



Gary R. Peterson
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July 31, 2000

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Subject: Duke Energy Corporation
Catawba Nuclear Station, Units 1 and 2
Docket Numbers 50-413 and 50-414
Request for Additional Information Regarding
Proposed Technical Specifications Amendment
Technical Specification 3.5.2, Emergency Core
Cooling System, 3.6.6, Containment Spray System,
3.6.17, Containment Valve Injection Water System,
3.7.5, Auxiliary Feedwater System, 3.7.7,
Component Cooling Water System, 3.7.8, Nuclear
Service Water System, 3.7.10, Control Room Area
Ventilation System, 3.7.12, Auxiliary Building
Filtered Ventilation Exhaust System, & 3.8.1, AC
Sources - Operating

Attached is the response to the request for additional information discussed during a conference call on July 20, 2000. Discussions were held with NRC staff members and Catawba personnel concerning the subject technical specification amendment. Several questions were posed about the amendment and the answers to these questions were the subject of a conference call on July 20, 2000. The questions concerned details on the PRA results and input assumptions for the PRA calculations. The call was productive and your staff requested a formal answer based on the discussions during the conference call.

The conclusions reached in the original no significant hazards evaluation have not been changed based on the information in this letter.

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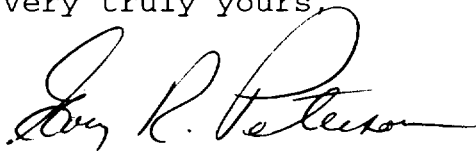
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The response provided includes two additional compensatory actions that are discussed in the answer to questions 3 and 4.

Pursuant to 10 CFR 50.91, a copy of this proposed amendment is being sent to the appropriate State of South Carolina official.

Inquiries on this matter should be directed to R. D. Hart at (803) 831-3622.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Gary R. Peterson".

Gary R. Peterson

RDH/s

Attachments

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Gary R. Peterson, being duly sworn, states that he is Site Vice President of Duke Energy Corporation; that he is authorized on the part of said corporation to sign and file with the Nuclear Regulatory Commission this request for additional information for an amendment to the Catawba Nuclear Station Facility Operating License Numbers NPF-35 and NPF-52 and Technical Specifications; and that all statements and matters set forth herein are true and correct to the best of his knowledge.



Gary R. Peterson, Site Vice President

Subscribed and sworn to me:

7/31/00
Date


Notary Public

My commission expires:

MY COMMISSION EXPIRES
NOVEMBER 14, 2004

Date

SEAL

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xc (with attachments):

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Catawba response to NRC Questions on Nuclear Service Water Temporary Technical Specification Change

- 1. List of dominant contributing sequences to the estimated increase in CDF during service water piping cleanup.**
- 2. List of dominant contributing failures for each of the dominant contributing sequences.**

Response:

The core damage frequency (CDF) results developed for the Technical Specification (TS) submittal on May 25, 2000 were developed with the current model for the Catawba probabilistic risk assessment (PRA), revision 2a. Since that time, the PRA has been updated with revision 2b. Four tables are attached to answer questions 1 & 2. They are described as follows:

- Table 1 is a summary by initiator of the annual core damage probability as calculated using the revision 2a model for the case of a loop of nuclear service water out of service.
- Table 2 is the top 100 cut sets from the annual core damage probability as calculated using the revision 2a model for the case of a loop of nuclear service water out of service.
- Table 3 is a summary by initiator of the 9 day allowed outage time extension core damage probability as calculated using the revision 2b model for the case of a loop of nuclear service water out of service.
- Table 4 is the top 100 cut sets from the 9 day allowed outage time extension core damage probability as calculated using the revision 2b model for the case of a loop of nuclear service water out of service.

3. List monitoring method(s) and compensatory measures in place for each dominant contributing failure/sequence. How would such monitoring and compensatory measures impact the dominant contributing sequences?

4. Was the impact of monitoring and compensatory measures taken into account in estimating CDF and LERF increases reported in pages 3-22 and 3-23? If the answer is no, what would a conservative estimate of risk increases be when the impact of such monitoring and compensatory measures are considered?

Response:

The compensatory measures in place that are relevant to the PRA sequences are assuring that other plant equipment is not taken out of service while the nuclear service water loop is out of service. This includes not only the redundant train of safety-related systems, but also the SSF and the turbine driven auxiliary feedwater pump. The sequence results are dominated by random failures of the turbine driven pump, the redundant diesel generator and other components in the operable train.

The maintenance events related to components associated with the operable train of Nuclear Service Water were removed from the results, thus no routine maintenance on that train of equipment. The SSF and the turbine driven auxiliary feedwater pump were also assumed to be available.

The CDF results developed for the temporary TS change request was developed with the Catawba PRA model, revision 2a that was current at the time. Since that time the Catawba PRA model has been revised. The revisions were based on revisions to the Component Cooling Water system model in the PRA. The success criteria in the original model were overly conservative and a best estimate success definition was incorporated in revision 2b. The revision 2b model results also reflect some changes to the nuclear service water system to incorporate current plant operating conditions. Also credit has been taken for refilling the refueling water storage tank when sump recirculation is not available for some small LOCAs.

Using revision 2b of the Catawba PRA model, it is estimated that the non-seismic CDF is reduced to approximately $7.9 \text{ E-}06$. This represents a reduction of approximately 18% from

the revision 2a estimate of $9.6 \text{ E-}06$ discussed on page 3-22 of the May 25, 2000 TS submittal.

The turbine building flood is the dominant contributor to the results. A large fraction of the turbine building flooding events in the industry has occurred during periods where the system that originated the flood was open to the building for maintenance or inspection. This often left a single isolation valve as the boundary to prevent flooding. Inadvertent opening of the valve then resulted in flooding. The Catawba PRA is modeled such that a turbine building flood event in either unit's turbine building results in flooding both turbine buildings. During the two 12-day periods the condenser circulating system on Unit 1 (shutdown unit) will be drained and isolated. This will minimize its potential for being a contributor to a turbine building flood. For Unit 2, the condenser circulating system will be inservice and no major maintenance or testing shall be planned. This will help minimize any potential challenges to this system.

The turbine building flood initiator results are not symmetric with respect to the loop of nuclear service water out of service. This is because the "A" train centrifugal charging pump has been provided with backup cooling from the drinking water system. This backup supply will be protected during the two 12-day outages and no maintenance will be performed that would make this backup supply unavailable.

Our May 25, 2000 submittal discussed another separate plant system that is available to allow a limited means to shutdown the plant independent from the control room and auxiliary shutdown panels (pages 3-20 & 3-21). This system is the standby shutdown facility (SSF). The PRA model does include the SSF. The SSF requires manual operator action and the failure of this manual operator action to occur is accounted for in the failure probabilities. An action taken by Catawba to reduce this likelihood is to station an individual in the SSF continuously. This individual is trained on how to operate the SSF diesel generator and the standby makeup pump to establish an alternate method of reactor coolant pump seal injection. The stationing of an individual is not reflected in the current model of the Catawba PRA. This would have some benefit, though small, on the estimated CDF for the nuclear service water 12-day outage evaluation.

The following table provides a description of system designations that are used in Tables 1, 2, 3, & 4.

