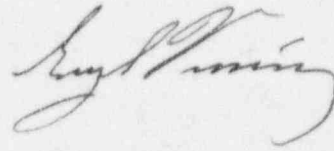


February 15, 1996

NOTE TO: Docket File 50-33

FROM: Guy S. Vissing, Sr. Project Manager
Northeast Utilities Project Directorate
Division of Reactor Projects



Please docket the enclosed Northeast Utilities internal documents that relate to NU's application for amendment dated November 3, 1995, regarding Emergency Core Cooling Subsystem Allowed Outage Time Extension. The following distribution is requested:

- Docket
- PUBLIC
- GVissing
- MWohl
- JFlack
- IJung
- NGilles
- MReinhart

DISTRIBUTION:

PDI-3 Memo
SNorris
GVissing

DOCUMENT NAME: G:\VISSING\DOCKETING

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NAME	SNorris <i>[initials]</i>	GVissing:bf <i>[initials]</i>					
DATE	02/15/96	02/15/96	02/ /96	02/ /96	02/ /96	02/ /96	

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Northeast Utilities System

TELECOPIER COVER LETTER (FAX)

ADM781-1 REV 8-90

DATE 1/2/95	TIME 2:00 PM 4:50 PM	TOTAL NUMBER OF PAGES BEING SENT: (Including this page) 19
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For: Jim/Homogson

TO:

COMPANY USNRE	
DEPARTMENT/DIVISION	
ATTENTION MILLARD WOHL	TELEPHONE NUMBER (301) 415-1181
TELECOPIER TELEPHONE NUMBER (301) 415-2300	(INCLUDE AREA CODE)

FROM:

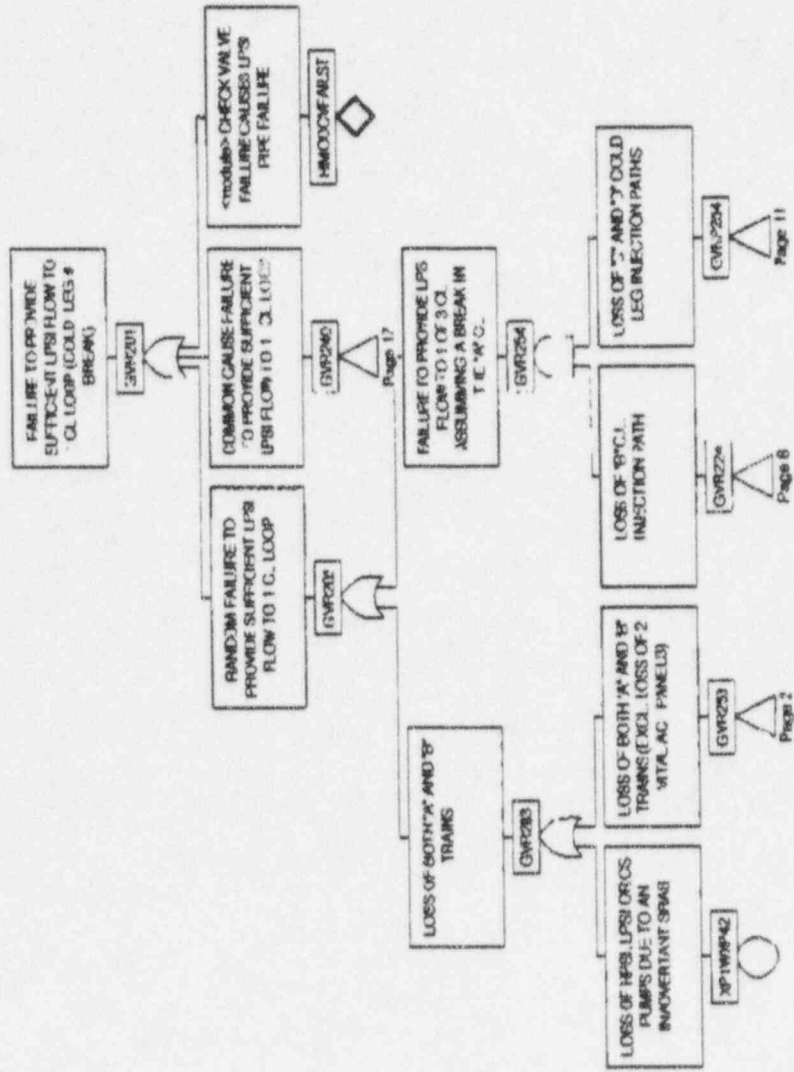
NAME Sunil Weerakkody	ROOM NO. W-133	TELEPHONE NUMBER (202) 665-3594
DEPARTMENT/DIVISION PRA Section		860 860
TELECOPIER TELEPHONE NUMBER (202) 665-3273	(INCLUDE AREA CODE)	

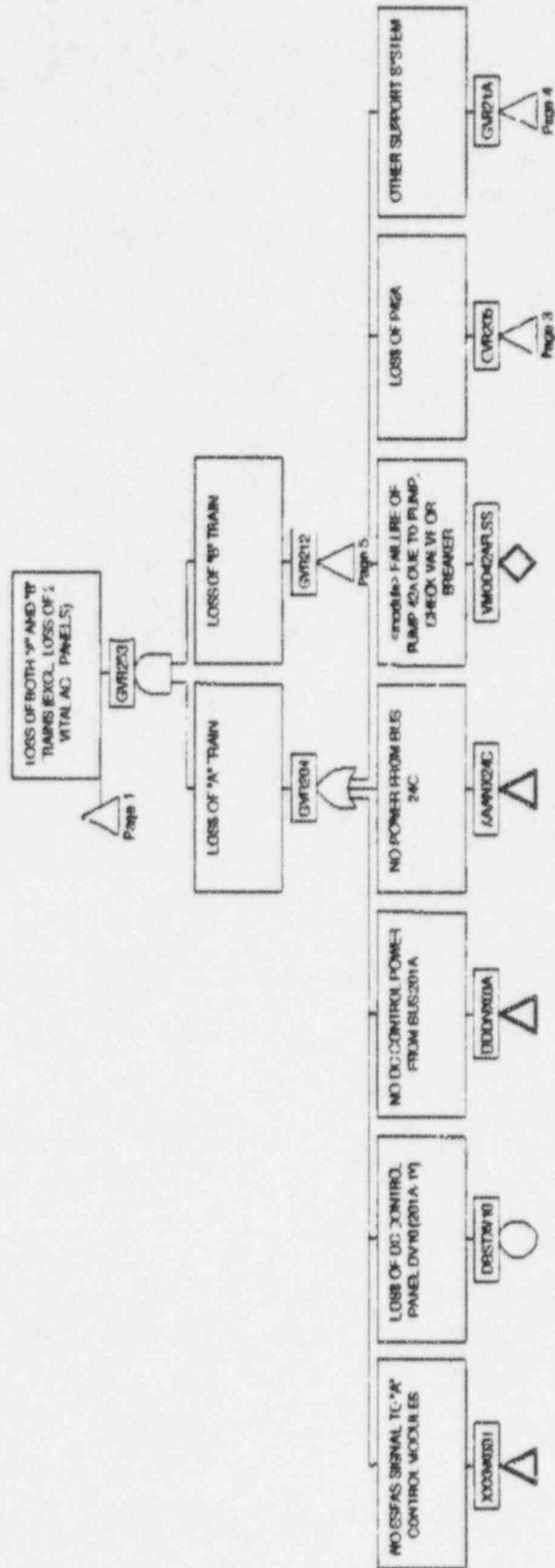
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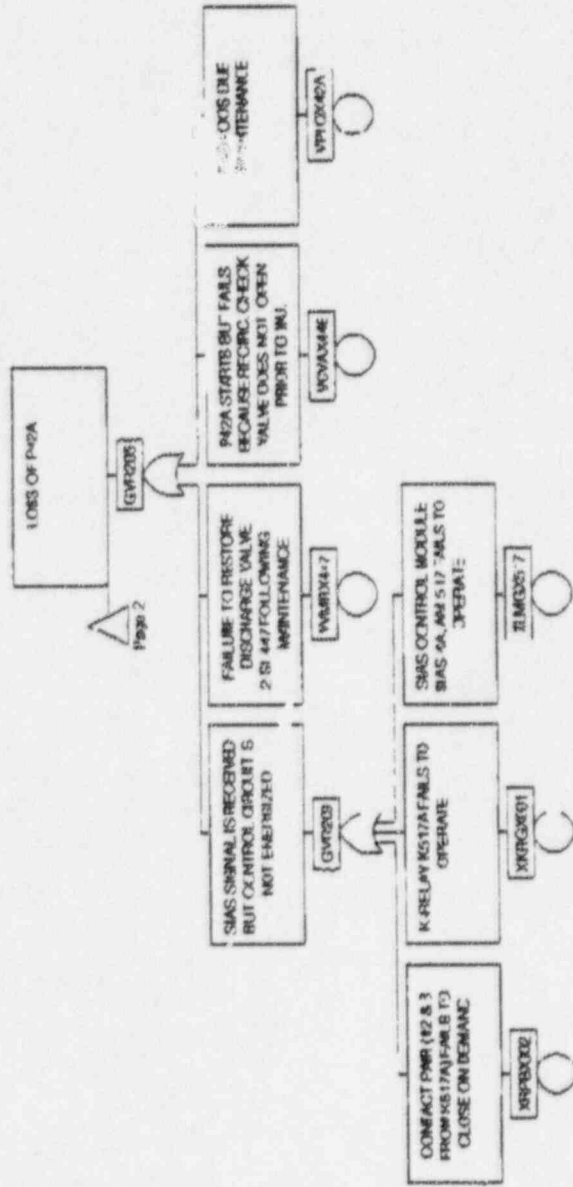
COMMENTS/DIRECTIONS

