service battery system instead of its own battery.

A. PRA Assumptions Applicable to Evaluation

N/A

B. Effects on Initiating Events

There is no initiating event in the Hatch model for loss of vital AC. Initiator LODC represents loss of station battery A, but this SAMA has no impact on the frequency of LODC.

C. System Effects to Prevent Core Damage

This SAMA involves providing DC power to the vital AC system from station service battery 1A instead of from the vital AC UPS battery that currently supplies DC power (See attached diagram). The supply from the battery is a third supply and is redundant to the supplies from two different 600V AC buses. The vital AC system supplies power for feedwater control and for bypass valve operation. As discussed in Section E, there is no impact on CDF due to the fact that the UPS battery has 0.0 importance to CDF in the base model.

D. System Effects to Mitigate Core Melt Progression

Improvement of feedwater and bypass reliability would result in some reduction in LERF by reducing the core damage frequency. However, as discussed in Section E, this SAMA has no impact on LERF due to the fact that the UPS battery has 0.0 importance to LERF in the base model.

E. Description of Quantification

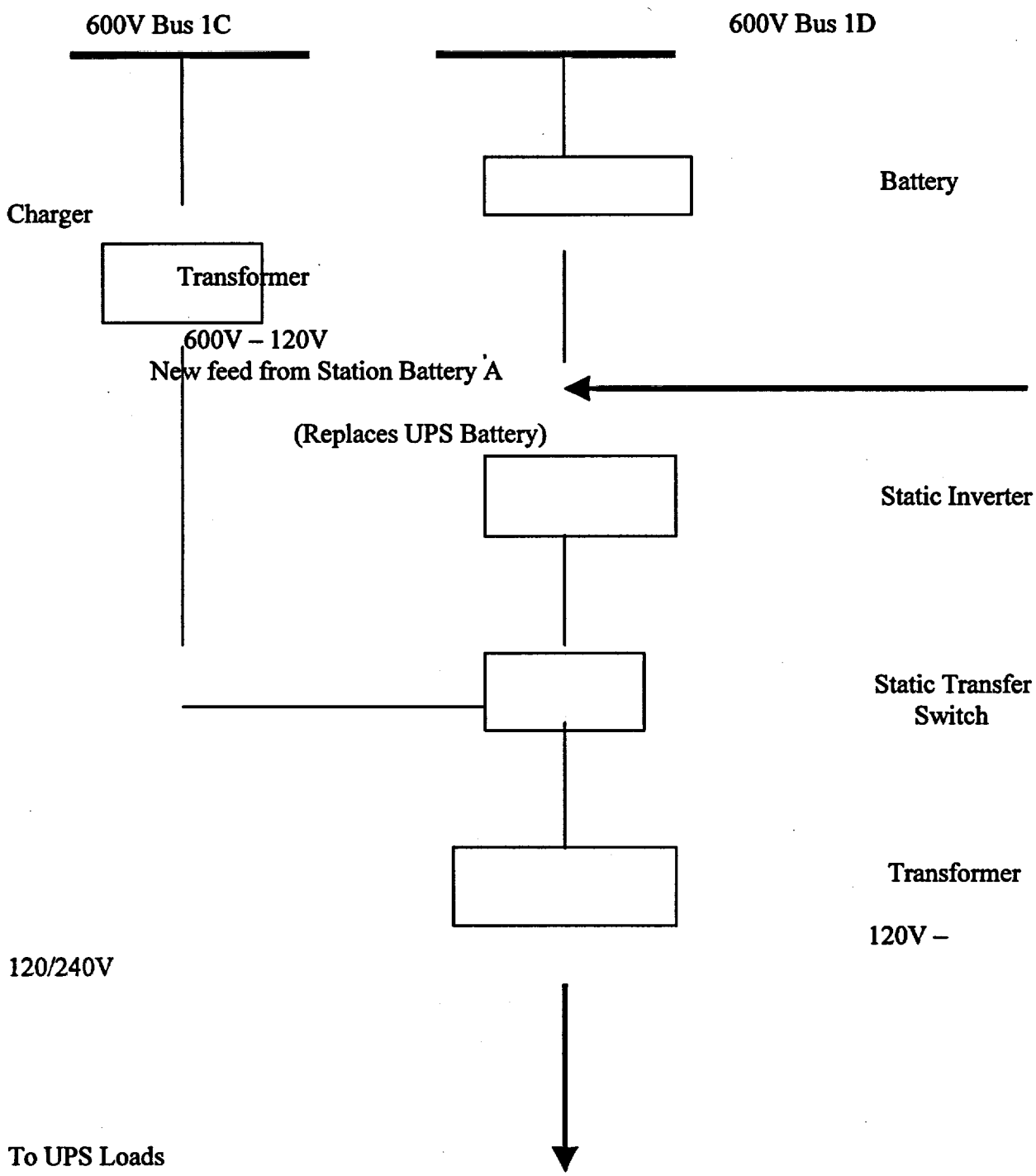
The UPS battery was removed from the Hatch model and the station service battery (gate SA) during non-LOSP events was linked to the vital AC fault tree in place of the UPS battery. The electrical loads, in the Hatch base model, supplied by vital AC, are failed on loss of offsite power, so the subtree modeling station battery supply following LOSP was not required for this quantification.