System Name	System Identifier	Comments
Auxiliary Feedwater	CA	
Main Feedwater	CF	
Component Cooling Water	KC	Closed loop cooling system
Reactor Coolant	NC	
Residual Heat Removal	ND	Low head safety injection function
Safety Injection	NI	Intermediate head safety injection function
Chemical & Volume Control	NV	Normal charging and high head safety injection function
Condenser Cooling	RC	Flood source
Nuclear Service Water	RN	Ultimate heat sink
Standby Shutdown Facility	SSF	Alternate source of RCP seal injection
Drinking Water	YD	

Table 1
Initiator Summary Report
PRA Revision 2a
Annual Core Damage Probability

Name	Prob	%	Description
SL	9.50E-05	24.90%	Small LOCA
FTB	8.46E-05	22.20%	Turbine Building Flood Initiating Event
T9	7.78E-05	20.40%	Loss Of RN
T13	6.48E-05	17.00%	Inadvertent SS Actuation
T6	1.17E-05	3.10%	Secondary Line Break Inside Containment
T3	1.05E-05	2.80%	LOOP
TORNSW	9.61E-06	2.50%	Tornado Causes LOOP
T1	7.98E-06	2.10%	Reactor Trip
LL	4.27E-06	1.10%	Large LOCA
ML	3.74E-06	1.00%	Medium LOCA
TORNF4	2.39E-06	0.60%	Plant Struck By F4 Or F5 Tornado
T4	1.61E-06	0.40%	Loss Of Main Feedwater
FACTB	1.53E-06	0.40%	All Consuming TB Fire Initiating Event
T2	1.02E-06	0.30%	Loss Of Load
T11	1.02E-06	0.30%	Loss Of 4160 V Essential Bus
RPV	1.00E-06	0.30%	RV Rupture
FDG	8.79E-07	0.20%	Fire Causes A Loss Of The A Train Diesel
T12	8.35E-07	0.20%	Loss Of Instrument Air
T10	2.65E-07	0.10%	Loss Of KC
FKC	2.25E-07	0.10%	KC Power Cable Initiating Event
ISLOCA	2.09E-07	0.10%	ISLOCA Occurs
ATWS	1.52E-07	0.00%	ATWS
FSVCBLDG	1.11E-07	0.00%	Service Building Fire Initiating Event
T14	5.80E-08	0.00%	Loss of Vital Instrumentation and Control
FCBLR	3.72E-08	0.00%	Cable Room Fire Causes A Loss Of Component Cooling Water
Y	2.26E-08	0.00%	SGTR
CAPRFLD	1.21E-08	0.00%	Aux. Shutdown Panel Lost Due To Flood
T7	0.00E+00	0.00%	FDW Line Break Outside Containment
T8	0.00E+00	0.00%	Steamline Break Outside Containment
FETB	0.00E+00	0.00%	ETB Fire Initiating Event
FCR	0.00E+00	0.00%	Control Room Fire Causes A Loss Of KC
Total =			3.81E-04

Table 2 - Revision 2a top 100 cut sets

Cutsets with Descriptive			Total frequency of top 100		2.8E-04	
Freq			3.81E-04		Percent of total	
per year					73%	
#	Inputs	Description	Rate	Exposure	Event Prob	Probability
1	T9	Loss Of RN		1.2E-02	1.2E-02	4.8E-05
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	TCF0001RHE	Failure to Restore Main Feedwater After Plant Trip		5.0E-02	5.0E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
2	T13	Inadvertent SS Actuation		8.1E-02	8.1E-02	1.9E-05
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	KKC01A2LHE	Latent Human Error Fails KC 1A2 Pump Train		3.0E-03	3.0E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
3	FTB	Turbine Building Flood Initiating Event		2.8E-03	2.8E-03	1.3E-05
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	NNVSSFBDHE	Failure to Initiate SSF Seal Injection - LOOP Event		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
4	SL	Small LOCA		3.1E-03	3.1E-03	1.1E-05
	HND028AMVO	Motor Operated Valve 1ND28A Fails to Open	3.5E-03	1.0E+00	3.5E-03	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
5	SL	Small LOCA		3.1E-03	3.1E-03	1.1E-05
	LND025AMVO	Motor Operated Valve 1ND25A Fails to Open	3.5E-03	1.0E+00	3.5E-03	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
6	SL	Small LOCA		3.1E-03	3.1E-03	1.1E-05
	LNI185AMVO	Motor Operated Valve 1NI185A Fails to Open	3.5E-03	1.0E+00	3.5E-03	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
7	SL	Small LOCA		3.1E-03	3.1E-03	9.8E-06
	TRECIRCDHE	Operators Fail to Establish High Pressure Recirculation		3.2E-03	3.2E-03	
8	FTB	Turbine Building Flood Initiating Event		2.8E-03	2.8E-03	9.7E-06
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
9	SL	Small LOCA		3.1E-03	3.1E-03	9.2E-06
	KKC01A2LHE	Latent Human Error Fails KC 1A2 Pump Train		3.0E-03	3.0E-03	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
10	SL	Small LOCA		3.1E-03	3.1E-03	9.2E-06
	LNDTR1ALHE	Train 1A Failure Due to Latent Human Error		3.0E-03	3.0E-03	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
11	SL	Small LOCA		3.1E-03	3.1E-03	6.2E-06
	LND001ALPR	ND Pump 1A Fails to Run	8.4E-05	2.4E+01	2.0E-03	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	

Table 2 - Revision 2a top 100 cut sets

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
12	T13	Inadvertent SS Actuation		8.1E-02	8.1E-02	6.1E-06
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	KKC01A2PPS	KC Pump 1A2 Fails to Start	9.7E-04	1.0E+00	9.7E-04	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
13	T9	Loss Of RN		1.2E-02	1.2E-02	5.4E-06
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	TCF0001RHE	Failure to Restore Main Feedwater After Plant Trip		5.0E-02	5.0E-02	
	TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
14	FTB	Turbine Building Flood Initiating Event		2.8E-03	2.8E-03	5.0E-06
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	NSS00DGSDR	SSF Diesel Generator Fails to Run	1.7E-03	2.4E+01	4.0E-02	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
15	SL	Small LOCA		3.1E-03	3.1E-03	4.9E-06
	LND001ALPS	ND Pump 1A Fails to Start	1.6E-03	1.0E+00	1.6E-03	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
16	T9	Loss Of RN		1.2E-02	1.2E-02	4.8E-06
	HYDBACKDHE	Operators Fail to Establish Backup Cooling from YD		1.3E-02	1.3E-02	
	NNVSSFADHE	Failure to Initiate SSF Seal Injection - Non LOOP Event		3.0E-02	3.0E-02	
	-PACBOFTDEX	Blackout Following Trip		1.0E-03	1.0E-03	
17	SL	Small LOCA		3.1E-03	3.1E-03	4.5E-06
	LND5040FTK	ND Pump 1A Recirculation Flow Transmitter 5040 Fails	1.3E-06	1.1E+03	1.5E-03	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
18	T13	Inadvertent SS Actuation		8.1E-02	8.1E-02	4.3E-06
	DAC1EIAIVF	120 V ac Vital Power Inverter 1EIA Fails	2.9E-05	2.4E+01	6.8E-04	
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
19	SL	Small LOCA		3.1E-03	3.1E-03	3.0E-06
	KKC01A2PPS	KC Pump 1A2 Fails to Start	9.7E-04	1.0E+00	9.7E-04	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
20	T13	Inadvertent SS Actuation		8.1E-02	8.1E-02	2.9E-06
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	KKC648ADEX	Slave Relay K648A Failure to Operate		4.2E-03	4.2E-03	
	TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
21	T13	Inadvertent SS Actuation		8.1E-02	8.1E-02	2.9E-06
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	KKC649ADEX	Slave Relay K649A Failure to Operate		4.2E-03	4.2E-03	
	TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	

Table 2 - Revision 2a top 100 cut sets

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
22	T13	Inadvertent SS Actuation		8.1E-02	8.1E-02	2.4E-06
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	KKC01A1PPR	KC Pump 1A1 Fails to Run	1.6E-05	2.4E+01	3.8E-04	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
23	T13	Inadvertent SS Actuation		8.1E-02	8.1E-02	2.4E-06
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	KKC01A2PPR	KC Pump 1A2 Fails to Run	1.6E-05	2.4E+01	3.8E-04	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
24	T1	Reactor Trip		1.9E+00	1.9E+00	2.2E-06
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	NNVSSFBDHE	Failure to Initiate SSF Seal Injection - LOOP Event		1.0E-01	1.0E-01	
	PACBOFTDEX	Blackout Following Trip		1.0E-03	1.0E-03	
		This Is A Surrogate Event To Approximate A Failure To Recover Power		6.0E-02	6.0E-02	
	PACRECSDEX			6.0E-02	6.0E-02	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
		Failure to Cross Connect Offsite Power Between Units (Unit 2 Failure Included).		2.6E-01	2.6E-01	
25	T13	Inadvertent SS Actuation		8.1E-02	8.1E-02	2.1E-06
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	KKC01A2LHE	Latent Human Error Fails KC 1A2 Pump Train		3.0E-03	3.0E-03	
	TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
26	FTB	Turbine Building Flood Initiating Event		2.8E-03	2.8E-03	2.1E-06
	JDG001ADGS	Diesel Generator 1A Fails To Start	7.4E-03	1.0E+00	7.4E-03	
	NNVSSFBDHE	Failure to Initiate SSF Seal Injection - LOOP Event		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
27	T9	Loss Of RN		1.2E-02	1.2E-02	1.7E-06
	FSA00CVAVT	Control Valve 1SACV Transfers Position	2.7E-06	1.1E+03	3.1E-03	
	TCF0001RHE	Failure to Restore Main Feedwater After Plant Trip		5.0E-02	5.0E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
28	T9	Loss Of RN		1.2E-02	1.2E-02	1.7E-06
	FSA00SVAVT	Stop Valve 1SASV Transfers Position	2.7E-06	1.1E+03	3.1E-03	
	TCF0001RHE	Failure to Restore Main Feedwater After Plant Trip		5.0E-02	5.0E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
29	T9	Loss Of RN		1.2E-02	1.2E-02	1.7E-06
	FWL0848AVT	Air Operated Valve 1WL848 Transfers Position	2.7E-06	1.1E+03	3.1E-03	
	TCF0001RHE	Failure to Restore Main Feedwater After Plant Trip		5.0E-02	5.0E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	