TAC M 94029

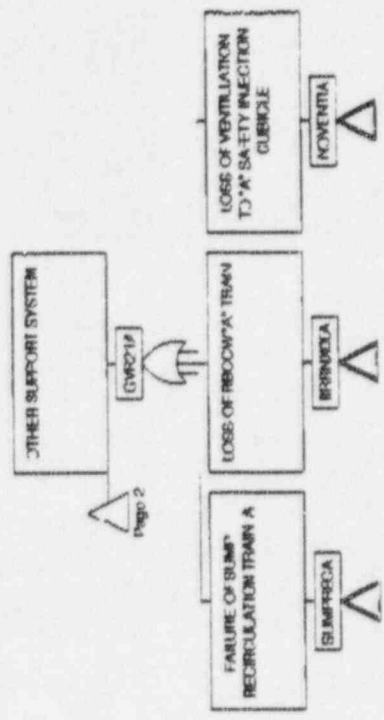
Milestone Unit 2
LPSI system

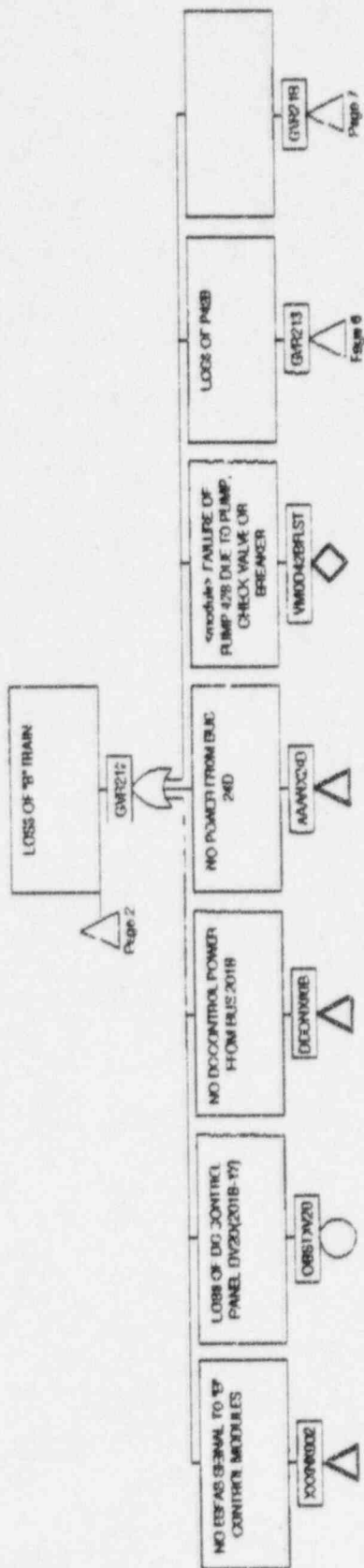


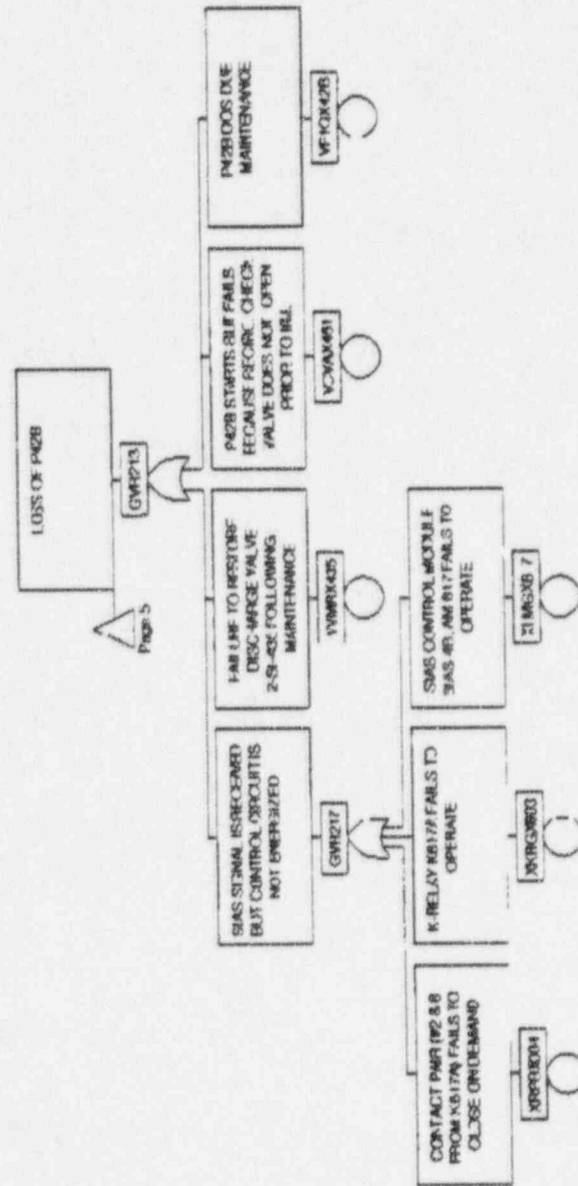




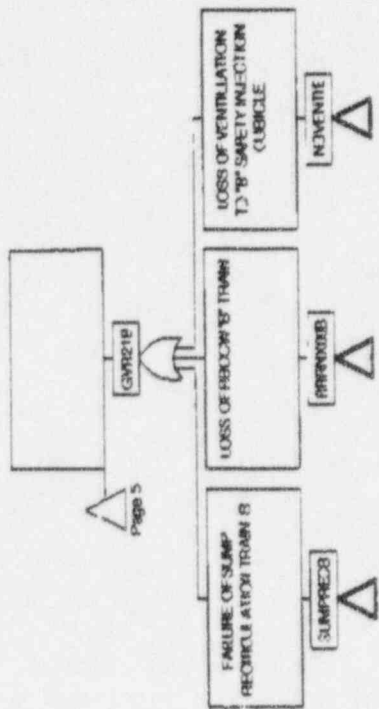
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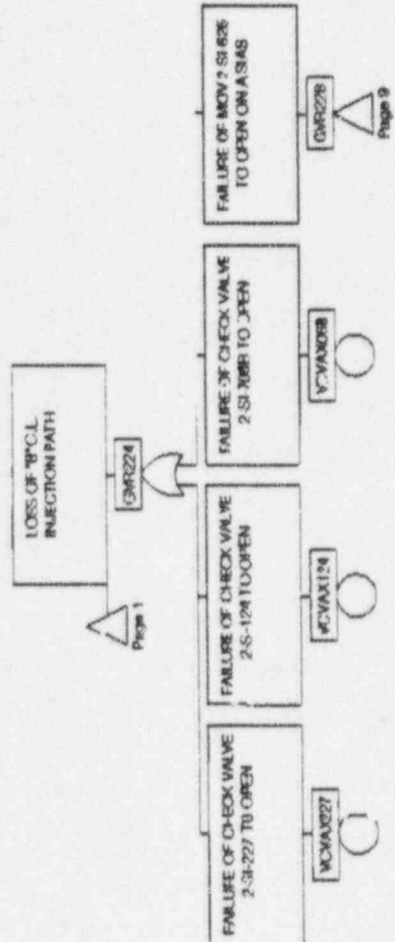


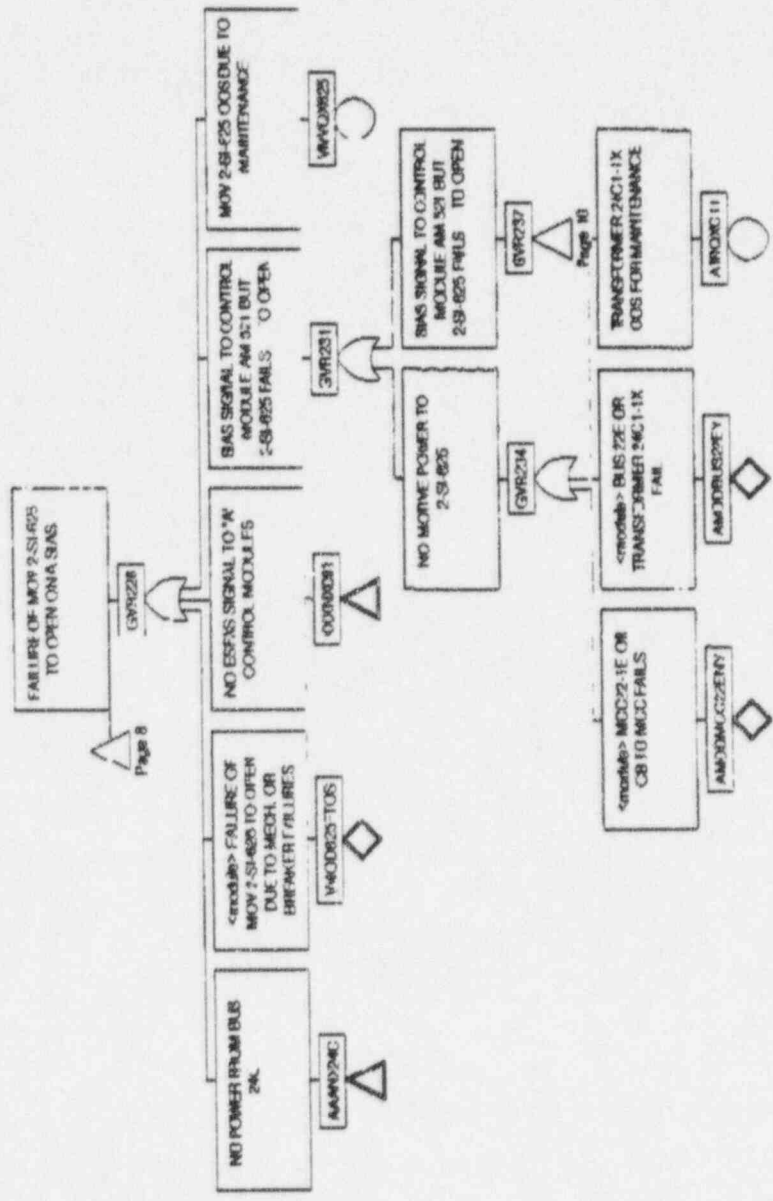




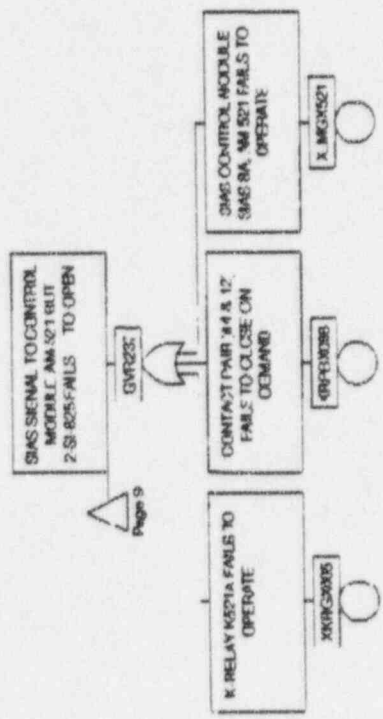
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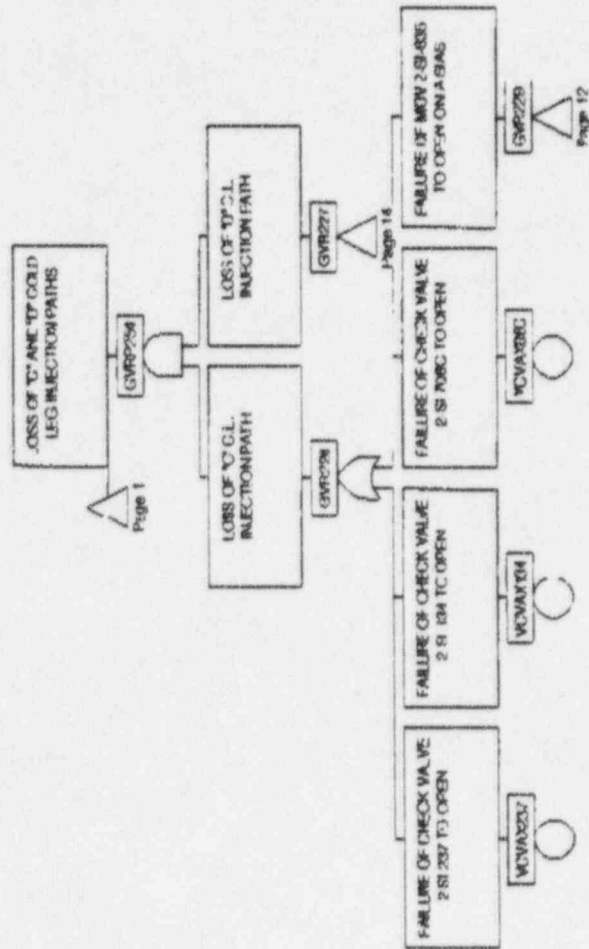


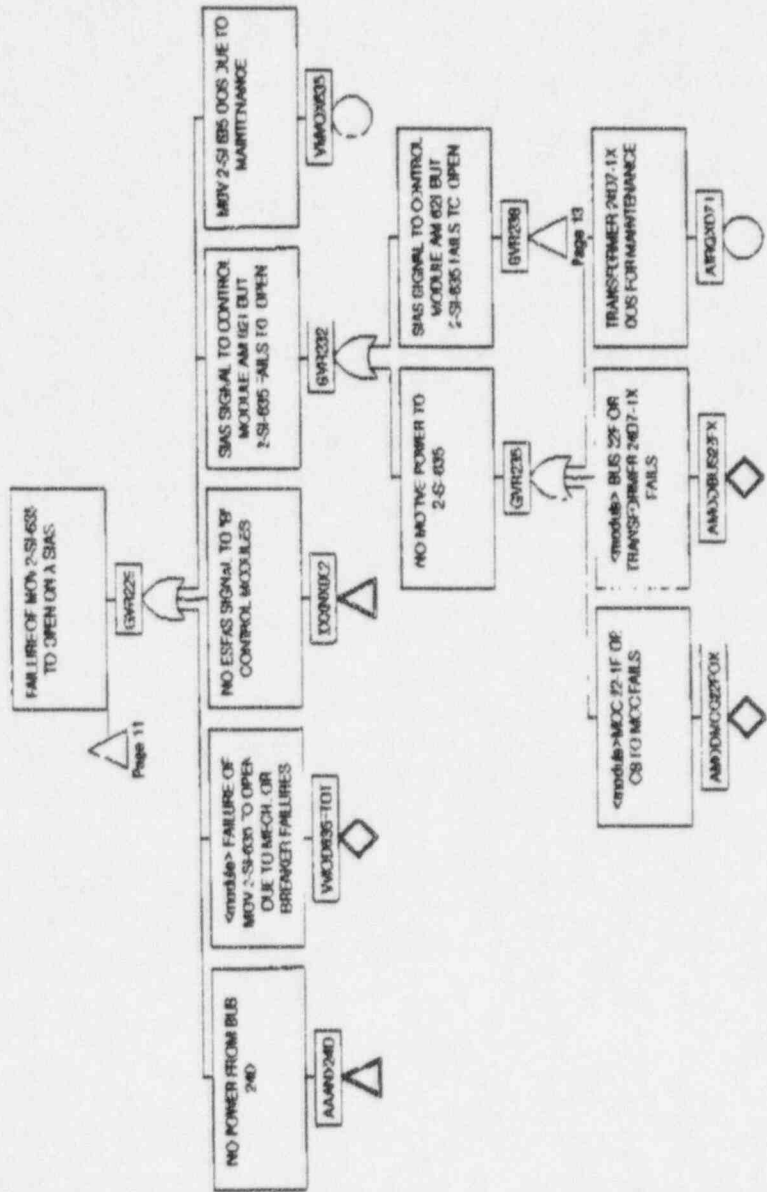


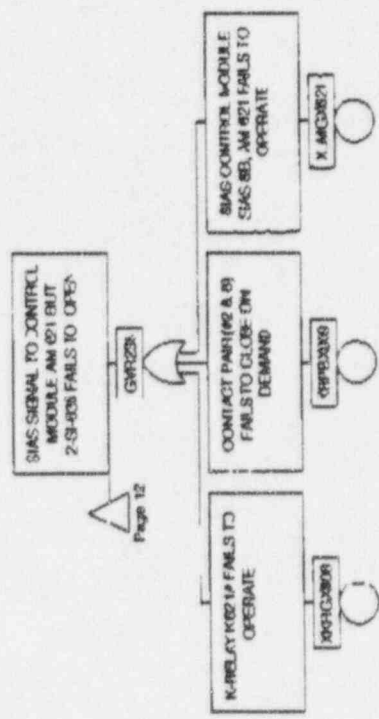
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Page 9