The results of the quantification with the SAMA in place are as follows:

Parameter	Cutoff	Frequency	Change from Base Case
CDF	1.0E-10	1.6384E-05	0.0 %
LERF	5.0E-11	2.7030E-06	0.0 %

The lack of change in CDF and LERF frequencies is supported by the fact that the UPS battery in the base case model does not appear in any of the cutsets.

Diagram for SAMA P2-12



Phase II SAMA Identifier: P2-2

Title: Use the fire protection system as a backup source for the containment spray system.

A. PRA Assumptions Applicable to Evaluation

N/A

B. Effects on Initiating Events

Containment spray is a standby system and this SAMA has no effect on initiating event frequencies.

C. System Effects to Prevent Core Damage

This SAMA involves supplying water to the drywell spray headers from the RHR service water system or from the fire protection system via existing connections as an alternate to the normal supply from RHR. The containment spray system is manually initiated by operators. Failure of the operator action to initiate spray makes up 98% of the total failure probability of containment spray in the base model. Further, the operator action basic event (OPHEDW2) has a F-V importance of 1.33E-05 to the base CDF. Taking all these facts into consideration, an insignificant change in CDF would be expected from adding redundant water supplies (hardware) to the base model.

D. System Effects to Mitigate Core Melt Progression

The operator action basic event (OPHEDW2) has a F-V importance of 1.08E-04 to the base LERF. Considering the low importance of the operator action to LERF and the other facts discussed in Section C, an insignificant change in LERF would be expected from adding redundant water supplies (hardware) to the base model.

E. Description of Quantification

Alternate supplies from RHRSW and from fire water to containment spray were added as redundant to the normal supply from RHR in the Hatch model, as a result of this SAMA. The current base model does not credit possible crosstie from either the RHRSW system or from the fire water system.

Adding the supply from Division I(II) RHRSW involved linking gate HSA(HSB) to the containment spray portion of the PRA model and adding basic events for the failure to open of MOV 1E11F073A(B), MOV 1E11F075A(B), and check valve 1E11F078A(B).

For the alternate supply from fire water, basic event FPS-UNAVAIL with a value of 0.01 was added to represent the unavailability of the fire water system. Also, basic events for the transferring closed of manual valves 1E11F081A(B), 1E11F082A(B), 1P11F020A(B), and

1P11F024A(B) were included in the fire water supply to Division I(II) of containment spray. With the diesel-driven fire pump and manual valves for lining up the fire water supply, it is possible for spray to be available under station blackout conditions, with this SAMA in place.

It was assumed that the existing operator action to initiate spray (OPHEDW2, 1.26E-2) would be applicable to aligning alternate supplies if the normal supply was not available

The results of the quantification with the SAMA in place are as follows:

Parameter	Cutoff	Frequency	Change from Base Case
CDF	1.0E-10	1.6384E-05	0.0 %
LERF	5.0E-11	2.7028E-06	-0.01 %

Phase II SAMA Identifier: P2-8

Title: Use the fire protection system as a backup source for diesel cooling.

A. PRA Assumptions Applicable to Evaluation

N/A

B. Effects on Initiating Events

Emergency diesel generators are standby components and this SAMA has no effect on initiating event frequencies.

C. System Effects to Prevent Core Damage

This SAMA involves providing alternate cooling water to the emergency diesel generators from the fire protection system by connecting a hose from a fire hydrant to a supply header and another hose from the supply header to the affected diesel generator(s). Emergency diesel generators are important to CDF (0.10-0.12 F-V importance) and improving diesel generator availability would reduce core damage frequency.

D. System Effects to Mitigate Core Melt Progression

Emergency diesel generators are very important to LERF (0.60-0.65 F-V importance) and improving diesel generator availability would have a significant impact on LERF.

E. Description of Quantification

To quantify this SAMA, the alternate diesel cooling water supply was included in the Hatch model by adding an OR gate for the alternate supply feeding an AND gate with the normal PSW supply as the other input. The OR gate includes the following basic events:

Basic event	Description	Failure rate assumed
FPS-UNAVAIL	Fire protection system unavailable	0.01
OPERDGFPS	Operator fails to align fire system to DG	0.1

This backup cooling water supply affects only loss of offsite power sequences and requires that the diesel-driven fire pump supply cooling water to the emergency diesel generators. It is assumed that there is adequate instrumentation to allow the operators to diagnose the condition and trip the diesel generator before it is severely damaged, after normal cooling is lost.