Table 2 - Revision 2a top 100 cut sets

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
30	TORNSW	Tornado Causes LOOP		3.8E-04	3.8E-04	1.7E-06
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	NNVSSFBDHE	Failure to Initiate SSF Seal Injection - LOOP Event		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
31	T9	Loss Of RN		1.2E-02	1.2E-02	1.7E-06
	FCA0TDPLHE	Latent Human Error Fails Turbine Driven Pump		3.0E-03	3.0E-03	
	TCF0001RHE	Failure to Restore Main Feedwater After Plant Trip		5.0E-02	5.0E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
32	T9	Loss Of RN		1.2E-02	1.2E-02	1.7E-06
	FWLSUMPLHE	Latent Human Error Fails Sump Pumps		3.0E-03	3.0E-03	
	TCF0001RHE	Failure to Restore Main Feedwater After Plant Trip		5.0E-02	5.0E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
33	T6	Secondary Line Break Inside Containment		2.1E-03	2.1E-03	1.6E-06
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	TFBLD01DHE	Operators Fail to Establish Feed and Bleed Cooling		1.0E-02	1.0E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
34	FTB	Turbine Building Flood Initiating Event		2.8E-03	2.8E-03	1.6E-06
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	JDG001ADGS	Diesel Generator 1A Fails To Start	7.4E-03	1.0E+00	7.4E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
35	T9	Loss Of RN		1.2E-02	1.2E-02	1.4E-06
	FCA0TDPTPS	CA TDP Fails to Start	2.5E-03	1.0E+00	2.5E-03	
	TCF0001RHE	Failure to Restore Main Feedwater After Plant Trip		5.0E-02	5.0E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
36	TORNSW	Tornado Causes LOOP		3.8E-04	3.8E-04	1.3E-06
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
37	T6	Secondary Line Break Inside Containment		2.1E-03	2.1E-03	1.3E-06
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	RVIPORVDHE	Operators Fail to Restore VI to PORVs or Align Backup Nitrogen		8.0E-03	8.0E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
38	SL	Small LOCA		3.1E-03	3.1E-03	1.3E-06
	KKC648ADEX	Slave Relay K648A Failure to Operate		4.2E-03	4.2E-03	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
	EKSFAS0DHE	Operators Fail To Respond to ESFAS Relay Failure		1.0E-01	1.0E-01	

Table 2 - Revision 2a top 100 cut sets

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
39	SL	Small LOCA		3.1E-03	3.1E-03	1.3E-06
	KKC649ADEX	Slave Relay K649A Failure to Operate		4.2E-03	4.2E-03	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
	EKSFSAS0DHE	Operators Fail To Respond to ESFAS Relay Failure		1.0E-01	1.0E-01	
40	SL	Small LOCA		3.1E-03	3.1E-03	1.3E-06
	LFW027AMVT	Motor Operated Valve 1FW27A Transfers Closed	3.7E-07	1.1E+03	4.2E-04	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
41	SL	Small LOCA		3.1E-03	3.1E-03	1.3E-06
	LN1185AMVT	Motor Operated Valve 1N1185A Transfers Open	3.7E-07	1.1E+03	4.2E-04	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
42	T13	Inadvertent SS Actuation		8.1E-02	8.1E-02	1.2E-06
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	KKC0008CVO	Check Valve 1KC8 Fails to Open	1.9E-04	1.0E+00	1.9E-04	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
43	SL	Small LOCA		3.1E-03	3.1E-03	1.2E-06
	KKC01A1PPR	KC Pump 1A1 Fails to Run	1.6E-05	2.4E+01	3.8E-04	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
44	SL	Small LOCA		3.1E-03	3.1E-03	1.2E-06
	KKC01A2PPR	KC Pump 1A2 Fails to Run	1.6E-05	2.4E+01	3.8E-04	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
45	FTB	Turbine Building Flood Initiating Event		2.8E-03	2.8E-03	1.1E-06
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
46	RPV	RV Rupture		1.0E-06	1.0E-06	1.0E-06
	RPVFAILRHE	Failure To Prevent Core Damage Following Reactor Vessel Rupture		1.0E+00	1.0E+00	
47	FTB	Turbine Building Flood Initiating Event		2.8E-03	2.8E-03	9.8E-07
	JRN232AMVO	Motor Operated Valve 1RN232A Fails to Open	3.5E-03	1.0E+00	3.5E-03	
	NNVSSFBDE	Failure to Initiate SSF Seal Injection - LOOP Event		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
48	FTB	Turbine Building Flood Initiating Event		2.8E-03	2.8E-03	9.8E-07
	JVD01A1FNS	Fan 1A1 Fails To Start	3.5E-03	1.0E+00	3.5E-03	
	NNVSSFBDE	Failure to Initiate SSF Seal Injection - LOOP Event		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
49	FTB	Turbine Building Flood Initiating Event		2.8E-03	2.8E-03	9.8E-07
	JVD01A2FNS	Fan 1A2 Fails To Start	3.5E-03	1.0E+00	3.5E-03	
	NNVSSFBDE	Failure to Initiate SSF Seal Injection - LOOP Event		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	

Table 2 - Revision 2a top 100 cut sets

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
50	FTB	Turbine Building Flood Initiating Event		2.8E-03	2.8E-03	9.8E-07
	JVDDSF1DMO	Damper 1-DSF 1D Fails to Open	3.5E-03	1.0E+00	3.5E-03	
	NNVSSFBDE	Failure to Initiate SSF Seal Injection - LOOP Event		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
51	FTB	Turbine Building Flood Initiating Event		2.8E-03	2.8E-03	9.8E-07
	JVDDSF3DMO	Damper 1-DSF D3 Fails to Open	3.5E-03	1.0E+00	3.5E-03	
	NNVSSFBDE	Failure to Initiate SSF Seal Injection - LOOP Event		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
52	T9	Loss Of RN		1.2E-02	1.2E-02	9.6E-07
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	PACBOFTDEX	Blackout Following Trip		1.0E-03	1.0E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
53	FTB	Turbine Building Flood Initiating Event		2.8E-03	2.8E-03	9.1E-07
	JDG1RUNCOM	Common Cause Failure of Diesel Generator to Run		3.3E-03	3.3E-03	
	NNVSSFBDE	Failure to Initiate SSF Seal Injection - LOOP Event		1.0E-01	1.0E-01	
54	FTB	Turbine Building Flood Initiating Event		2.8E-03	2.8E-03	9.1E-07
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	NDCSDB2DEX	Battery SDSB2 Depletes		1.0E+00	1.0E+00	
	NDCSDC2BCF	Battery Charger SDSC2 Fails	1.8E-05	4.0E+02	7.3E-03	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
55	FTB	Turbine Building Flood Initiating Event		2.8E-03	2.8E-03	9.1E-07
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	NSS24VDBCF	24 V Charger Failure Prior to Event Drains SSF DG Battery	1.8E-05	4.0E+02	7.3E-03	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
56	FTB	Turbine Building Flood Initiating Event		2.8E-03	2.8E-03	9.0E-07
	DDC1EBABYF	125 V dc Vital I & C Battery 1EBA Fails on Demand	3.2E-03	1.0E+00	3.2E-03	
	NNVSSFBDE	Failure to Initiate SSF Seal Injection - LOOP Event		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
57	FTB	Turbine Building Flood Initiating Event		2.8E-03	2.8E-03	9.0E-07
	JDG00BABYF	Battery 1DGBA Fails	3.2E-03	1.0E+00	3.2E-03	
	NNVSSFBDE	Failure to Initiate SSF Seal Injection - LOOP Event		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
58	T1	Reactor Trip		1.9E+00	1.9E+00	8.9E-07
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	NSS00DGSDR	SSF Diesel Generator Fails to Run	1.7E-03	2.4E+01	4.0E-02	
	PACBOFTDEX	Blackout Following Trip		1.0E-03	1.0E-03	
		This Is A Surrogate Event To Approximate A Failure To Recover				
	PACRECSDEX	Power		6.0E-02	6.0E-02	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
		Failure to Cross Connect Offsite Power Between Units (Unit 2				
	POPXCONDHE	Failure Included).		2.6E-01	2.6E-01	