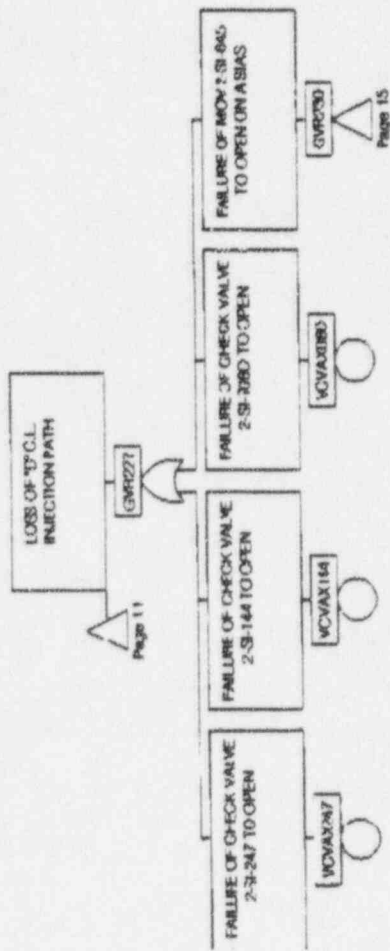




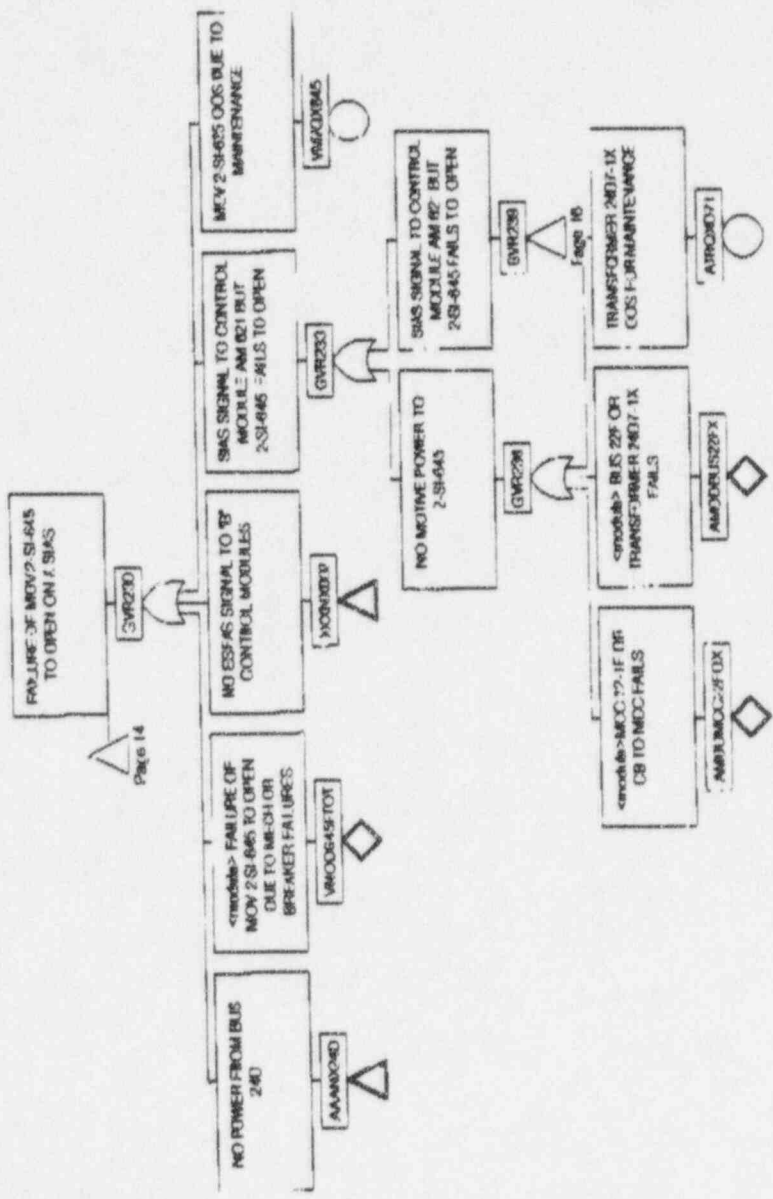


Page 12

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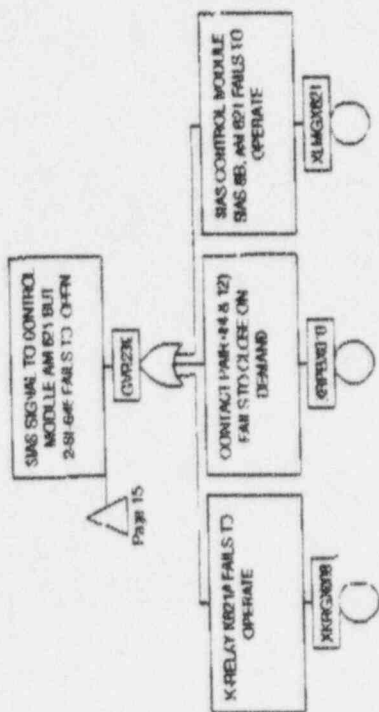


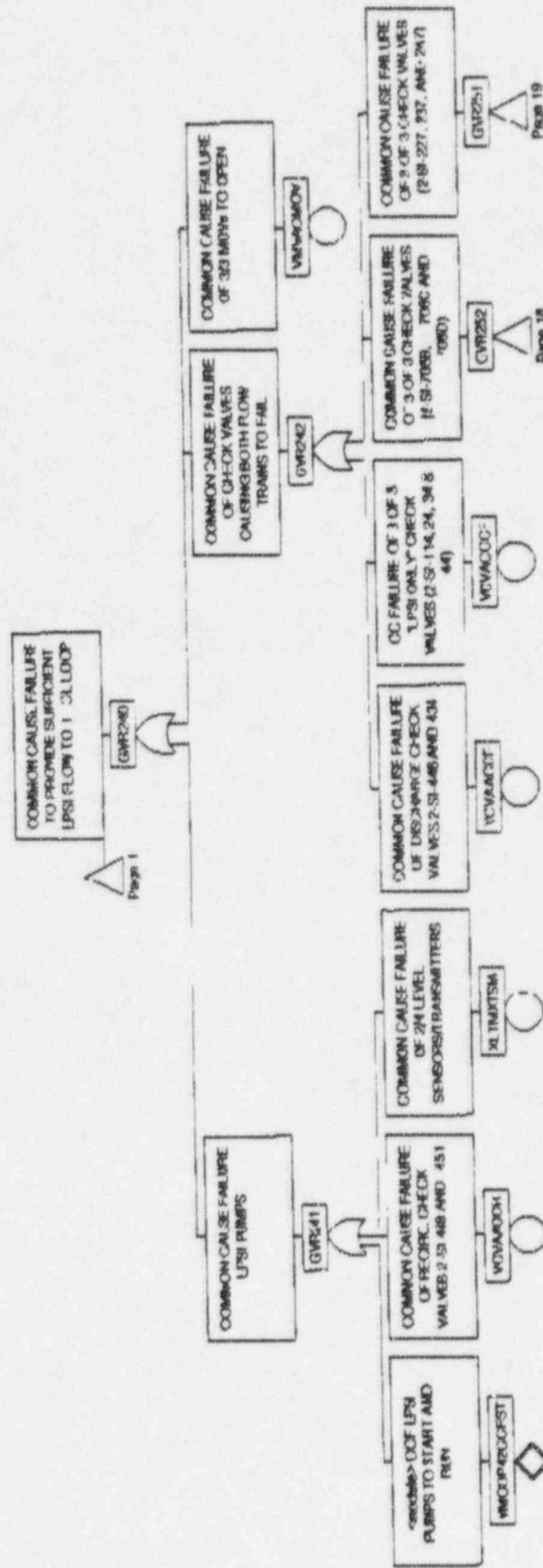
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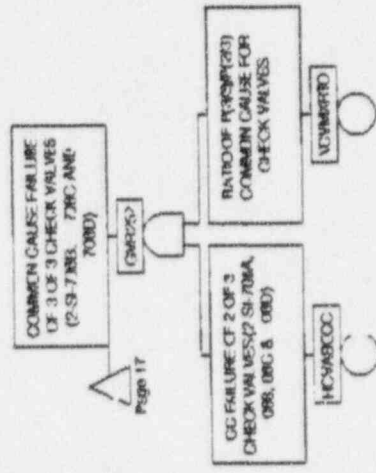


Page 14

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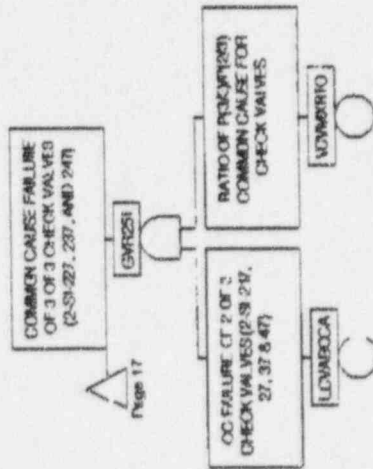






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Northeast Utilities System

TELECOPIER COVER LETTER (FAX)

AG/NA/01-1 REV B-90

DATE 1/2/95	TIME 1:50 PM	TOTAL NUMBER OF PAGES BEING SENT: (Including this page) 6
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TO:

COMPANY USNRC	
DEPARTMENT/DIVISION ^	
ATTENTION MILLARD WOHL	TELEPHONE NUMBER (201) 415-1181
TELECOPIER TELEPHONE NUMBER ➤ (301) 415-2300	(INCLUDE AREA CODE)

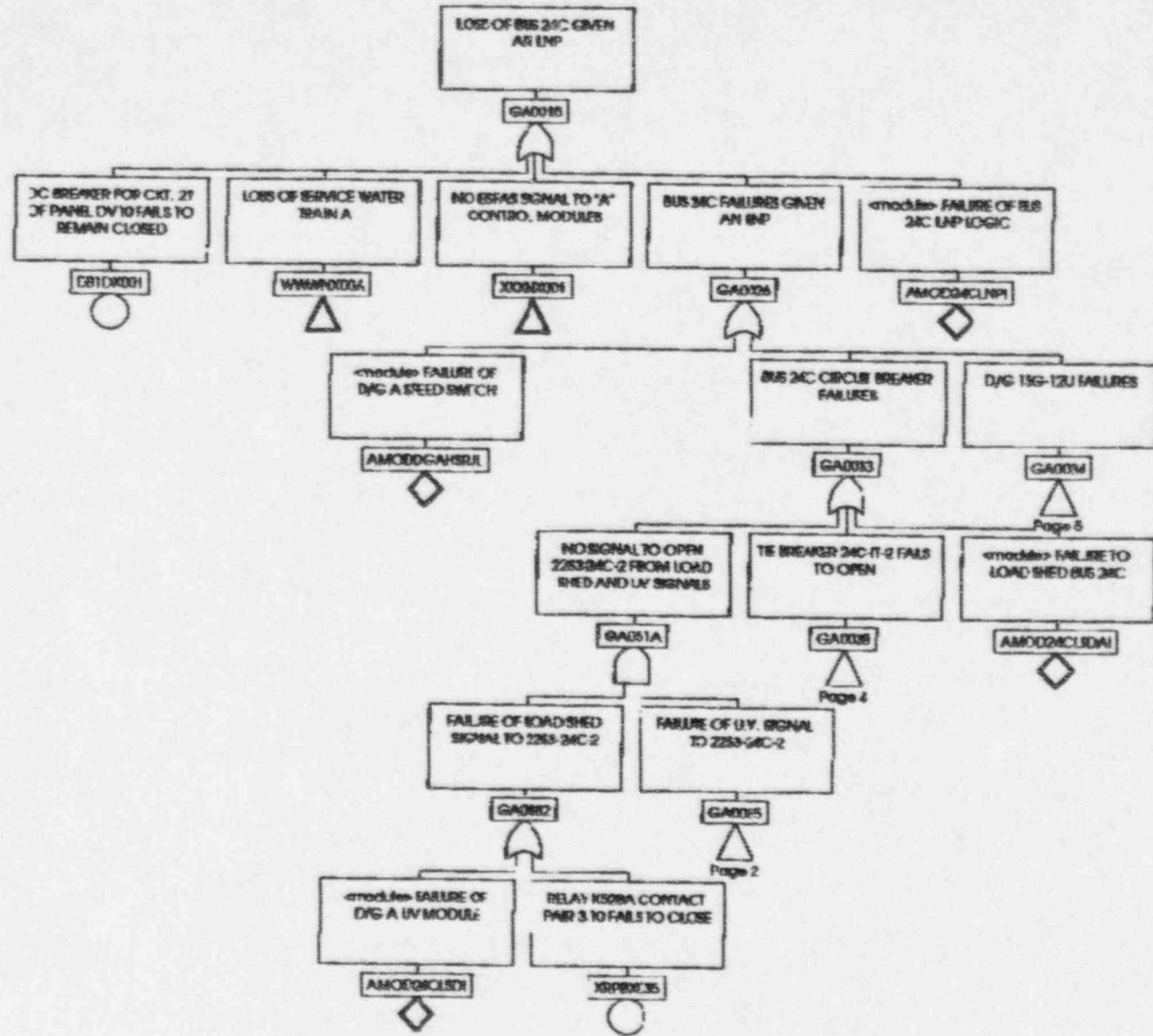
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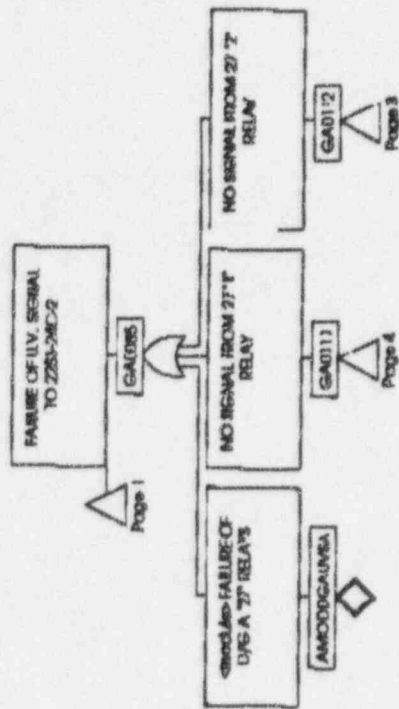
NAME Sunil Weerakkody	ROOM NO W-133	TELEPHONE NUMBER (201) 665-3594
DEPARTMENT/DIVISION PRA Section	860	860
TELECOPIER TELEPHONE NUMBER ➤ (201) 665-3273	(INCLUDE AREA CODE)	