Conservative values are assumed, as shown above, for the unavailability of the fire system and for the operator action to align the fire system for diesel cooling, given the potentially difficult time constraints and the nature of the operator action.

In the case of the 1B diesel generator, an alternate supply from the standby service water system or from plant service water (depending on the initial alignment) is already included in the Hatch model. The basic events described above were also added to the subtree for DG 1B as a third supply. Operator actions to align the first backup supply (OPHEDG1BPSW for the normal alignment and OPHEDG1BSSW for the alternate initial alignment) are included in the base model. These operator actions were also included in the OR gates for the fire system supply for the 1B diesel generator, i.e., if operators fail to align the first backup supply they are assumed to fail to align the backup supply from the fire system.

The results of the quantification with SAMA P2-8 in place are as follows:

Parameter	Frequency	Change from Base Case
CDF	1.6356E-05	-0.17 %
LERF	2.6758E-06	-1.01 %

Phase II SAMA Identifier: P2-5A/B

Title: Add Diesel Generator Room and Switchgear Room high temperature alarms.

A. PRA Assumptions Applicable to Evaluation

N/A

B. Effects on Initiating Events

Emergency diesel generators are standby components and this SAMA has no effect on initiating event frequencies.

C. System Effects to Prevent Core Damage

This SAMA involves adding alarms in the control room to indicate high temperature in the diesel generator rooms and in the switchgear rooms, given a loss of HVAC. Procedures would also be changed to direct operators to open access doors and louvers to allow natural circulation. Emergency diesel generators are important to CDF (0.10-0.12 F-V importance) and improving diesel generator availability would reduce core damage frequency.

Switchgear room ventilation is not included in the base Hatch model. Therefore, any changes related to switchgear room ventilation will have no impact on core damage or LERF.

D. System Effects to Mitigate Core Melt Progression

Emergency diesel generators are very important to LERF (0.60-0.65 F-V importance) and improving diesel generator availability would have a significant impact on LERF.

E. Description of Quantification

To quantify this SAMA, the alternate room cooling for the diesel generator rooms was included in the Hatch model by adding an OR gate for the alternate cooling feeding an AND gate with the normal diesel room ventilation as the other input. The OR gate includes a basic event for a temperature switch that would be located in the diesel generator room and an operator action to establish alternate ventilation. The failure rate for the temperature switch failing to operate on demand (8.87E-05) is the same failure rate that appears in the Hatch database for other temperature switches already in the base model. The failure rate of the operator action to align alternate ventilation is conservatively assumed to be 0.1. The basic events added to the Hatch base model are as follows:

Basic event	Description	Failure rate assumed
TSFD1DGS-A	Temperature switch in DG 1A room fails on demand	8.87E-05
TSFD1DGS-B	Temperature switch in DG 1B room fails on demand	8.87E-05
TSFD1DGS-C	Temperature switch in DG 1C room fails on demand	8.87E-05
OPERDGALTVENT	Operator fails to align alternate DG ventilation	0.1

Switchgear room ventilation is not included in the base Hatch model. Therefore, no changes were made to the model, related to switchgear room ventilation, for this SAMA.

The results of the quantification with the SAMA in place are as follows:

Parameter	Frequency	Change from Base Case
CDF	1.6352E-05	-0.2 %
LERF	2.6696E-06	-1.2 %

Phase II SAMA Identifier: P2-15

Title: Provide reliable power to Control Building fans.

A. PRA Assumptions Applicable to Evaluation

The current model assumes that emergency switchgear ventilation is not required during the mission time for emergency switchgear.

B. Effects on Initiating Events

N/A

C. System Effects to Prevent Core Damage

Success criteria for emergency switchgear in the current model does not include the operation of switchgear ventilation.

D. System Effects to Mitigate Core Melt Progression

N/A

E. Description of Quantification

This SAMA concerns modifying the electric power supply to the switchgear room fans so that at least one supply fan and one exhaust fan for each unit are supplied by emergency power. None of the switchgear room HVAC fans are in the current Hatch model. Therefore, there is no impact on core damage frequency or frequency of large early release, given the current models, from the changes described in this SAMA.

Phase II SAMA Identifier: P2-14

Title: Implement internal flood prevention and mitigation enhancements.

A. PRA Assumptions Applicable to Evaluation

N/A

B. Effects on Initiating Events

All of the impact from this SAMA is on the frequency of the two internal flooding initiating events in the Hatch CDF model, FLD24 and FLOOD4. FLD24 is a flood initiated in the reactor building North working area at 158' elevation from the fire protection system, with a frequency of 1.16E-06. FLOOD4 is a flood initiated in the reactor building South working area at 158' elevation from the fire protection system, with a frequency of 9.25E-07. The effect of the SAMA is to reduce the initiating event frequency for these two floods. See Section E below for quantification details.