Table 2 - Revision 2a top 100 cut sets

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
59	T3	LOOP		3.6E-02	3.6E-02	8.5E-07
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	NNVSSFBDEH	Failure to Initiate SSF Seal Injection - LOOP Event		1.0E-01	1.0E-01	
		This Is A Surrogate Event To Approximate A Failure To Recover				
	PACRECSDEX	Power		6.0E-02	6.0E-02	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
		Failure to Recover LOOP (DG S Fail +DG R Fail, SSHR Avail, RCP				
	AC01DGRRHE	Seal LOCA)		2.1E-02	2.1E-02	
		Failure to Cross Connect Offsite Power Between Units (Unit 2				
	POPXCONDHE	Fallure Included).		2.6E-01	2.6E-01	
60	FTB	Turbine Building Flood Initiating Event		2.8E-03	2.8E-03	8.4E-07
	JDG001ALHE	Latent Human Error on Diesel Generator 1A		3.0E-03	3.0E-03	
	NNVSSFBDEH	Failure to Initiate SSF Seal Injection - LOOP Event		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
61	FTB	Turbine Building Flood Initiating Event		2.8E-03	2.8E-03	8.4E-07
	JDG001ADGS	Diesel Generator 1A Fails To Start	7.4E-03	1.0E+00	7.4E-03	
	NSS00DGSDR	SSF Diesel Generator Fails to Run	1.7E-03	2.4E+01	4.0E-02	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
62	FTB	Turbine Building Flood Initiating Event		2.8E-03	2.8E-03	7.8E-07
	JFD0022SVO	Solenoid Valve 1FD22 Fails to Open	2.8E-03	1.0E+00	2.8E-03	
	NNVSSFBDEH	Failure to Initiate SSF Seal Injection - LOOP Event		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
63	FTB	Turbine Building Flood Initiating Event		2.8E-03	2.8E-03	7.6E-07
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	JRN232AMVO	Motor Operated Valve 1RN232A Fails to Open	3.5E-03	1.0E+00	3.5E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
64	FTB	Turbine Building Flood Initiating Event		2.8E-03	2.8E-03	7.6E-07
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	JVD01A1FNS	Fan 1A1 Fails To Start	3.5E-03	1.0E+00	3.5E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
65	FTB	Turbine Building Flood Initiating Event		2.8E-03	2.8E-03	7.6E-07
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	JVD01A2FNS	Fan 1A2 Fails To Start	3.5E-03	1.0E+00	3.5E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
66	FTB	Turbine Building Flood Initiating Event		2.8E-03	2.8E-03	7.6E-07
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	JVDDSF1DMO	Damper 1-DSF 1D Fails to Open	3.5E-03	1.0E+00	3.5E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	

Table 2 - Revision 2a top 100 cut sets

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	

Table 2 - Revision 2a top 100 cut sets

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
67	FTB	Turbine Building Flood Initiating Event		2.8E-03	2.8E-03	7.6E-07
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	JVDDSF3DMO	Damper 1-DSF D3 Fails to Open	3.5E-03	1.0E+00	3.5E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
68	FACTB	All Consuming TB Fire Initiating Event		1.7E-05	1.7E-05	7.6E-07
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
69	T3	LOOP		3.6E-02	3.6E-02	7.2E-07
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
		This Is A Surrogate Event To Approximate A Failure To Recover Power		6.0E-02	6.0E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
	ACB2DGRHE	Failure to Recover LOOP (Double DG R Fail, No SSHR, No F & B)		2.2E-02	2.2E-02	
		Failure to Cross Connect Offsite Power Between Units (Unit 2 Fallure Included).		2.6E-01	2.6E-01	
70	FTB	Turbine Building Flood Initiating Event		2.8E-03	2.8E-03	7.1E-07
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	JDG1RUNCOM	Common Cause Failure of Diesel Generator to Run		3.3E-03	3.3E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
71	FTB	Turbine Building Flood Initiating Event		2.8E-03	2.8E-03	7.0E-07
	DDC1EBABYF	125 V dc Vital I & C Battery 1EBA Fails on Demand	3.2E-03	1.0E+00	3.2E-03	
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
72	FTB	Turbine Building Flood Initiating Event		2.8E-03	2.8E-03	7.0E-07
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	JDG00BABYF	Battery 1DGBA Fails	3.2E-03	1.0E+00	3.2E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
73	TORNSW	Tornado Causes LOOP		3.8E-04	3.8E-04	6.8E-07
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	NSS00DGSDR	SSF Diesel Generator Fails to Run	1.7E-03	2.4E+01	4.0E-02	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
74	T13	Inadvertent SS Actuation		8.1E-02	8.1E-02	6.8E-07
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	KKC01A2PPS	KC Pump 1A2 Fails to Start	9.7E-04	1.0E+00	9.7E-04	
	TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	

Table 2 - Revision 2a top 100 cut sets

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
75	FTB	Turbine Building Flood Initiating Event		2.8E-03	2.8E-03	6.8E-07
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	NSS00DGSDS	SSF Diesel Generator Fails to Start	5.4E-03	1.0E+00	5.4E-03	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
76	T13	Inadvertent SS Actuation		8.1E-02	8.1E-02	6.7E-07
	FSA00CVAVT	Control Valve 1SACV Transfers Position	2.7E-06	1.1E+03	3.1E-03	
	KKC01A2LHE	Latent Human Error Fails KC 1A2 Pump Train		3.0E-03	3.0E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
77	T13	Inadvertent SS Actuation		8.1E-02	8.1E-02	6.7E-07
	FSA00SVAVT	Stop Valve 1SASV Transfers Position	2.7E-06	1.1E+03	3.1E-03	
	KKC01A2LHE	Latent Human Error Fails KC 1A2 Pump Train		3.0E-03	3.0E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
78	T13	Inadvertent SS Actuation		8.1E-02	8.1E-02	6.7E-07
	FWL0848AVT	Air Operated Valve 1WL848 Transfers Position	2.7E-06	1.1E+03	3.1E-03	
	KKC01A2LHE	Latent Human Error Fails KC 1A2 Pump Train		3.0E-03	3.0E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
79	T13	Inadvertent SS Actuation		8.1E-02	8.1E-02	6.6E-07
	FCA0TDPLHE	Latent Human Error Fails Turbine Driven Pump		3.0E-03	3.0E-03	
	KKC01A2LHE	Latent Human Error Fails KC 1A2 Pump Train		3.0E-03	3.0E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
80	T13	Inadvertent SS Actuation		8.1E-02	8.1E-02	6.6E-07
	FWLSUMPLHE	Latent Human Error Fails Sump Pumps		3.0E-03	3.0E-03	
	KKC01A2LHE	Latent Human Error Fails KC 1A2 Pump Train		3.0E-03	3.0E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
81	FTB	Turbine Building Flood Initiating Event		2.8E-03	2.8E-03	6.5E-07
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	JDG001ALHE	Latent Human Error on Diesel Generator 1A		3.0E-03	3.0E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
82	FTB	Turbine Building Flood Initiating Event		2.8E-03	2.8E-03	6.1E-07
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	JFD0022SVO	Solenoid Valve 1FD22 Fails to Open	2.8E-03	1.0E+00	2.8E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
83	SL	Small LOCA		3.1E-03	3.1E-03	5.8E-07
	HNV0813CVO	Check Valve 1NV813 Fails to Open	1.9E-04	1.0E+00	1.9E-04	