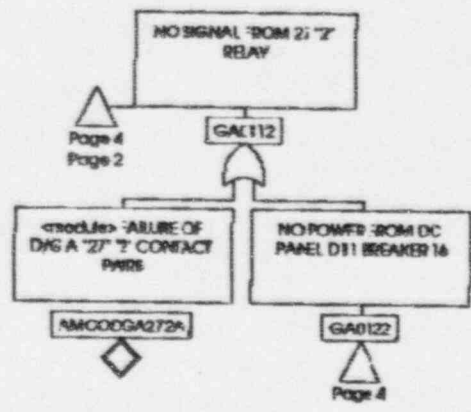
* IF YOU DID NOT RECEIVE ALL OF THE PAGES, PLEASE CALL THIS NUMBER.

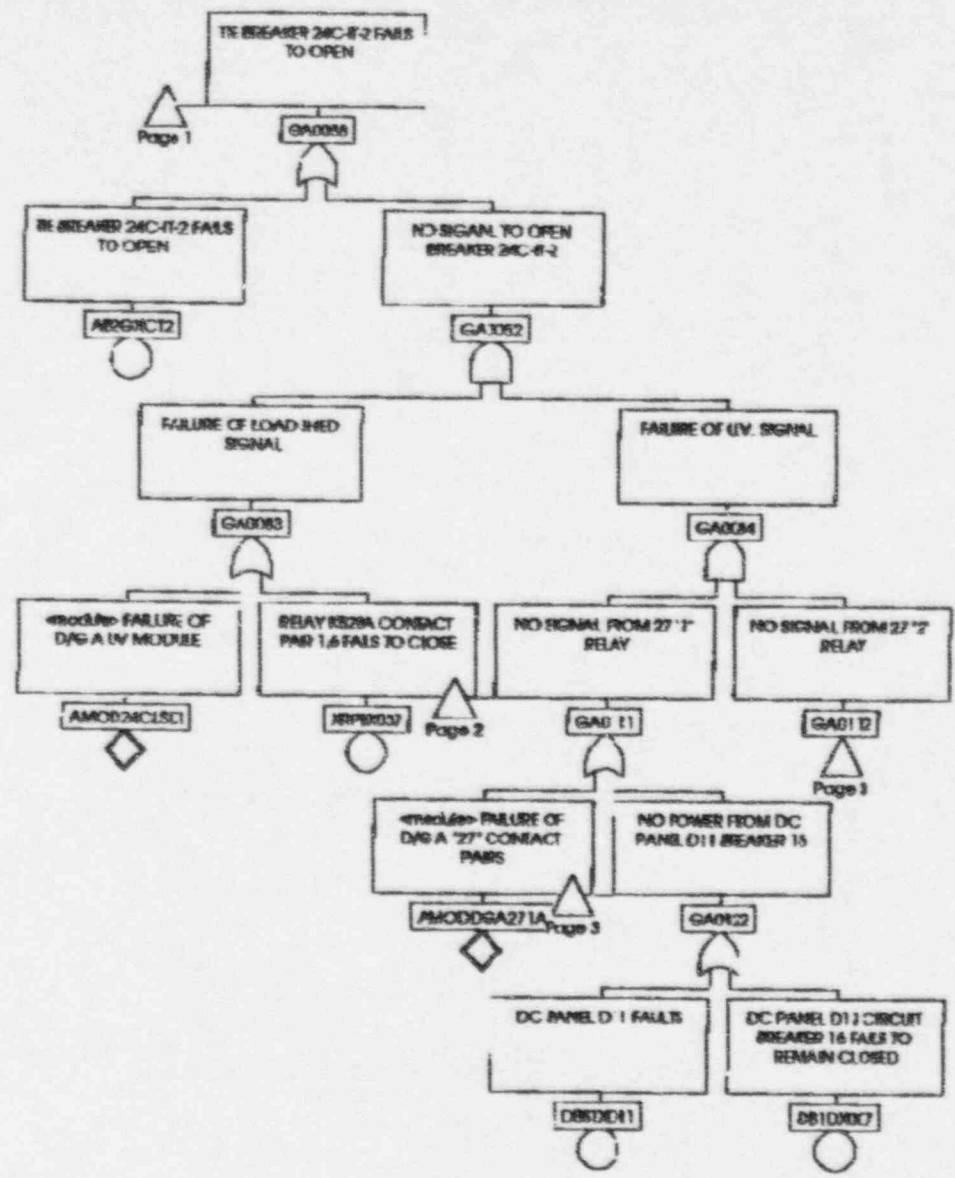
COMMENTS/DIRECTIONS

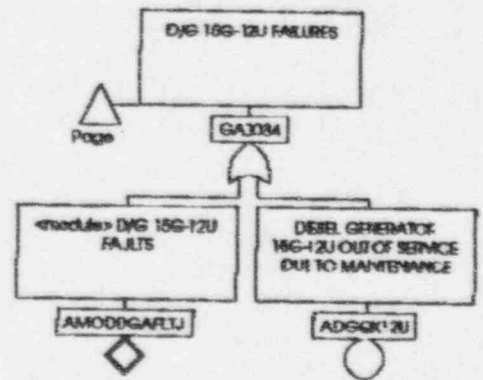
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Northeast Utilities System

TELECOPIER COVER LETTER (FAX)

ADM4781-1 REV 9-90

DATE	TIME	TOTAL NUMBER OF PAGES BEING SENT: (including this page)	55
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TO:

COMPANY	<i>NRC</i>		
DEPARTMENT/DIVISION	<i>JE + R61 3356</i>		
ATTENTION	<i>Millard Wohl</i>	TELEPHONE NUMBER	<i>() 5639</i>
TELECOPIER TELEPHONE NUMBER	(INCLUDE AREA CODE)	<i>(301) 415-2300</i>	

FROM:

NAME	<i>Jim Powers</i>	ROOM NO	<i>860</i>	TELEPHONE NUMBER	<i>860</i>
DEPARTMENT/DIVISION	<i>Sunil Weerakkody</i>	<i>W-133</i>	<i>(203) 665-3594</i>		
TELECOPIER TELEPHONE NUMBER	(INCLUDE AREA CODE)	<i>(203) 665-3273</i>			

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COMMENTS/DIRECTIONS

mps level 2 cutset file

1022-008

CUTSET REPORT

12-14-95 10:13 Page 1
Ignore CAPTA-related B.K. (initials) ULF
MOD./CS. PROB.

MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	PRCB.	PROB.
1) <unnamed>					*3.41E-05
1) T13	LOSS OF DC BUS 201A		5.660E-02	5.66E-02	6.59E-07
FMOEMDBDELCEB	<MODULE> MD PUMP 9B FAILS TO DELIVER		6.771E-03	6.77E-03	
FMOESDPDELD	<MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		1.830E-02	1.83E-02	
RDC1	FAILURE TO RECOVER DC POWER (SHORT TERM)		2.16E-01	2.16E-01	
RDC2	FAILURE TO RECOVER DC POWER (35 MIN)		4.35E-01	4.35E-01	
2) T14	LOSS OF DC BUS 201B		5.340E-02	5.34E-02	6.22E-07
FMOEMDADELCA	<MODULE> MD PUMP TRAIN A FAILS TO DELIVER		6.771E-03	6.77E-03	
FMOESDPDELD	<MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		1.830E-02	1.83E-02	
RDC1	FAILURE TO RECOVER DC POWER (SHORT TERM)		2.16E-01	2.16E-01	
RDC2	FAILURE TO RECOVER DC POWER (35 MIN)		4.35E-01	4.35E-01	
3) T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	5.91E-07
AMODDGBFLTKI	<module> D/G 15G-13U FAULTS		5.241E-02	5.24E-02	
FMOEMDADELCA	<MODULE> MD PUMP TRAIN A FAILS TO DELIVER		6.771E-03	6.77E-03	
FMOESDPDELD	<MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		1.830E-02	1.83E-02	
4) T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	5.31E-07
AMODDGAFLTJI	<module> D/G 15G-12U FAULTS		5.241E-02	5.24E-02	
FMOEMDBDELCEB	<MODULE> MD PUMP 9B FAILS TO DELIVER		6.771E-03	6.77E-03	
FMOESDPDELD	<MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		1.830E-02	1.83E-02	
5) T13	LOSS OF DC BUS 201A		5.650E-02	5.66E-02	5.56E-07
RT	FAILURE OF REACTOR TRIP SYSTEM		1.03E-05	1.03E-05	
6) T14	LOSS OF DC BUS 201B		5.340E-02	5.24E-02	5.34E-07
RT	FAILURE OF REACTOR TRIP SYSTEM		1.03E-05	1.03E-05	
7) S2	SMALL LOCA (PIPE RETURN)		2.25E-03	2.25E-03	4.94E-07
FMOBVLVCCFE	<module> CCF OF SOME MOVES OR CHECK VALVS TO OPEN		2.135E-04	2.20E-04	
8) T13	LOSS OF DC BUS 201A		5.650E-02	5.66E-02	4.68E-07
FMOEMDBDELCEB	<MODULE> MD PUMP 9B FAILS TO DELIVER		6.771E-03	6.77E-03	
FQ1PXC14	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
RDC1	FAILURE TO RECOVER DC POWER (SHORT TERM)		2.16E-01	2.16E-01	
RDC2	FAILURE TO RECOVER DC POWER (35 MIN)		4.35E-01	4.35E-01	
9) T3A	STEAM LINE BREAK UPSTREAM OF NRV (S/G #1)		2.450E-04	2.45E-04	4.48E-07
FMOESDPDELD	<MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		1.830E-02	1.83E-02	
OANAF1	COGNITIVE ERROR TO INITIATE BLEED AND FIRD		0.1	1.00E-01	
10) T14	LOSS OF DC BUS 201B		5.340E-02	5.34E-02	4.42E-07
FMOEMDADELCA	<MODULE> MD PUMP TRAIN A FAILS TO DELIVER		6.771E-03	6.77E-03	
FQ1PXC14	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
RDC1	FAILURE TO RECOVER DC POWER (SHORT TERM)		2.16E-01	2.16E-01	
RDC2	FAILURE TO RECOVER DC POWER (35 MIN)		4.35E-01	4.35E-01	
11) T13	LOSS OF DC BUS 201A		5.660E-02	5.66E-02	4.25E-07
FMOEMDBDELCEB	<MODULE> MD PUMP 9B FAILS TO DELIVER		6.771E-03	6.77E-03	
FQ1QX0P4	SD APW PUMP P4 IS O.O.S. FOR MAINT.	1.18E-2	1	1.2E-02	
RDC1	FAILURE TO RECOVER DC POWER (SHORT TERM)		2.16E-01	2.16E-01	
RDC2	FAILURE TO RECOVER DC POWER (35 MIN)		4.35E-01	4.35E-01	
12) T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	4.20E-07
AMODDGAFLTJI	<module> D/G 15G-12U FAULTS		5.241E-02	5.24E-02	
FMOEMDBDELCEB	<MODULE> MD PUMP 9B FAILS TO DELIVER		6.771E-03	6.77E-03	
FQ1PXC14	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
13) T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	4.20E-07
AMODDGBFLTKI	<module> D/G 15G-13U FAULTS		5.241E-02	5.24E-02	
FMOEMDADELCA	<MODULE> MD PUMP TRAIN A FAILS TO DELIVER		6.771E-03	6.77E-03	