C. System Effects to Prevent Core Damage

This SAMA concerns adding controls for the three fire pumps in the main control room and revising procedures to allow shutdown of the fire pumps, given a high level alarm in one or more of the reactor building drain sumps, after verifying that a fire does not exist. Reducing the frequency of the two flooding initiators will reduce the frequency of core damage.

Both floods are postulated to propagate to the RHR/CS pump rooms and fail all of the RHR pumps and both of the CS pumps.

D. System Effects to Mitigate Core Melt Progression

The two internal flooding initiating events do not contribute to LERF, so there is no impact on the frequency of large early release from changes in these initiating event frequencies.

E. Description of Quantification

The initiating event frequency for floods FLD24 and FLOOD4 both include an operator action to isolate, from the control room, the floor drains in the reactor building to prevent propagation of flooding from one room to another. The failure rate for this operator action in the base model is 0.05. In light of the added fire pump controls and enhancements to procedures, a reduction by a factor of 2 in the operator failure rate was assumed for quantification of this SAMA. This, in turn, reduced the initiating event frequencies of the two floods by the same factor of 2.

The results of the quantification with the SAMA in place are as follows:

Parameter	Frequency	Change from Base Case
CDF	1.6379E-05	-0.03 %
LERF	2.7030E-06	0.0 %

Phase II SAMA Identifier: P2-11

Title: Improve bus crosstie ability.

B. PRA Assumptions Applicable to Evaluation

N/A

B. Effects on Initiating Events

The conditions described in the SAMA when the crosstie could be used include a loss of offsite power as the initiating event. This SAMA has no impact on the loss of offsite power initiating event frequency.

C. System Effects to Prevent Core Damage

This SAMA involves supplying power to PSW pump C or PSW pump D, normally powered from 4.16kV bus F, by connecting bus F to bus E or bus G, respectively, under the conditions listed in Section E. The purpose is to ensure cooling water supply to the only available diesel generator, when the other two EDGs have failed. Allowing the crosstie would reduce the contribution to CDF from cutsets representing the conditions listed in Section E.

D. System Effects to Mitigate Core Melt Progression

Allowing the crosstie would reduce the contribution to LERF from cutsets representing the conditions listed in Section E.

E. Description of Quantification

Incorporation of the crosstie, for the specific conditions listed in the SAMA, in the fault tree PRA model was not practical. Instead, this SAMA was quantified by adding recovery events to the master recovery file used for quantification of the model. A recovery factor of 0.131 was used for cutsets that matched either of the conditions described below. A value of 0.1 was assumed for the operator action to perform the crosstie and a failure rate of 0.031 was included for hardware failures of the bus supplied by the available EDG.

The conditions where the crosstie could be used are as follows:

Condition 1			Condition 2
LOSP AND EDGs B & C unavailable Mechanical failure of PSW pump A	AND	**OR**	LOSP AND EDGs A & B unavailable AND Mechanical failure of PSW pump B

The results of the quantification with the SAMA in place are as follows:

Parameter	Frequency	Change from Base Case
CDF	1.6384E-05	0.0 %
LERF	2.7017E-06	-0.05 %

The conditional unavailability of the third EDG, given that the other two are unavailable, is so high (approximately 0.5) that there are no cutsets in the base CDF model that are equivalent to either of the two conditions listed above; all of the cutsets with LOSP also include failure of all three EDGs, negating any possible risk reduction from the crosstie.

Phase II SAMA Identifier: P2-13

Title: DC Bus A reliability.

B. PRA Assumptions Applicable to Evaluation

N/A

B. Effects on Initiating Events

N/A

C. System Effects to Prevent Core Damage

N/A

D. System Effects to Mitigate Core Melt Progression

N/A

E. Description of Quantification

Initially, this SAMA suggested improvement of procedures for testing and troubleshooting faults in the DC system. A subsequent determination was made that the existing procedures are adequate and provide sufficient guidance for investigation and troubleshooting faults in the DC system. Therefore, no quantification was performed for this SAMA.

Phase II SAMA Identifier: P2-16

Title: Create a reactor cavity flooding system.

C. PRA Assumptions Applicable to Evaluation

N/A

B. Effects on Initiating Events

N/A

C. System Effects to Prevent Core Damage

N/A

D. System Effects to Mitigate Core Melt Progression

N/A

E. Description of Quantification

This SAMA involves adding a new section of piping, connected to the PSW system piping, to supply PSW for reactor cavity flooding. This would provide immediate cooling of the reactor vessel and enhance debris cooling to reduce core-concrete interaction and improve fission product scrubbing. The estimated cost of this SAMA exceeded the cost limit established for the SAMAs and it was eliminated from further consideration. No quantification was performed for this SAMA.