Table 2 - Revision 2a top 100 cut sets

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	

Table 2 - Revision 2a top 100 cut sets

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
84	SL	Small LOCA		3.1E-03	3.1E-03	5.8E-07
	KKC0008CVO	Check Valve 1KC8 Fails to Open	1.9E-04	1.0E+00	1.9E-04	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
85	SL	Small LOCA		3.1E-03	3.1E-03	5.8E-07
	LFW0028CVO	Check Valve 1FW28 Fails to Open	1.9E-04	1.0E+00	1.9E-04	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
86	SL	Small LOCA		3.1E-03	3.1E-03	5.8E-07
	LND0010CVO	Check Valve 1ND10 Fails to Open	1.9E-04	1.0E+00	1.9E-04	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
87	T6	Secondary Line Break Inside Containment		2.1E-03	2.1E-03	5.7E-07
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	HND028AMVO	Motor Operated Valve 1ND28A Fails to Open	3.5E-03	1.0E+00	3.5E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
88	T6	Secondary Line Break Inside Containment		2.1E-03	2.1E-03	5.7E-07
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	LKC056AMVO	Motor Operated Valve 1KC56A to ND Hx 1A Fails to Open	3.5E-03	1.0E+00	3.5E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
89	T6	Secondary Line Break Inside Containment		2.1E-03	2.1E-03	5.7E-07
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	LND025AMVO	Motor Operated Valve 1ND25A Fails to Open	3.5E-03	1.0E+00	3.5E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
90	T6	Secondary Line Break Inside Containment		2.1E-03	2.1E-03	5.7E-07
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	LNI185AMVO	Motor Operated Valve 1NI185A Fails to Open	3.5E-03	1.0E+00	3.5E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
91	T4	Loss Of Main Feedwater		4.9E-01	4.9E-01	5.7E-07
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	NNVSSFBDHE	Failure to Initiate SSF Seal Injection - LOOP Event		1.0E-01	1.0E-01	
	PACBOFTDEX	Blackout Following Trip		1.0E-03	1.0E-03	
		This Is A Surrogate Event To Approximate A Failure To Recover				
	PACRECSDEX	Power		6.0E-02	6.0E-02	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
		Failure to Cross Connect Offsite Power Between Units (Unit 2				
	POPXCONDHE	Failure Included).		2.6E-01	2.6E-01	
92	T9	Loss Of RN		1.2E-02	1.2E-02	5.6E-07
	HYDBACKDHE	Operators Fail to Establish Backup Cooling from YD		1.3E-02	1.3E-02	
	NNV0865MVO	Motor-Operated Valve 1NV865 Fails to Open	3.5E-03	1.0E+00	3.5E-03	

Table 2 - Revision 2a top 100 cut sets

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
93	T9	Loss Of RN		1.2E-02	1.2E-02	5.6E-07
	HYDBACKDHE	Operators Fail to Establish Backup Cooling from YD		1.3E-02	1.3E-02	
	NNV0872MVO	Motor-Operated Valve 1NV872A Fails to Open	3.5E-03	1.0E+00	3.5E-03	
94	FTB	Turbine Building Flood Initiating Event		2.8E-03	2.8E-03	5.6E-07
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	JDG001BDGR	Diesel Generator 1B Fails To Run	1.9E-03	2.4E+01	4.5E-02	
	NNVSSFBDE	Failure to Initiate SSF Seal Injection - LOOP Event		1.0E-01	1.0E-01	
95	FTB	Turbine Building Flood Initiating Event		2.8E-03	2.8E-03	5.5E-07
	JFD5070LTK	Level Transmitter 1FDLS5070 Fails High	5.0E-06	4.0E+02	2.0E-03	
	NNVSSFBDE	Failure to Initiate SSF Seal Injection - LOOP Event		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
96	T13	Inadvertent SS Actuation		8.1E-02	8.1E-02	5.4E-07
	FCA0TDPTPS	CA TDP Fails to Start	2.5E-03	1.0E+00	2.5E-03	
	KKC01A2LHE	Latent Human Error Fails KC 1A2 Pump Train		3.0E-03	3.0E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
97	T2	Loss Of Load		4.6E-01	4.6E-01	5.3E-07
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	NNVSSFBDE	Failure to Initiate SSF Seal Injection - LOOP Event		1.0E-01	1.0E-01	
	PACBOFTDEX	Blackout Following Trip		1.0E-03	1.0E-03	
		This Is A Surrogate Event To Approximate A Failure To Recover				
	PACRECSDEX	Power		6.0E-02	6.0E-02	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
		Failure to Cross Connect Offsite Power Between Units (Unit 2				
	POPXCONDHE	Failure Included).		2.6E-01	2.6E-01	
98	T13	Inadvertent SS Actuation		8.1E-02	8.1E-02	5.2E-07
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	KKC0007VVT	Locked Open Manual Valve 1KC7 Transfers Position	8.0E-08	1.0E+03	8.3E-05	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
99	T13	Inadvertent SS Actuation		8.1E-02	8.1E-02	5.2E-07
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	KKC0009VVT	Locked Open Manual Valve 1KC9 Transfers Position	8.0E-08	1.0E+03	8.3E-05	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
100	T6	Secondary Line Break Inside Containment		2.1E-03	2.1E-03	5.2E-07
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	TRECIRCDHE	Operators Fail to Establish High Pressure Recirculation		3.2E-03	3.2E-03	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	

Table 3
Initiator Summary Report
PRA Revision 2b
9 Day AOT Extension

Name	Prob	%	Description
FTB	2.84E-06	35.90%	Turbine Building Flood Initiating Event
T11	1.45E-06	18.40%	Loss Of 4160 V Essential Bus
SL	1.13E-06	14.30%	Small LOCA
T9	7.87E-07	10.00%	Loss Of RN
T3	3.70E-07	4.70%	LOOP
T6	2.98E-07	3.80%	Secondary Line Break Inside Containment
TORNSW	2.08E-07	2.60%	Tornado Causes LOOP
T12	1.27E-07	1.60%	Loss Of Instrument Air
T13	1.19E-07	1.50%	Inadvertent SS Actuation
ML	8.84E-08	1.10%	Medium LOCA
LL	8.45E-08	1.10%	Large LOCA
T1	7.33E-08	0.90%	Reactor Trip
FCR	7.27E-08	0.90%	Control Room Fire Causes A Loss Of KC
T4	5.73E-08	0.70%	Loss Of Main Feedwater
T10	3.27E-08	0.40%	Loss Of KC
FACTB	3.20E-08	0.40%	All Consuming TB Fire Initiating Event
TORNF4	2.74E-08	0.30%	Plant Struck By F4 Or F5 Tornado
RPV	2.50E-08	0.30%	RV Rupture
FETB	1.88E-08	0.20%	ETB Fire Initiating Event
T14	1.88E-08	0.20%	Loss of Vital Instrumentation and Control
CAPRFLD	1.35E-08	0.20%	Aux. Shutdown Panel Lost Due To Flood
T2	1.03E-08	0.10%	Loss Of Load
ATWS	6.35E-09	0.10%	ATWS
FKC	5.75E-09	0.10%	KC Power Cable Initiating Event
ISLOCA	3.55E-09	0.00%	ISLOCA Occurs
T8	3.08E-09	0.00%	Steamline Break Outside Containment
FCBLR	2.67E-09	0.00%	Cable Room Fire Causes A Loss Of Component Cooling Water
Y	1.68E-09	0.00%	SGTR
T7	1.44E-09	0.00%	FDW Line Break Outside Containment
FDG	0.00E+00	0.00%	Fire Causes A Loss Of The A Train Diesel
Total =			7.89E-06