DEC-14-95 HU 10:22 NUCLEAR FUEL ENGINEERING FAX NO. 203 665 3273 P.02

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Filter: 'ALL'

CUTSET REPORT

MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	B.E. PROB	MCD./CS. PROB.
14) FQ1EXCP4 T14 FMODDADELCA FQ1QX0P4 RDC1 RDC2	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP. LOSS OF DC BUS 201B <MODULE> MD PUMP TRAIN A FAILS TO DELIVER SD AFW PUMP P4 IS O.O.S. FOR MAINT. FAILURE TO RECOVER DC POWER (SHORT TERM) FAILURE TO RECOVER DC POWER (35 MIN)	1.18E-2	1	1.18E-02	4.01E-07
15) T8 AMODDGAFLYJI FMODDBDELCA FQ1QX0P4	LOSS OF NORMAL POWER INITIATING EVENT <module> D/G 15G 12V FAULTS <MODULE> ME PUMP 9B FAILS TO DELIVER SD AFW PUMP P4 IS O.O.S. FOR MAINT.	1.18E-2	1	1.18E-02	3.81E-07
16) T8 AMODDGBFLTKI FMODDADELCA FQ1QX0P4	LOSS OF NORMAL POWER INITIATING EVENT <module> E/G 15G-13V FAULTS <MODULE> MD PUMP TRAIN A FAILS TO DELIVER SD AFW PUMP P4 IS O.O.S. FOR MAINT.	1.13E-2	1	1.18E-02	3.81E-07
17) T13 FMODSDPFLD FP92X09B RDC1 RDC2	LOSS OF DC BUS 201A <MODULE> SD PUMP FAILS TO DEL AFW TO HEADERS AFW MD PUMP 9B IS O.O.S. DUE TO MAINT. FAILURE TO RECOVER DC POWER (SHORT TERM) FAILURE TO RECOVER DC POWER (35 MIN)	3.83E-3	1	1.83E-02	3.73E-07
18) T14 FMODSDPFLD FP92X09A RDC1 RDC2	LOSS OF DC BUS 201B <MODULE> SD PUMP FAILS TO DEL AFW TO HEADERS AFW MD PUMP 9A IS O.O.S. DUE TO MAINT. FAILURE TO RECOVER DC POWER (SHORT TERM) FAILURE TO RECOVER DC POWER (35 MIN)	3.83E-3	1	1.83E-02	3.52E-07
19) T8 AMODDGAFLYJI FMODSDPFLD FP92X09B	LOSS OF NORMAL POWER INITIATING EVENT <module> D/G 15G-12V FAULTS <MODULE> SD PUMP FAILS TO DEL AFW TO HEADERS AFW MD PUMP 9B IS O.O.S. DUE TO MAINT.	3.83E-3	1	1.83E-02	3.34E-07
20) T8 AMODDGBFLTKI FMODSDPFLD FP92X09A	LOSS OF NORMAL POWER INITIATING EVENT <module> D/G 15G-13V FAULTS <MODULE> SD PUMP FAILS TO DEL AFW TO HEADERS AFW MD PUMP 9A IS O.O.S. DUE TO MAINT.	3.83E-3	1	1.83E-02	3.34E-07
21) T6 RCPSF RECS	LOSS OF SERVICE WATER RCP SEAL FAILURE GIVEN A LOSS OF RCP SEAL COOLING RECOVERY OF RBCCW/SW				
22) T3A FQ1EXCP4 OARAF1	STEAM LINE BREAK UPSTREAM OF NRV (S/G #1) COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP. COGNITIVE ERROR TO INITIATE BLEED AND FEED				
23) T2 FMODCCPDRG MPRONRC OARAF1	LOSS OF MAIN FEEDWATER <MODULE> CCPs OF THE COMMON INJECTION HEADER VALVES FAILURE TO RECOVER MPW GIVEN LOSS OF MPW INITIATING EVENT COGNITIVE ERROR TO INITIATE BLEED AND FEED				
24) T3A FQ1QX0P4 OARAF1	STEAM LINE BREAK UPSTREAM OF NRV (S/G #1) SD AFW PUMP P4 IS C.O.S. FOR MAINT. COGNITIVE ERROR TO INITIATE BLEED AND FEED	1.18E-2	1	1.18E-02	2.89E-07
25) T6 OATRC REXSC	LOSS OF SERVICE WATER OPERATOR ACTION TO TRIP THE RCPs RECOVERY OF RBCCW/SW				
26) T8 FMODCCPDRG	LOSS OF NORMAL POWER INITIATING EVENT <MODULE> CCPs OF THE COMMON INJECTION HEADER VALVES				

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CUTSET REPORT

MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	B.E. PROB.	MOD./CS. PROB.
27) OABAFLNP T13 FP90X09B FQ1PACP4 RDC1 RDC2	COGNITIVE ERROR TO INITIATE BLEED AND PERD./NP INITIATOR LOSS OF DC BUS 201A AFW MD PUMP 9B IS O.O.S. DUE TO MAINT. COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP. FAILURE TO RECOVER DC POWER (SHORT TERM) FAILURE TO RECOVER DC POWER (35 MIN)	3.83E-3	0.1 5.650E-02 1 1.33E-2 2.15E-01 4.35E-01 5.340E-02	1.00E-01 5.66E-02 3.83E-03 1.30E-02 2.16E-01 4.35E-01 5.34E-02	2.65E-07
28) T14 FP90X09A FQ1PACP4 RDC1 RDC2	LOSS OF DC BUS 201B AFW MD PUMP 9A IS O.O.S. DUE TO MAINT. COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP. FAILURE TO RECOVER DC POWER (SHORT TERM) FAILURE TO RECOVER DC POWER (35 MIN)	3.82E-3	1 1.3E-2 2.15E-01 4.35E-01 5.340E-02	3.83E-03 1.30E-02 2.16E-01 4.35E-01 5.34E-02	2.50E-07
29) T1 FMDDSRVFTOV RT	GENERAL PLANT TRANSIENT <module> 1/2 SRVS FAIL TO OPEN UPON DEMAND FAILURE OF REACTOR TRIP SYSTEM		7.994E-03 1.00E-05 9.100E-02	7.99E-03 1.00E-05 9.10E-02	2.48E-07
30) T8 AMODDGAFLTJI FP90X09B FQ1PACP4	LOSS OF NORMAL POWER INITIATING EVENT <module> D/G 15G-12U FAULTS AFW MD PUMP 9B IS O.O.S. DUE TO MAINT. COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.	3.83E-3	1 1.3E-2 9.100E-02 5.241E-02	3.83E-03 1.30E-02 9.10E-02 5.24E-02	2.37E-07
31) T8 AMODDGBFLTKI FP90X09A FQ1PACP4	LOSS OF NORMAL POWER INITIATING EVENT <module> D/G 15G-13U FAULTS AFW MD PUMP 9A IS O.O.S. DUE TO MAINT. COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.	3.83E-3	1 1.3E-2 3.100E+00 2.195E-04	3.83E-03 1.30E-02 3.10E+00 2.20E-04	2.03E-07
32) T1 EMODVLVCCFZ LIF*OPEN PRVRX200	GENERAL PLANT TRANSIENT <module> CCF OF SUMP MOVRS OR CHECK VLVS TO OPEN GIVEN A PRECURSOR, PORVs OR SAFETIES LIFT AND REMAIN OPEN CODE SAFETY RC-200 FAILS TO CLOSE DUE TO MECH. FAILURE	2.98E-3	0.1 1 3.100E+00	1.00E-01 2.98E-03 3.10E+00	2.03E-07
33) T1 EMODVLVCCFZ LIF*OPEN PRVRX201	GENERAL PLANT TRANSIENT <module> CCF OF SUMP MOVRS OR CHECK VLVS TO OPEN GIVEN A PRECURSOR, PORVs OR SAFETIES LIFT AND REMAIN OPEN CODE SAFETY RC-201 FAILS TO CLOSE DUE TO MECH. FAILURE	2.98E-3	0.1 1 5.660E-02	1.00E-01 2.98E-03 5.66E-02	1.96E-07
34) T13 FMHNDDBDELCH FQ1PXOP4 RDC1 RDC2	LOSS OF DC BUS 201A <module> MD PUMP 9B FAILS TO DELIVER OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS. FAILURE TO RECCVER DC POWER (SHORT TERM) FAILURE TO RECCVER DC POWER (35 MIN)		6.771E-03 5.43E-02 2.16E-01 4.35E-01 7.10E-04	6.77E-03 5.43E-02 2.16E-01 4.35E-01 7.10E-04	1.91E-07
35) S3 WCVBAA32	MEDIUM LOCA 2 OF 2 A/S CVs TO TBCCN MOVs ETC ON A LOSS OF AIR.	6.60E-4	0.408 4.65E-02	2.69E-04 4.65E-02	1.90E-07
36) S1 OAFAN QPNBA2BS	SMALL SMALL LOCA (INCLUDES RCP SEAL RUPTURE) OPERATOR ACTION TO RECOVER ESP ROOM VENTILATION (OA AND HI) CCF OF 2/2 ESPES FANS TO START		0.13 3.15E-4 5.340E-02	1.30E-01 3.15E-04 5.34E-02	1.84E-07
37) T14 FMODMDADELCA FQ1PXOP4 RDC1 RDC2	LOSS OF DC BUS 201B <module> MD PUMP TRAIN A FAILS TO DELIVER OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS. FAILURE TO RECOVER DC POWER (SHORT TERM) FAILURE TO RECOVER DC POWER (35 MIN)		6.771E-03 5.43E-02 2.16E-01 4.35E-01 9.100E-02	6.77E-03 5.43E-02 2.16E-01 4.35E-01 9.10E-02	1.75E-07
38) T8 AMODDGAFLTJI FMODDBDELCH FQ1PXOP4	LOSS OF NORMAL POWER INITIATING EVENT <module> D/G 15G-12U FAULTS <module> MD PUMP 9B FAILS TO DELIVER OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS.		6.771E-03 5.43E-02 9.100E-02	6.77E-03 5.43E-02 9.10E-02	1.75E-07
39) T8	LOSS OF NORMAL POWER INITIATING EVENT				

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CUTSET REPORT

MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	B.R. PROB.	MOD./CS. PROB.
	<module> D/G 15G-13U FAULTS		5.241E-02	5.24E-02	
	<MODULE> MD PUMP TRAIN A FAILS TO DELIVER		6.771E-03	6.77E-03	
	OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE PROC. ERRORS.		5.43E-03	5.43E-03	
40) T-3	LOSS OF DC BUS 201A		5.660E-02	5.66E-02	1.75E-07
	<MODULE> CCFs OF THE COMMON INJECTION HEADER VALVES		2.995E-05	3.00E-05	
	OPERATOR RECOVERY MANIPULATIVE ERROR: MFW GIVEN LOSS OF DC BUS 201		0.13	1.30E-01	
	DC POWER RECOVERED (SHORT TERM)		0.795	7.95E-01	
41) S4	LARGE LOCA		6.40E-04	6.40E-04	1.72E-07
	2 OF 2 A/S CVs TO TBCCW ADVs ETC ON A LOSS OF AIR.	6.60E-4	0.408	2.69E-04	
42) T14	LOSS OF DC BUS 201B		5.340E-02	5.34E-02	1.65E-07
	<MODULE> CCFs OF THE COMMON INJECTION HEADER VALVES		2.995E-05	3.00E-05	
	OPERATOR RECOVERY MANIPULATIVE ERROR: MFW GIVEN LOSS OF DC BUS 201		0.13	1.30E-01	
	DC POWER RECOVERED (SHORT TERM)		0.795	7.95E-01	
43) T13	LOSS OF DC BUS 201A		5.660E-02	5.66E-02	1.59E-07
	<MODULE> CCFs OF THE COMMON INJECTION HEADER VALVES		2.995E-05	3.00E-05	
	FAILURE TO RECOVER DC POWER (SHORT TERM)		2.16E-01	2.16E-01	
	FAILURE TO RECOVER DC POWER (35 MIN)		4.35E-01	4.35E-01	
44) S3	MEDIUM LOCA		7.10E-04	7.10E-04	1.56E-07
	<module> CCF OF SUMP MOVs OR CHECK VLVS TO OPEN		2.195E-04	2.20E-04	
45) S3	MEDIUM LOCA		7.10E-04	7.10E-04	1.52E-07
	CCF OF 2 OF 2 AOVs TO CLOSE	3.15E-3	6.80E-02	2.14E-04	
45) T1	GENERAL PLANT TRANSIENT		3.100E-00	3.10E+00	1.51E-07
	TRAIN A IS O.O.S., RC-403 IS CLOSED AND POWER REMOVED		6.99E-02	6.99E-02	
	TRAIN B IS O.O.S., RC-405 IS CLOSED AND POWER REMOVED		6.99E-02	6.99E-02	
	FAILURE OF REACTOR TRIP SYSTEM		1.00E-05	1.00E-05	
47) T14	LOSS OF DC BUS 2013		5.340E-02	5.34E-02	1.50E-07
	<MODULE> CCFs OF THE COMMON INJECTION HEADER VALVES		2.995E-05	3.00E-05	
	FAILURE TO RECOVER DC POWER (SHORT TERM)		2.16E-01	2.16E-01	
	FAILURE TO RECOVER DC POWER (35 MIN)		4.35E-01	4.35E-01	
48) S3	MEDIUM LOCA		7.10E-04	7.10E-04	1.44E-07
	<module> CCF OF HPSI PUMPS, RECIC VALVES OR DISCHARGE VALVES		2.022E-04	2.02E-04	
49) T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	1.43E-07
	<module> D/G 15G-13U FAULTS		5.241E-02	5.24E-02	
	<MODULE> CCFs OF THE COMMON INJECTION HEADER VALVES		2.995E-05	3.00E-05	
50) T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	1.43E-07
	<module> D/G 15G-13U FAULTS		5.241E-02	5.24E-02	
	<MODULE> CCFs OF THE COMMON INJECTION HEADER VALVES		2.995E-05	3.00E-05	
51) S4	LARGE LOCA		6.40E-04	6.40E-04	1.40E-07
	<module> CCF OF SUMP MOVs OR CHECK VLVS TO OPEN		2.195E-04	2.20E-04	
52) S4	LARGE LOCA		6.40E-04	6.40E-04	1.40E-07
	<module> CCF LPSI PUMPS TO START AND RUN		2.100E-4	2.10E-04	
52) S1	SMALL SMALL LOCA (INCLUDES RCP SEAL RUPTURE)		4.55E-03	4.65E-03	1.39E-07
	<MODULE> CCFs OF THE COMMON INJECTION HEADER VALVES		2.395E-05	3.00E-05	
54) S4	LARGE LOCA		6.40E-04	6.40E-04	1.37E-07
	CCF OF 2 OF 2 AOVs TO CLOSE	3.15E-3	6.30E-02	2.14E-04	
55) T3A	STEAM LINE BREAK UPSTREAM OF NRV (S/G #1)		2.450E-00	2.45E-04	1.33E-07
	OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE PROC. ERRORS.		5.43E-03	5.43E-03	
	COGNITIVE ERROR TO INITIATE BLEED AND FEED		0.1	1.00E-01	
56) T6	LOSS OF SERVICE WATER		4.440E-03	4.44E-03	1.33E-07
	<MODULE> CCFs OF THE COMMON INJECTION HEADER VALVES		2.995E-05	3.00E-05	

MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	B.B. PROB.	MOD./CS. PROB.
57) SI OAPAN RAVGAZZB	SMALL SMALL LOCA (INCLUDES RCP SEAL RUPTURE) OPERATOR ACTION TO RECOVER ESP ROOM VENTILATION (OA AND HI) CCF 2/2 RBCCW AOV S FAILING TO OPERATE		4.65E-03 0.13 5.8E-2	4.65E-03 1.30E-01 2.14E-04	1.29E-07
58) SI HISWLOCAL WAVGASWV	SMALL SMALL LOCA (INCLUDES RCP SEAL RUPTURE) RECOVERY ACTION: FAILURE TO LOCALLY OPEN SW AOV(s) COMMON CAUSE FAILURE OF 2/2 SW AOVs TO OPEN GIVEN A SIAG	3.5E-3	4.65E-03 .13 6.80E-2	4.65E-03 1.30E-01 2.14E-04	1.29E-07
59) SI HIRBLOCAL RAVGARBY	SMALL SMALL LOCA (INCLUDES RCP SEAL RUPTURE) RECOVERY ACTION: FAIL TO LOCALLY CLOSE RBCCW AOV(s) COMMON CAUSE FAILURE OF 2/2 RBCCW AOVs TO CLOSE	3.15E-3	4.65E-03 .13 6.8E-02	4.65E-03 1.30E-01 2.14E-04	1.29E-07
60) S4 HMDDCCFP41ST	LARGE LOCA <module> CCF OF WPSI PUMPS, RECIC VALVES OR DISCHARGE VALVES		6.40E-04 2.022E-04	6.40E-04 2.02E-04	1.29E-07
61) T11 RC	LOSS OF VITAL AC PANELS VA10 & VA30 FAILURE OF REACTOR TRIP SYSTEM		1.250E-02 1.00E-05	1.25E-02 1.00E-05	1.25E-07
(2) T8 ADQX13U FMO0MDDELCA FMO0SDPDELD	LOSS OF NORMAL POWER INITIATING EVENT DIESEL GENERATOR 15G-13U OUT OF SERVICE DUE TO MAINTENANCE <MODULE> MD PUMP TRAIN A FAILS TO DELIVER <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS	1.06E-2	9.100E-02 1 6.771E-03	5.10E-02 1.06E-02 6.77E-03	1.20E-07
63) T8 ADQX12U FMO0MDSDELCA FMO0SDPDELD	LOSS OF NORMAL POWER INITIATING EVENT DIESEL GENERATOR 15G-12U OUT OF SERVICE DUE TO MAINTENANCE <MODULE> MD PUMP 9# FAILS TO DELIVER <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS	1.06E-2	9.100E-02 1 6.771E-03	5.10E-02 1.06E-02 6.77E-03	1.20E-07
64) T1 BFRX080 RT	GENERAL PLANT TRANSIENT FAILURE DUE TO OPERATOR ERROR FAILURE OF REACTOR TRIP SYSTEM		3.180E+00 3.77E-3 1.00E-05	3.10E+00 3.77E-03 1.00E-05	1.17E-07
65) T13 F9QX09B PQ1PX0P4 RIC1 RIC2	LOSS OF DC BUS 201A APW MD PUMP 9B IS O.O.S. DUE TO MAINT. OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS. FAILURE TO RECOVER DC POWER (SHORT TERM) FAILURE TO RECOVER DC POWER (35 MIN)	3.83E-3	5.660E-02 1 5.43E-33	5.66E-02 3.83E-03 5.43E-03	1.11E-07
66) T14 F9QX09A PQ1PX0P4 RIC1 RIC2	LOSS OF DC BUS 201B APW MD PUMP 9A IS O.O.S. DUE TO MAINT. OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS. FAILURE TO RECOVER DC POWER (SHORT TERM) FAILURE TO RECOVER DC POWER (35 MIN)	3.83E-3	5.340E-02 1 5.43E-03	5.34E-02 3.83E-03 5.43E-03	1.04E-07
67) T8 AMDDGBFLTK F9QX05A PQ1PX0P4	LOSS OF NORMAL POWER INITIATING EVENT <module> D/G 15G-13U FAULTS APW MD PUMP 9A IS O.O.S. DUE TO MAINT. OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS.	3.33E-3	9.100E-02 5.241E-02 1	9.10E-02 5.24E-02 3.83E-03	9.92E-08
68) TR AMDDGAFLEJ F9QX05B PQ1PX0P4	LOSS OF NORMAL POWER INITIATING EVENT <module> D/G 15G-12U FAULTS APW MD PUMP 9B IS O.O.S. DUE TO MAINT. OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS.	3.33E-3	9.100E-02 5.241E-02 1	9.10E-02 5.24E-02 3.83E-03	9.92E-08
69) T1 DBT0XDE1 DBT2XDF1 FMO0MDEDELCA FMO0SDPDELD	GENERAL PLANT TRANSIENT UNDETECTED DEGRADED BATTERY DB1 (PROB) FRACTION OF BATTERY DB1 FAILURES THAT WILL STABILIZE CHARGER DC1 <MODULE> MD PUMP 9B FAILS TO DELIVER <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		2.95E-4 .66 6.771E-03	2.95E-04 8.60E-01 6.77E-03	5.75E-08
70) T1 BFRX201 RT	GENERAL PLANT TRANSIENT CODE SAFETY RC-201 FAILS TO CLOSE DUE TO MECH. FAILURE FAILURE OF REACTOR TRIP SYSTEM	2.98E-3	3.100E+00 1 1.00E-05	3.10E+00 2.98E-03 1.00E-05	9.24E-08

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CUTSET REPORT

MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	B.R. PROB.	MOD./CS. PROB.
72) T1 PH/BK200 RT	GENERAL PLANT TRANSIENT CODE SAFETY RC-200 FAILS TO CLOSE DUE TO MECH. FAILURE FAILURE OF REACTOR TRIP SYSTEM	2.98E-3	3.100E+00 1	3.10E+00 2.98E-03	9.24E-08
72) S2 OAFAN OPRA2BS	SMALL LOCA (PIPE RUPTURE) OPERATOR ACTION TO RECOVER ESP ROOM VENTILATION (OA AND H1) CCF OF 2/2 ESPRS FANS TO START		2.25E-03 0.13 3.15E-4	2.25E-03 1.30E-01 3.15E-04	9.21E-08
73) S1 HM0DCVFAILST	SMALL SMALL LOCA (INCLUDES RCP SEAL RUPTURE) <module> CHECK VALVE FAILURE CAUSES LPSI PIPE FAILURE		4.65E-03 1.900E-05	4.65E-03 1.98E-05	9.21E-08
74) S5 HM0DCCFP41ST OASGI	STRAM GENERATOR TUBE RUPTURE <module> CCF OF HPSI PUMPS, RECIC VALVES OR DISCHARGE VALVES COGNITIVE ERROR TO ISOLATE STRAM GENERATOR GIVEN SCTR		2.20E-02 2.022E-04 2E 2	2.20E-02 2.02E-04 2.00E-02	8.90E-08
75) T8 ADGQX12U FM0MDDELCA PQ1XCP4	LOSS OF NORMAL POWER INITIATING EVENT DIESEL GENERATOR 15G-129 OUT OF SERVICE DUE TO MAINTENANCE <MODULE> MD PUMP 9B FAILS TO DELIVER COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.	1.06E-2	9.100E-02 1 6.771E-03	9.10E-02 1.06E-02 6.77E-03	8.49E-08
76) T8 ADGQX13J FM0MDDELCA PQ1XCP4	LOSS OF NORMAL POWER INITIATING EVENT DIESEL GENERATOR 15G-13U OUT OF SERVICE DUE TO MAINTENANCE <MODULE> MD PUMP TRAIN A FAILS TO DELIVER COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.	1.06E-2	9.100E-02 1 6.771E-03	9.10E-02 1.06E-02 6.77E-03	8.49E-08
77) T3A FM0SDPDEL MAYG190A	STRAM LINE BREAK UPSTREAM OF NRV (S/C #1) <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS RANDOM MECHANICAL FAILURE OF ADV MS-190A	3.15E-3	2.450E-04 1.330E-02 6	2.45E-04 1.83E-02 1.89E-02	8.47E-08
78) T3A FM0SDPDEL MAYG190B	STEAM LINE BREAK UPSTREAM OF NRV (S/G #1) <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS RANDOM MECHANICAL FAILURE OF ADV MS-150B	3.15E-3	2.450E-04 1.330E-02 6	2.45E-04 1.83E-02 1.89E-02	8.47E-08
79) T11 AM0DCB7LTKI FM0MDDELCA FM0SDPDEL	LOSS OF VITAL AC PANELS VA10 & VA30 <module> D/G 15G-13U FAULTS <MODULE> MD PUMP TRAIN A FAILS TO DELIVER <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		1.250E-02 5.241E-02 6.771E-03 1.830E-02	1.25E-02 5.24E-02 6.77E-03 1.83E-02	8.12E-08
80) T8 ADGQX12U FM0MDDELCA PQ1XCP4	LOSS OF NORMAL POWER INITIATING EVENT DIESEL GENERATOR 15G-12U OUT OF SERVICE DUE TO MAINTENANCE <MODULE> MD PUMP 9B FAILS TO DELIVER SD APW PUMP P4 IS C.O.S. FOR MAINT.	1.06E-2	9.100E-02 1 6.771E-03	9.10E-02 1.06E-02 6.77E-03	7.71E-08
81) S4 OACV YM0DCCBSWG	LARGE LOCA COGNITIVE ERROR TO RECOVER DC SWGR ROOM VENTILATION <module> DC SWGR ROOMS A & B COMMON CAUSE FAILURES		6.40E-04 1.0E-02 1.187E-02	6.40E-04 1.00E-02 1.19E-02	7.60E-08
82) T1 DP10XDBL DP12XDBL FM0MDDELCA PQ1XCP4	GENERAL PLANT TRANSIENT UNDETECTED DEGRADED BATTERY DB1 (PROB) FRACTION OF BATTERY DB1 FAILURES THAT WILL STABILIZE CHARGER DC1 <MODULE> MD PUMP 9B FAILS TO DELIVER COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		3.100E+00 2.95E-4 .86 6.771E-03	3.10E+00 2.95E-04 8.60E-01 6.77E-03	6.92E-08
83) T14 FM0MDDELCA OATDPUMP RDC1 RDC2	LOSS OF DC BUS 201B <MODULE> MD PUMP TRAIN A FAILS TO DELIVER COGNITIVE ERROR TO START TO APW PUMP FAILURE TO RECOVER DC POWER (SHORT TERM) FAILURE TO RECOVER DC POWER (35 MIN)		5.340E-02 6.771E-03 2.80E-3 2.16E-01 4.35E-01	5.34E-02 6.77E-03 2.80E-03 2.16E-01 4.35E-01	6.79E-08
84) T8 ADGQX12U FM0SDPDEL FP9X09B	LOSS OF NORMAL POWER INITIATING EVENT DIESEL GENERATOR 15G-12U OUT OF SERVICE DUE TO MAINTENANCE <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS APW MD PUMP 9B IS O.O.S. DUE TO MAINT.	1.06E-2	9.100E-02 1 1.830E-02	9.10E-02 1.06E-02 1.83E-02	6.76E-08
		3.83E-3	1	3.83E-03	