Table 4 - Revision 2b top 100 cut sets

Freq		Total frequency of top 100		5.5E-06		
for 9 days		Percent of total		70%		
#	Inputs	Description	Rate	Exposure	Event Prob	Probability
1	T9	Loss Of RN		1.1E-04	1.1E-04	4.3E-07
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	TCF0001RHE	Failure to Restore Main Feedwater After Plant Trip		5.0E-02	5.0E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
2	T11	Loss Of 4160 V Essential Bus		1.3E-03	3.6E-05	4.0E-07
	NNVSSFADHE	Failure to Initiate SSF Seal Injection - Non LOOP Event		1.3E-02	1.3E-02	
	-PACBOFTDEX	Blackout Following Trip		1.0E-03	1.0E-03	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
3	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	3.8E-07
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
4	SL	Small LOCA		3.1E-03	8.4E-05	3.8E-07
	TRECIRCDHE	Operators Fail to Establish High Pressure Recirculation		4.5E-03	4.5E-03	
5	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	3.6E-07
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	NNVSSFBDHE	Failure to Initiate SSF Seal Injection - LOOP Event		8.5E-02	8.5E-02	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
6	SL	Small LOCA		3.1E-03	8.4E-05	2.5E-07
	KKC01A2LHE	Latent Human Error Fails KC 1A2 Pump Train		3.0E-03	3.0E-03	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
7	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	1.7E-07
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	NSS00DGSDR	SSF Diesel Generator Fails to Run	1.7E-03	2.4E+01	4.0E-02	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
8	SL	Small LOCA		3.1E-03	8.4E-05	1.7E-07
	LND001ALPR	ND Pump 1A Fails to Run	8.4E-05	2.4E+01	2.0E-03	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
9	T11	Loss Of 4160 V Essential Bus		1.3E-03	3.6E-05	1.4E-07
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	TCF0001RHE	Failure to Restore Main Feedwater After Plant Trip		5.0E-02	5.0E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	

Table 4 - Revision 2b top 100 cut sets

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
10	T11	Loss Of 4160 V Essential Bus		1.3E-03	3.6E-05	1.1E-07
	NNV0865MVO	Motor-Operated Valve 1NV865 Fails to Open	3.5E-03	1.0E+00	3.5E-03	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
11	T11	Loss Of 4160 V Essential Bus		1.3E-03	3.6E-05	1.1E-07
	NNV0872MVO	Motor-Operated Valve 1NV872A Fails to Open	3.5E-03	1.0E+00	3.5E-03	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
12	T9	Loss Of RN		1.1E-04	1.1E-04	9.9E-08
	FCATHRODHE	Operator Fails to Manually Throttle the Auxiliary FW Flow		2.0E-02	2.0E-02	
	TCF0001RHE	Failure to Restore Main Feedwater After Plant Trip		5.0E-02	5.0E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
13	T11	Loss Of 4160 V Essential Bus		1.3E-03	3.6E-05	9.2E-08
	NSS0SSFLHE	Latent Human Error Fails The SSF		3.0E-03	3.0E-03	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
14	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	8.8E-08
	FCATHRODHE	Operator Fails to Manually Throttle the Auxiliary FW Flow		2.0E-02	2.0E-02	
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
15	T11	Loss Of 4160 V Essential Bus		1.3E-03	3.6E-05	8.6E-08
	NNV0SMPDPS	SSF Reactor Coolant Makeup Pump Fails To Start On Demand	2.8E-03	1.0E+00	2.8E-03	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
16	SL	Small LOCA		3.1E-03	8.4E-05	8.1E-08
	KKC01A2PPS	KC Pump 1A2 Fails to Start	9.7E-04	1.0E+00	9.7E-04	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
17	T11	Loss Of 4160 V Essential Bus		1.3E-03	3.6E-05	7.5E-08
	NNV0876MVT	Motor-Operated Valve 1NV876 Transfers Position	3.7E-07	6.6E+03	2.4E-03	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
18	T11	Loss Of 4160 V Essential Bus		1.3E-03	3.6E-05	7.5E-08
	NNV0877MVT	Motor Operated Valve 1NV877 Transfers Position	3.7E-07	6.6E+03	2.4E-03	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
19	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	6.4E-08
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	JDG001ADGS	Diesel Generator 1A Fails To Start	7.4E-03	1.0E+00	7.4E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	

Table 4 - Revision 2b top 100 cut sets

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
20	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	6.0E-08
	JDG001ADGS	Diesel Generator 1A Fails To Start	7.4E-03	1.0E+00	7.4E-03	
	NNVSSFBDHE	Failure to Initiate SSF Seal Injection - LOOP Event		8.5E-02	8.5E-02	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
21	T11	Loss Of 4160 V Essential Bus		1.3E-03	3.6E-05	5.4E-08
	NVKAHU1CRR	SSF Air Handling Unit Fails to Run	4.9E-05	3.6E+01	1.8E-03	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
22	T6	Secondary Line Break Inside Containment		2.1E-03	5.8E-05	5.4E-08
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	TFBLD01DHE	Operators Fail to Establish Feed and Bleed Cooling		1.2E-02	1.2E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
23	SL	Small LOCA		3.1E-03	8.4E-05	5.3E-08
	KKC648ADEX	Slave Relay K648A Failure to Operate		4.2E-03	4.2E-03	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
	EKSFAS0DHE	Operators Fail To Respond to ESFAS Relay Failure		1.5E-01	1.5E-01	
24	SL	Small LOCA		3.1E-03	8.4E-05	5.3E-08
	KKC649ADEX	Slave Relay K649A Failure to Operate		4.2E-03	4.2E-03	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
	EKSFAS0DHE	Operators Fail To Respond to ESFAS Relay Failure		1.5E-01	1.5E-01	
25	T9	Loss Of RN		1.1E-04	1.1E-04	4.8E-08
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	TCF0001RHE	Failure to Restore Main Feedwater After Plant Trip		5.0E-02	5.0E-02	
	TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
26	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	4.2E-08
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
27	T6	Secondary Line Break Inside Containment		2.1E-03	5.8E-05	3.9E-08
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	RVIPORVDHE	Operators Fail to Restore VI to PORVs or Align Backup Nitrogen		8.6E-03	8.6E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
28	TORNSW	Tornado Causes LOOP		3.8E-04	1.0E-05	3.5E-08
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	

Table 4 - Revision 2b top 100 cut sets

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
29	T11	Loss Of 4160 V Essential Bus		1.3E-03	3.6E-05	3.3E-08
	NNVSMUPFLF	Filter (Standby Makeup Pump) Restricts Flow	9.4E-07	1.1E+03	1.1E-03	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
30	TORNSW	Tornado Causes LOOP		3.8E-04	1.0E-05	3.3E-08
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	NNVSSFBDHE	Failure to Initiate SSF Seal Injection - LOOP Event		8.5E-02	8.5E-02	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
31	T11	Loss Of 4160 V Essential Bus		1.3E-03	3.6E-05	3.2E-08
	FCATHRODHE	Operator Fails to Manually Throttle the Auxiliary FW Flow		2.0E-02	2.0E-02	
	TCF0001RHE	Failure to Restore Main Feedwater After Plant Trip		5.0E-02	5.0E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
32	SL	Small LOCA		3.1E-03	8.4E-05	3.2E-08
	KKC01A1PPR	KC Pump 1A1 Fails to Run	1.6E-05	2.4E+01	3.8E-04	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
33	SL	Small LOCA		3.1E-03	8.4E-05	3.2E-08
	KKC01A2PPR	KC Pump 1A2 Fails to Run	1.6E-05	2.4E+01	3.8E-04	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
34	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	3.1E-08
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	NDCSDB2DEX	Battery SDSB2 Depletes		1.0E+00	1.0E+00	
	NDCSDC2BCF	Battery Charger SDSC2 Fails	1.8E-05	4.0E+02	7.3E-03	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
35	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	3.1E-08
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	NSS24VDBCFCF	24 V Charger Failure Prior to Event Drains SSF DG Battery	1.8E-05	4.0E+02	7.3E-03	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
36	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	3.0E-08
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	JRN232AMVO	Motor Operated Valve 1RN232A Fails to Open	3.5E-03	1.0E+00	3.5E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
37	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	3.0E-08
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	JVD01A1FNS	Fan 1A1 Fails To Start	3.5E-03	1.0E+00	3.5E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	

Table 4 - Revision 2b top 100 cut sets

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
38	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	3.0E-08
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	JVD01A2FNS	Fan 1A2 Fails To Start	3.5E-03	1.0E+00	3.5E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
39	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	3.0E-08
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	JVDDSF1DMO	Damper 1-DSF 1D Fails to Open	3.5E-03	1.0E+00	3.5E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
40	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	3.0E-08
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	JVDDSF3DMO	Damper 1-DSF D3 Fails to Open	3.5E-03	1.0E+00	3.5E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
41	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	2.8E-08
	JDG001ADGS	Diesel Generator 1A Fails To Start	7.4E-03	1.0E+00	7.4E-03	
	NSS00DGSDR	SSF Diesel Generator Fails to Run	1.7E-03	2.4E+01	4.0E-02	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
42	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	2.8E-08
	JRN232AMVO	Motor Operated Valve 1RN232A Fails to Open	3.5E-03	1.0E+00	3.5E-03	
	NNVSSFBDE	Failure to Initiate SSF Seal Injection - LOOP Event		8.5E-02	8.5E-02	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
43	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	2.8E-08
	JVD01A1FNS	Fan 1A1 Fails To Start	3.5E-03	1.0E+00	3.5E-03	
	NNVSSFBDE	Failure to Initiate SSF Seal Injection - LOOP Event		8.5E-02	8.5E-02	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
44	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	2.8E-08
	JVD01A2FNS	Fan 1A2 Fails To Start	3.5E-03	1.0E+00	3.5E-03	
	NNVSSFBDE	Failure to Initiate SSF Seal Injection - LOOP Event		8.5E-02	8.5E-02	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
45	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	2.8E-08
	JVDDSF1DMO	Damper 1-DSF 1D Fails to Open	3.5E-03	1.0E+00	3.5E-03	
	NNVSSFBDE	Failure to Initiate SSF Seal Injection - LOOP Event		8.5E-02	8.5E-02	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	

Table 4 - Revision 2b top 100 cut sets

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
46	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	2.8E-08
	JVDDSF3DMO	Damper 1-DSF D3 Fails to Open	3.5E-03	1.0E+00	3.5E-03	
	NNVSSFBDHE	Failure to Initiate SSF Seal Injection - LOOP Event		8.5E-02	8.5E-02	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
47	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	2.8E-08
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	JDG1RUNCOM	Common Cause Failure of Diesel Generator to Run		3.3E-03	3.3E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
48	T3	LOOP		3.6E-02	8.9E-04	2.8E-08
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
	ACB2DGRHE	Failure to Recover LOOP (Double DG R Fail, No SSHR, No F & B)		2.3E-02	2.3E-02	
		Failure to Cross Connect Offsite Power Between Units (Unit 2				
	POPXCONDHE	Fallure Included).		3.9E-01	3.9E-01	
49	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	2.7E-08
	DDC1EBABYF	125 V dc Vital I & C Battery 1EBA Fails on Demand	3.2E-03	1.0E+00	3.2E-03	
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
50	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	2.7E-08
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	JDG00BABYF	Battery 1DGBA Fails	3.2E-03	1.0E+00	3.2E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
51	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	2.6E-08
	JDG1RUNCOM	Common Cause Failure of Diesel Generator to Run		3.3E-03	3.3E-03	
	NNVSSFBDHE	Failure to Initiate SSF Seal Injection - LOOP Event		8.5E-02	8.5E-02	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
52	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	2.6E-08
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	JDG001ALHE	Latent Human Error on Diesel Generator 1A		3.0E-03	3.0E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
53	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	2.6E-08
	DDC1EBABYF	125 V dc Vital I & C Battery 1EBA Fails on Demand	3.2E-03	1.0E+00	3.2E-03	
	NNVSSFBDHE	Failure to Initiate SSF Seal Injection - LOOP Event		8.5E-02	8.5E-02	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	

Table 4 - Revision 2b top 100 cut sets

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
54	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	2.6E-08
	JDG00BABYF	Battery 1DGBA Fails	3.2E-03	1.0E+00	3.2E-03	
	NNVSSFBDHE	Failure to Initiate SSF Seal Injection - LOOP Event		8.5E-02	8.5E-02	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
55	RPV	RV Rupture		1.0E-06	2.5E-08	2.5E-08
	RPVFAILRHE	Failure To Prevent Core Damage Following Reactor Vessel Rupture		1.0E+00	1.0E+00	
56	T9	Loss Of RN		1.1E-04	1.1E-04	2.5E-08
	FCA0TDPTRM	Turbine Driven Pump Train in Maintenance or Testing		5.0E-03	5.0E-03	
	TCF0001RHE	Failure to Restore Main Feedwater After Plant Trip		5.0E-02	5.0E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
57	T12	Loss Of Instrument Air		2.0E-01	4.9E-03	2.5E-08
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	KRN0291AVT	Air Operated Valve 1RN291 Transfers Position	2.7E-06	2.4E+01	6.5E-05	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
58	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	2.4E-08
	JDG001ALHE	Latent Human Error on Diesel Generator 1A		3.0E-03	3.0E-03	
	NNVSSFBDHE	Failure to Initiate SSF Seal Injection - LOOP Event		8.5E-02	8.5E-02	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
59	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	2.4E-08
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	JFD0022SVO	Solenoid Valve 1FD22 Fails to Open	2.8E-03	1.0E+00	2.8E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
60	FCR	Control Room Fire Causes A Loss Of KC		2.1E-06	2.1E-06	2.4E-08
	NNVSSFADHE	Failure to Initiate SSF Seal Injection - Non LOOP Event		1.3E-02	1.3E-02	
	-PACBOFTDEX	Blackout Following Trip		1.0E-03	1.0E-03	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
61	T3	LOOP		3.6E-02	8.9E-04	2.4E-08
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	NNVSSFBDHE	Failure to Initiate SSF Seal Injection - LOOP Event		8.5E-02	8.5E-02	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
	AC01DGRRHE	Failure to Recover LOOP (DG S Fail +DG R Fail, SSHR Avail, RCP Seal LOCA)		2.1E-02	2.1E-02	
	POPXCONDHE	Failure to Cross Connect Offsite Power Between Units (Unit 2 Failure Included).		3.9E-01	3.9E-01	
62	T10	Loss Of KC		2.9E-04	6.0E-06	2.3E-08
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	

Table 4 - Revision 2b top 100 cut sets

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
	TCF0001RHE	Failure to Restore Main Feedwater After Plant Trip		5.0E-02	5.0E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	

Table 4 - Revision 2b top 100 cut sets

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
63	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	2.3E-08
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	NSS00DGSDS	SSF Diesel Generator Fails to Start	5.4E-03	1.0E+00	5.4E-03	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
64	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	2.2E-08
	JFD0022SVO	Solenoid Valve 1FD22 Fails to Open	2.8E-03	1.0E+00	2.8E-03	
	NNVSSFBDHE	Failure to Initiate SSF Seal Injection - LOOP Event		8.5E-02	8.5E-02	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
65	T6	Secondary Line Break Inside Containment		2.1E-03	5.8E-05	2.0E-08
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	TRECIRCDHE	Operators Fail to Establish High Pressure Recirculation		4.5E-03	4.5E-03	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
66	FETB	ETB Fire Initiating Event		8.9E-07	2.2E-08	1.9E-08
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
67	T11	Loss Of 4160 V Essential Bus		1.3E-03	3.6E-05	1.8E-08
	NNV0SMPDPR	SSF Reactor Coolant Makeup Pump Fails To Run	2.4E-05	2.4E+01	5.8E-04	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
68	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	1.7E-08
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	JFD5070LTK	Level Transmitter 1FDLS5070 Fails High	5.0E-06	4.0E+02	2.0E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
69	T12	Loss Of Instrument Air		2.0E-01	4.9E-03	1.6E-08
	FCACLMSCOM	Common Cause Failure of RN Sources Due to Clams		1.0E-02	1.0E-02	
	FCAFILLDHE	Failure to Refill UST From Condensate Grade Sources		3.1E-02	3.1E-02	
	TFBLD01DHE	Operators Fail to Establish Feed and Bleed Cooling		1.2E-02	1.2E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
70	T11	Loss Of 4160 V Essential Bus		1.3E-03	3.6E-05	1.6E-08
	NACSKPGBLF	120 V AC Power Bus SKPG Fails	1.3E-06	4.0E+02	5.3E-04	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
71	FACTB	All Consuming TB Fire Initiating Event		1.7E-05	4.2E-07	1.6E-08
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
72	SL	Small LOCA		3.1E-03	8.4E-05	1.6E-08