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CUTSET REPORT

MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	B.B. PROB	MOD./CS. PROB.
85) S2	SMALL LOCA (PIPE RUPTURE)		2.25E-03	2.25E-03	6.74E-08
FMODCCPHDRG	<MODULE> CCPs OF THE COMMON INJECTION HEADER VALVES		2.995E-05	3.00E-05	
86) T1	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	6.28E-08
D8T0XB1	UNDETECTED DEGRADED BATTERY DB1		2.95E-4	2.95E-04	
D8T2XB1	FRACTION OF BATTERY DB1 FAILURES THAT WILL STABILIZE CHARGER DC1	(PROB)	.86	8.60E-01	
FMODM8DELCA	<MODULE> MD PUMP 9B FAILS TO DELIVER		6.771E-03	6.77E-03	
FQ1QX0P4	SD APW PUMP P4 IS O.O.S. FOR MAINT.		1	1.10E-02	
87) S2	SMALL LOCA (PIPE RUPTURE)	1.18E-2	2.25E-03	2.25E-03	6.27E-08
OAPAN	OPERATOR ACTION TO RECOVER ESP ROOM VENTILATION (OA AND HI)		0.13	1.30E-01	
RAVCA22B	CCF 2/2 RBCCW MOV B FAILING TO OPERATE	3.15E-3	6.8E-2	2.14E-04	
88) S2	SMALL LOCA (PIPE RUPTURE)		2.25E-03	2.25E-03	6.27E-08
HISWLOCAL	RECOVERY ACTION: FAILURE TO LOCALLY OPEN SW ACV(s)		.13	1.30E-01	
WAVGASWV	COMMON CAUSE FAILURE OF 2/2 SW MOVs TO OPEN GIVEN A SIAS	3.15E-3	6.80E-2	2.14E-04	
89) S2	SMALL LOCA (PIPE RUPTURE)		2.25E-03	2.25E-03	6.27E-08
HTRBLOCAL	RECOVERY ACTION: FAIL TO LOCALLY CLOSE RBCCW MOV(s)		.13	1.30E-01	
RAVGARBV	COMMON CAUSE FAILURE OF 2/2 RBCCW MOVs TO CLOSE	3.15E-3	6.8E-02	2.14E-04	
90) TR	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	6.12E-08
AMOD24LHPI	<module> FAILURE OF BUS 24C LNP LOGIC		5.430E-03	5.43E-03	
FMODM8DELCA	<MODULE> MD PUMP 9B FAILS TO DELIVER		6.771E-03	6.77E-03	
FMODSDPDEL	<MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		1.830E-02	1.83E-02	
51) T3A	STEAM LINE BREAK UPSTREAM OF NRV (S/G #1)		2.450E-04	2.45E-04	5.02E-08
FQ1PXC04	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
MAVG19JA	RANDOM MECHANICAL FAILURE OF ADV MS-190A	3.15E-3	6	1.89E-02	
52) T3A	STEAM LINE BREAK UPSTREAM OF NRV (S/G #1)		2.450E-04	2.45E-04	6.02E-08
FQ1PXC04	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
MAVG190B	RANDOM MECHANICAL FAILURE OF ADV MS-190B	3.15E-3	6	1.89E-02	
93) T3A	STEAM LINE BREAK UPSTREAM OF NRV (S/G #1)		2.450E-04	2.45E-04	5.86E-08
FMODSDPDEL	<MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		1.830E-02	1.83E-02	
FMOD404FTOI7	<module> RC-404 FAILS TO OPEN		1.306E-02	1.31E-02	
94) T3A	STEAM LINE BREAK UPSTREAM OF NRV (S/G #1)		2.450E-04	2.45E-04	5.86E-08
FMODSDPDEL	<MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		1.830E-02	1.83E-02	
FMOD402FTOI7	<module> RC-402 FAILS TO OPEN		1.306E-02	1.31E-02	
95) T11	LOSS OF VITAL AC PANELS VA19 & VA30		1.250E-02	1.25E-02	5.77E-08
AMODINGPLTKI	<module> D/G 15C-130 FAULTS		5.241E-02	5.24E-02	
FMODM8DELCA	<MODULE> MD PUMP TRAIN A FAILS TO DELIVER		6.771E-03	6.77E-03	
FQ1PXC04	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
96) T2	LOSS OF MAIN FEEDWATER		7.000E-01	7.00E-01	5.67E-08
FMODCCPHDRG	<MODULE> CCPs OF THE COMMON INJECTION HEADER VALVES		2.995E-05	3.00E-05	
MAVG190B	RANDOM MECHANICAL FAILURE OF ADV MS-190B	3.15E-3	6	1.89E-02	
MFNTR0RC	FAILURE TO RECOVER MPW GIVEN LOSS OF MPW INITIATING EVENT		1.43E-01	1.43E-01	
97) T2	LOSS OF MAIN FEEDWATER		7.000E-01	7.00E-01	5.67E-08
FMODCCPHDRG	<MODULE> CCPs OF THE COMMON INJECTION HEADER VALVES		2.995E-05	3.00E-05	
MAVG190A	RANDOM MECHANICAL FAILURE OF ADV MS-190A	3.15E-3	6	1.89E-02	
MFNTR0RC	FAILURE TO RECOVER MPW GIVEN LOSS OF MPW INITIATING EVENT		1.43E-01	1.43E-01	
99) T2	LOSS OF MAIN FEEDWATER		7.000E-01	7.00E-01	5.59E-08
FMODSRVTF0V	<MODULE> 1/2 SRVS FAIL TO OPEN UPON DEMAND		7.984E-03	7.98E-03	
R1	FAILURE OF REACTOR TRIP SYSTEM		1.00E-05	1.00E-05	
93) T1	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	5.58E-08
LIPTOPRN	GIVEN A PRECURSOR, PORVs OR SAFETIES LIPT AND REMAIN OPEN		0.1	1.00E-01	
PRVBR2C0	CODE SAFETY RC-200 FAILS TO CLOSE DUE TO MCH. FAILURE	2.98E-3	1	2.98E-03	

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CUTSET REPORT

MODULE/EVENT NAME	DESCRIPTION	RPT	EXPOSURE	P.W. PROB.	MOD./CS. PROB.
100) T1 WALGASWV LJFTOPEN PEVEX201 WALGASWV	COMMON CAUSE FAILURE OF 2/2 SERVICE WATER AOV'S TO OPERATE GENERAL PLANT TRANSIENT GIVEN A PRECURSOR, PORVs OR SAFETIES LIFT AND REMAIN OPEN CODE SAFETY KC-201 FAILS TO CLOSE DUE TO MECH. FAILURE COMMON CAUSE FAILURE OF 2/2 SERVICE WATER AOV'S TO OPERATE	3.70E-5	6.8E-2	6.04E-05	3.10E+00 3.10E+00 5.58E-08
101) T1 DET0XD01 DET2XD01 FMODSDPDELD FI9QX09B	UNDETECTED DEGRADED BATTERY DB1 FRACTION OF BATTERY DB1 FAILURES THAT WILL STABILIZE CHARGER DC1 <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS APW MD PUMP 93 IS O.O.S. DUE TO MAINT.	3.70E-5	6.8E-2	6.04E-05	3.10E+00 3.10E+00 5.51E-08
102) TE ACREC54 AMODCCFLNPFJAB FMODSDPDELD	LOSS OF NORMAL POWER INITIATING EVENT RECOVERY OF AC POWER IN 54 MINUTES <module> COMMON CAUSE FAILURE OF AC POWER GIVEN AN LMP <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS	3.83E-2	1	3.83E-03	9.10E-02 9.10E-02 5.48E-08
103) T3A FC1QX0P4 MAVG190A	STEAM LINE BREAK UPSTREAM OF NRV (S/G #1) SD APW PUMP P4 IS O.O.S. FOR MAINT. RANDOM MECHANICAL FAILURE OF ADV MS-190A	1.18E-2	1	1.18E-02	2.45E-04 2.45E-04 5.46E-08
104) T3A FC1QX0P4 MAVG190B	STEAM LINE BREAK UPSTREAM OF NRV (S/C #1) SD APW PUMP P4 IS O.O.S. FOR MAINT. RANDOM MECHANICAL FAILURE OF ADV MS-190B	3.15E-3	6	1.89E-02	2.45E-04 2.45E-04 5.46E-08
105) T8 AE2GX072 FMODMDADELCA FMODSDPDELD	LOSS OF NORMAL POWER INITIATING EVENT TIE BREAKER 24D-IT-2 FAILS TO OPEN <MODULE> MD PUMP TRAIN A FAILS TO DELIVER <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS	7.96E-4	6	4.78E-03	9.10E-02 9.10E-02 5.39E-08
105) T8 AE2GX072 FMODMDADELCA FMODSDPDELD	LOSS OF NORMAL POWER INITIATING EVENT TIE BREAKER 24C-IT-2 FAILS TO OPEN <MODULE> MD PUMP 9B FAILS TO DELIVER <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS	7.96E-4	6	4.78E-03	9.10E-02 9.10E-02 5.39E-08
107) T11 AMODDGEFLTRC FMODMDADELCA FQ1QX0F4	LOSS OF VITAL AC PANELS VA19 & VA30 <module> D/G 15G-13U FAULTS <MODULE> MD PUMP TRAIN A FAILS TO DELIVER SD APW PUMP P4 IS O.O.S. FOR MAINT.	1.18E-2	1	1.18E-02	5.24E-02 5.24E-02 5.23E-08
108) T8 AMOD24TLNPFRT FMODMDADELCA FMODSDPDELD	LOSS OF NORMAL POWER INITIATING EVENT <module> FAILURE OF BUS 24D LMP LOCIC <MODULE> MD PUMP TRAIN A FAILS TO DELIVER <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS	1.18E-2	1	1.18E-02	9.10E-02 9.10E-02 5.23E-08
109) S5 OAXCV OAXGT YMDCCCHSMG	COGNITIVE ERROR TO RECOVER DC SWGR ROOM VENTILATION COGNITIVE ERROR TO ISOLATE STEAM GENERATOR GIVEN BGTR <module> DC SWGR ROOMS A & B COMMON CAUSE FAILURES	3.15E-3	6	1.89E-02	2.20E-02 2.20E-02 5.22E-08
110) T8 FMODCCFHDRG MAVG190B	LOSS OF NORMAL POWER INITIATING EVENT <MODULE> CCPs OF THE COMMON INJECTION HEADER VALVES RANDOM MECHANICAL FAILURE OF ADV MS-190B	3.15E-3	6	1.89E-02	2.99E-05 3.00E-05 5.15E-08
111) T8 FMODCCFHDRG MAVG190A	LOSS OF NORMAL POWER INITIATING EVENT <MODULE> CCPs OF THE COMMON INJECTION HEADER VALVES RANDOM MECHANICAL FAILURE OF ADV MS-190A	3.15E-3	6	1.89E-02	2.99E-05 3.00E-05 5.15E-08
112) T1 AMODCCFLNPFJAB FMODSDPDELD IILNXX00	GENERAL PLANT TRANSIENT <module> COMMON CAUSE FAILURE OF AC POWER GIVEN AN LMP <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS LOSS OF NORMAL POWER	3.15E-3	6	1.89E-02	3.10E+00 3.10E+00 5.12E-08