Table 4 - Revision 2b top 100 cut sets

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
73	HNW0813CVO	Check Valve 1NW813 Fails to Open	1.9E-04	1.0E+00	1.9E-04	1.6E-08
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
	T9	Loss Of RN		1.1E-04	1.1E-04	
	HYDBACKDHE	Operators Fail to Establish Backup Cooling From YD		1.3E-02	1.3E-02	
	NNVSSFADHE	Failure to Initiate SSF Seal Injection - Non LOOP Event		1.3E-02	1.3E-02	
74	-PACBOFTDEX	Blackout Following Trip		1.0E-03	1.0E-03	1.6E-08
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	
	JFD5070LTK	Level Transmitter 1FDLS5070 Fails High	5.0E-06	4.0E+02	2.0E-03	
	NNVSSFBDEH	Failure to Initiate SSF Seal Injection - LOOP Event		8.5E-02	8.5E-02	
75	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	1.6E-08
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
	T6	Secondary Line Break Inside Containment		2.1E-03	5.8E-05	
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	HND028AMVO	Motor Operated Valve 1ND28A Fails to Open	3.5E-03	1.0E+00	3.5E-03	
76	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	1.6E-08
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
	T6	Secondary Line Break Inside Containment		2.1E-03	5.8E-05	
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	LND025AMVO	Motor Operated Valve 1ND25A Fails to Open	3.5E-03	1.0E+00	3.5E-03	
77	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	1.6E-08
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
	T6	Secondary Line Break Inside Containment		2.1E-03	5.8E-05	
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	LNI185AMVO	Motor Operated Valve 1NI185A Fails to Open	3.5E-03	1.0E+00	3.5E-03	
78	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	1.6E-08
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
	T11	Loss Of 4160 V Essential Bus		1.3E-03	3.6E-05	
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	TCF0001RHE	Failure to Restore Main Feedwater After Plant Trip		5.0E-02	5.0E-02	
79	TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	1.6E-08
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	
	FCA0174MVO	Motor Operated Valve 1CA174 Fails To Open	3.5E-03	1.0E+00	3.5E-03	
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
80	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	1.6E-08
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	
	FCA0175MVO	Motor Operated Valve 1CA175 Fails To Open	3.5E-03	1.0E+00	3.5E-03	
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	

Table 4 - Revision 2b top 100 cut sets

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	

Table 4 - Revision 2b top 100 cut sets

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
81	TORNSW	Tornado Causes LOOP		3.8E-04	1.0E-05	1.5E-08
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	NSS00DGSDR	SSF Diesel Generator Fails to Run	1.7E-03	2.4E+01	4.0E-02	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
82	T9	Loss Of RN		1.1E-04	1.1E-04	1.5E-08
	FSA00CVAVT	Control Valve 1SACV Transfers Position	2.7E-06	1.1E+03	3.1E-03	
	TCF0001RHE	Failure to Restore Main Feedwater After Plant Trip		5.0E-02	5.0E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
83	T9	Loss Of RN		1.1E-04	1.1E-04	1.5E-08
	FSA00SVAVT	Stop Valve 1SASV Transfers Position	2.7E-06	1.1E+03	3.1E-03	
	TCF0001RHE	Failure to Restore Main Feedwater After Plant Trip		5.0E-02	5.0E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
84	T9	Loss Of RN		1.1E-04	1.1E-04	1.5E-08
	FWL0848AVT	Air Operated Valve 1WL848 Transfers Position	2.7E-06	1.1E+03	3.1E-03	
	TCF0001RHE	Failure to Restore Main Feedwater After Plant Trip		5.0E-02	5.0E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
85	T9	Loss Of RN		1.1E-04	1.1E-04	1.5E-08
	FCA0TDPLHE	Latent Human Error Fails Turbine Driven Pump		3.0E-03	3.0E-03	
	TCF0001RHE	Failure to Restore Main Feedwater After Plant Trip		5.0E-02	5.0E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
86	T9	Loss Of RN		1.1E-04	1.1E-04	1.5E-08
	FWLSUMPLHE	Latent Human Error Fails Sump Pumps		3.0E-03	3.0E-03	
	TCF0001RHE	Failure to Restore Main Feedwater After Plant Trip		5.0E-02	5.0E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
87	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	1.5E-08
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	NNV0865MVO	Motor-Operated Valve 1NV865 Fails to Open	3.5E-03	1.0E+00	3.5E-03	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
88	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	1.5E-08
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	NNV0872MVO	Motor-Operated Valve 1NV872A Fails to Open	3.5E-03	1.0E+00	3.5E-03	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
89	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	1.5E-08
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	NVK0D4ADMO	SSF Diesel Combustion Air Inlet Damper 4A Fails to Open	3.5E-03	1.0E+00	3.5E-03	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	

Table 4 - Revision 2b top 100 cut sets

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
90	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	1.5E-08
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	NVK0D4BDMO	SSF Diesel Combustion Air Inlet Damper 4B Fails to Open	3.5E-03	1.0E+00	3.5E-03	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
91	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	1.5E-08
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	NVKDGEXDMO	SSF Diesel Exhaust Damper Fails to Open	3.5E-03	1.0E+00	3.5E-03	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
92	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	1.5E-08
	FCATHRODHE	Operator Fails to Manually Throttle the Auxiliary FW Flow		2.0E-02	2.0E-02	
	JDG001ADGS	Diesel Generator 1A Fails To Start	7.4E-03	1.0E+00	7.4E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
93	T3	LOOP		3.6E-02	8.9E-04	1.4E-08
	JDG001ADGS	Diesel Generator 1A Fails To Start	7.4E-03	1.0E+00	7.4E-03	
	NNVSSFBDEHE	Failure to Initiate SSF Seal Injection - LOOP Event		8.5E-02	8.5E-02	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
	AC02DGSRHE	Failure to Recover LOOP (Double DG S Fail, SSHR Avail, RCP Seal LOCA)		7.5E-02	7.5E-02	
	POPXCONDHE	Failure to Cross Connect Offsite Power Between Units (Unit 2 Failure Included).		3.9E-01	3.9E-01	
94	T6	Secondary Line Break Inside Containment		2.1E-03	5.8E-05	1.4E-08
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	KKC01A2LHE	Latent Human Error Fails KC 1A2 Pump Train		3.0E-03	3.0E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
95	T6	Secondary Line Break Inside Containment		2.1E-03	5.8E-05	1.4E-08
	FCA0TDPTPR	Turbine Driven Pump Fails to Run	3.6E-03	2.4E+01	8.6E-02	
	LNDTR1ALHE	Train 1A Failure Due to Latent Human Error		3.0E-03	3.0E-03	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
96	ML	Medium LOCA		1.2E-04	3.0E-06	1.4E-08
	TRECIRCDHE	Operators Fail to Establish High Pressure Recirculation		4.5E-03	4.5E-03	
97	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	1.4E-08
	FSA00CVAVT	Control Valve 1SACV Transfers Position	2.7E-06	1.1E+03	3.1E-03	
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	

Table 4 - Revision 2b top 100 cut sets

#	Inputs	Description	Rate	Exposure	Event Prob	Probability
98	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	1.4E-08
	FSA00SVAVT	Stop Valve 1SASV Transfers Position	2.7E-06	1.1E+03	3.1E-03	
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
99	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	1.4E-08
	FWL0848AVT	Air Operated Valve 1WL848 Transfers Position	2.7E-06	1.1E+03	3.1E-03	
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	-TNCOSRVDEX	Pressurizer SRV Fails To Reseat After Relieving Liquid		1.0E-01	1.0E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	
100	FTB	Turbine Building Flood Initiating Event		2.8E-03	1.1E-04	1.4E-08
	JDG001ADGR	Diesel Generator 1A Fails to Run	1.9E-03	2.4E+01	4.5E-02	
	NDCSDB1BYF	Battery SDSP1 Fails to Function	3.2E-03	1.0E+00	3.2E-03	
	TSEALS0DEX	Loss of RCP Seal Cooling Leads to Seal Failure		8.6E-01	8.6E-01	
	WRNLOPBTRM	RN Loop B In Maintenance		1.0E+00	1.0E+00	