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MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	F.R. PROB.	MOD./CS. PROB.
113) T1	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	4.97E-08
BMODBAPPABIOPQ	<module>NORMAL FLOW PATHS WITH BORIC ACID PUMPS FAILS		6.891E-02	6.89E-02	
BMODGRAVITINPQ	<module>EMERGENCY BORATION GRAVITY FEED FAILS		2.327E-02	2.33E-02	
RT	FAILURE OF REACTOR TRIP SYSTEM		1.00E-05	1.00E-05	
114) T6	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	4.80E-08
ALGQXI2U	DIFFER. GENERATOR 15G-12U OUT OF SERVICE DUE TO MAINTENANCE	1.06E-2	1	1.06E-02	
FP9QX09B	APW MD PUMP 9B IS O.O.S. DUE TO MAINT.	3.83E-3	1	3.83E-03	
FC1PXC14	COGNITIVE ERROR PCR OPS. FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
115) T6	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	4.77E-08
AMODDGAFLTJI	<module> D/G 15G 12U FAULTS		5.241E-02	5.24E-02	
RT	FAILURE OF REACTOR TRIP SYSTEM		1.00E-05	1.00E-05	
116) T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	4.77E-08
AMODDGBFLTKI	<module> D/G 15G-13U FAULTS		5.241E-02	5.24E-02	
RT	FAILURE OF REACTOR TRIP SYSTEM		1.00E-05	1.00E-05	
117) T2	LOSS OF MAIN FEEDWATER		7.000E-01	7.00E-01	4.74E-08
FMODMDDBLCLB	<MODULE>MD PUMP 9B FAILS TO DELIVER		6.771E-03	6.77E-03	
RT	FAILURE OF REACTOR TRIP SYSTEM		1.00E-05	1.00E-05	
118) T2	LOSS OF MAIN FEEDWATER		7.000E-01	7.00E-01	4.74E-08
FMODMADELCA	<MODULE> MD PUMP TRAIN A FAILS TO DELIVER		6.771E-03	6.77E-03	
RT	FAILURE OF REACTOR TRIP SYSTEM		1.00E-05	1.00E-05	
119) T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	4.68E-08
FMODMADELCA	<MODULE> MD PUMP TRAIN A FAILS TO DELIVER		6.771E-03	6.77E-03	
FMODSDDEBLD	<MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		1.830E-02	1.83E-02	
WMODPSCF7BCLW	<module>SW PUMP 5C FAILS TO START OR ESPAS EQUIPMENT FAILS		4.147E-03	4.15E-03	
120) T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	4.68E-08
FMODMDEBLCLB	<MODULE>MD PUMP 9B FAILS TO DELIVER		6.771E-03	6.77E-03	
FMODSDDEBLD	<MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		1.830E-02	1.83E-02	
WMODPSAFTSALW	<module>SN PUMP 5A FAILS TO START OR ESPAS EQUIPMENT FAILS		4.147E-03	4.15E-03	
121) S1	SMALL SMELL LOCA (INCLADBC RCP ORAL RUPTURE)		4.65E-03	4.65E-03	4.65E-08
RT	FAILURE OF REACTOR TRIP SYSTEM		1.00E-05	1.00E-05	
122) T11	LOSS OF VITAL AC PANELS VA10 & VA30		1.250E-02	1.25E-02	4.59E-08
AMODDGEFLTKI	<module> D/G 15G-13U FAULTS		5.241E-02	5.24E-02	
FMODSDDELD	<MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		1.830E-02	1.83E-02	
FP9QX09A	APW MD PUMP 9A IS O.O.S. DUE TO MAINT.	3.83E-3	1	3.83E-03	
123) T2	LOSS OF MAIN FEEDWATER		7.000E-01	7.00E-01	4.58E-08
BMODVLWCCPZ	<module> CCF OF SUMP MOVES OF CHECK VALVS TC OPEN		2.195E-04	2.20E-04	
LIFTOPEN	GIVEN A RECURSOR, PORVs OR SAFETIES LIFT AND REMAIN OPEN		0.1	1.00E-11	
PRVBX201	CODE SAFETY RC-201 FAILS TO CLOSE DUE TO MECH. FAILURE	2.98E-3	1	2.98E-33	
124) T2	LOSS OF MAIN FEEDWATER		7.000E-01	7.00E-01	4.58E-08
BMODVLWCCPZ	<module> CCF OF SUMP MOVES OF CHECK VALVS TC OPEN		2.195E-04	2.20E-04	
LIFTOPEN	GIVEN A RECURSOR, PORVs OR SAFETIES LIFT AND REMAIN OPEN		0.1	1.00E-11	
PRVBX200	CODE SAFETY RC-200 FAILS TO CLOSE DUE TO MECH. FAILURE	2.98E-3	1	2.98E-33	
125) T4	STEAM LINE BREAK DOWNSTREAM OF THE NR7 S		2.200E-03	2.20E-03	4.50E-08
XINQXIN2	125VDC/120VAC INVERTER INV-2 OUT OF SERVICE FOR MAINTENANCE	1.53E-2	1	1.53E-32	
XINTXIN1	125VDC/120VAC INVERTER INV-1 FAILS TO PROVIDE PROPER OUTPUT	5.57E-5	1	1.34E-33	
126) T4	STEAM LINE BREAK DOWNSTREAM OF THE NR7 S		2.200E-03	2.20E-03	4.50E-08
XINQXIN1	125VDC/120VAC INVERTER INV-1 OUT OF SERVICE FOR MAINTENANCE	1.53E-2	1	1.53E-32	
XINTXIN2	125VDC/120VAC INVERTER INV-2 FAILS TO PROVIDE PROPER OUTPUT	5.57E-5	1	1.34E-33	
127) S2	SMALL LOCA (PIPE RUPTURE)		2.25E-03	2.25E-03	4.46E-08
BMODCVFAILST	<module> CHECK VALVE FAILURE CAUSES LPSI PIPE FAILURE		1.980E-05	1.98E-05	

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MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	P.E. PROB.	MOD./CS. PROB.
128) T6 RC	LOSS OF SERVICE WATER FAILURE OF REACTOR TRIP SYSTEM		4.440E-03 1.00E-05	4.44E-03 1.00E-05	4.44E-08
129) T8 AMOD24CLNPI FMODMDBDELCEB FQ1PXCPC4	LOSS OF NORMAL POWER INITIATING EVENT <module> FAILURE OF BUS 24C LNP LOGIC <MODULE> MD PUMP 9E FAILS TO DELIVER COGNITIVE ERROR FOR OPS. FAILING TO INIT SD PUMP.		9.100E-02 5.430E-03 6.771E-03 1.3E-2	9.10E-02 5.43E-03 6.77E-03 1.30E-02	4.35E-08
130) T1 AMOD28CFTLB AMODDGAFLTJ1 FMODMDBDELCEB FMODSDPDRILD	GENERAL PLANT TRANSIENT <module> FAILURE OF BUS 24C FAST TRANSFER LOGIC <module> D/G 15G-12U FAULTS <MODULE> MD PUMP 9E FAILS TO DELIVER <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		3.100E+00 2.144E-03 5.241E-02 6.771E-03 1.830E-02	3.10E+00 2.14E-03 5.24E-02 6.77E-03 1.83E-02	4.32E-08
131) VID	V-SEQUENCE: CHARGING LINE		4.290E-08	4.29E-08	4.29E-08
132) T1 FMODCCFHDRG NEWSYMR1 OARAF2	GENERAL PLANT TRANSIENT <MODULE> CCPs OF THE COMMON INJECTION HEADER VALVES NON-RECOVERABLE MPW FAILURES CAUSING LOSS OF TOTAL MPW COGNITIVE ERROR TO INITIATE B & P GIVEN ORSGI FAILS	AFTER	3.100E+00 2.995E-05 4.57E-03 0.1	3.10E+00 3.00E-05 4.57E-03 1.00E-01	4.24E-08
133) T3A FQ1PXCPC4 FMOD402FTOI7	STEAM LINE BREAK UPSTREAM OF MRV (S/C #1) COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP. <module> RC-402 FAILS TO OPEN		2.450E-04 1.3E-2 1.306E-02	2.45E-04 1.30E-02 1.31E-02	4.16E-08
134) T3A FQ1PXCPC4 FMOD404FTOI7	STEAM LINE BREAK UPSTREAM OF MRV (S/C #1) COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP. <module> RC-414 FAILS TO OPEN		2.450E-04 1.3E-2 1.306E-02	2.45E-04 1.30E-02 1.31E-02	4.16E-08
135) T6 ACRRC54 AMODDGAFLTJ1 AMODDGBFLTK1 FMODSDPDELD	LOSS OF NORMAL POWER INITIATING EVENT RECOVERY OF AC POWER IN 54 MINUTES <module> D/G 15G-12U FAULTS <module> D/G 15G-13U FAULTS <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		9.100E-02 4.35E-2 5.241E-02 5.241E-02 1.830E-02	9.10E-02 9.09E-03 5.24E-02 5.24E-02 1.83E-02	4.16E-08
136) S1 FMODCCFPPSW	SMALL SMALL LOCA (INCLUDES RCP SEAL RUPTURE) <module> COMMON CAUSE FAILURE OF PUMPS AND CVS		8.744E-06 3.100E-00	8.65E-03 3.10E+00	4.07E-08
137) T1 AMOD28CFTLB AMODDGAFLTJ1 FMODMDBDELCEB FMODSDPDRILD	GENERAL PLANT TRANSIENT <module> FAILURE OF BUS 24D TO FAST TRANSFER <module> D/G 15G-13U FAULTS <MODULE> MD PUMP TRAIN A FAILS TO DELIVER <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		2.019E-03 5.241E-02 6.771E-03 1.830E-02	2.02E-03 5.24E-02 6.77E-03 1.83E-02	4.06E-08
138) T9 FMODHDFVLBG OARAF1	MAIN FEEDLINE BREAK IN TURBINE BUILDING (UPSTREAM OF MPW AIR ASST. <MODULE> AO CV PW-12B OR REG VLV PW-43B FAILURE COGNITIVE ERROR TO INITIATE BLEND AND FRRL		9.200E-04 4.404E-04 0.1	9.20E-04 4.40E-04 1.00E-01	4.05E-08
139) T3A FMODSDEDELD HIBAF1	STEAM LINE BREAK UPSTREAM OF MRV (S/G #1) <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS MANIPULATIVE ERROR TO INITIATE FEED AND BIKRD		2.450E-04 1.830E-02 9.03E-5	2.45E-04 1.83E-02 9.03E-03	4.05E-08
140) S4 OAMCV YMODRARDMAGPI YMODRARDMAGPI	LARGE LOCA COGNITIVE ERROR TO RECOVER DC SWGR ROOM VENTILATION <module> DC SWGR A CHW, SW OR FAN RANDOM FAILURES <module> DC SWGR B CHW, SW OR FAN RANDOM FAILURES		6.40E-04 1.0E-02 7.948E-02 7.929E-02	6.40E-04 1.00E-02 7.95E-02 7.93E-02	4.03E-08
141) T8 AMOD24CLNPI FMODMDBDELCEB FQ1QX0E4	LOSS OF NORMAL POWER INITIATING EVENT <module> FAILURE OF BUS 24C LNP LOGIC <MODULE> MD PUMP 9B FAILS TO DELIVER SD APW PUMP P4 IS O.O.S. FOR MAINT.		9.100E-02 5.430E-03 6.771E-03 1	9.10E-02 5.43E-03 6.77E-03 1.18E-02	3.95E-08
142) T1 DPTOXDB1	GENERAL PLANT TRANSIENT UNEXPECTED DEGRADED BATTERY DB1	(PROB)	3.100E+00 2.95E-4	3.10E+00 2.95E-04	3.92E-08

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MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	E. E. PROB.	MOD./CS. PROB.
	FRACTIONS OF BATTERY DBI FAILURES THAT WILL STABILIZE CHARGER DC1		.86	8.60E-01	
	AFW MD PUMP 9B IS O.O.S. DUE TO MAINT.	3.83E-3	1	3.83E-03	
	COGNITIVE ERROR FOR OPS FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
143) T2	LOSS OF MAIN FEEDWATER		7.000E-01	7.00E-01	3.92E-08
	<MODULE> CCPs OF THE COMMON INJECTION HEADER VALVES		2.995E-05	3.00E-05	
	FAILURE TO RECOVER MPW GIVEN LOSS OF MPW INITIATING EVENT		1.43E-01	1.43E-01	
	<module> RC-402 FAILS TO OPEN		1.306E-02	1.31E-02	
144) T2	LOSS OF MAIN FEEDWATER		7.000E-01	7.00E-01	3.92E-08
	<MODULE> CCPs OF THE COMMON INJECTION HEADER VALVES		2.995E-05	3.00E-05	
	FAILURE TO RECOVER MPW GIVEN LOSS OF MPW INITIATING EVENT		1.43E-01	1.43E-01	
	<module> RC-434 FAILS TO OPEN		1.306E-02	1.31E-02	
145) T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	3.89E-08
	RECOVERY OF AC POWER IN 54 MINUTES		4.35E-2	9.09E-03	
	<module> COMMON CAUSE FAILURE OF AC POWER GIVEN AN LSP		3.622E-03	3.62E-03	
	COGNITIVE ERROR FOR OPS, FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
146) T1	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	3.88E-08
	<module> D/G 15G-12U FAULTS		5.241E-02	5.24E-02	
	<module> D/G 15G-13U FAULTS		5.241E-02	5.24E-02	
	<MODULE> SD PUMP FAILS TO DEL AFW TO HEADERS		1.830E-02	1.83E-02	
	LOSS OF NORMAL POWER		2.49E-4	2.49E-04	
147) T14	LOSS OF DC BUS 201B		5.340E-02	5.34E-02	5.84E-08
	AFW MD PUMP 9A IS O.O.S. DUE TO MAINT.	3.33E-3	1	3.83E-03	
	COGNITIVE ERROR TO START TD AFW PUMP		2.00E-3	2.00E-03	
	FAILURE TO RECOVER DC POWER (SHORT TERM)		2.16E-01	2.16E-01	
	FAILURE TO RECOVER DC POWER (35 MIN)		4.35E-01	4.35E-01	
148) T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	3.83E-08
	TIE BREAKER 24D-IT-2 FAILS TO OPEN	7.96E-4	6	4.78E-03	
	<MODULE> MD PUMP TRAIN A FAILS TO DELIVER		6.771E-03	6.77E-03	
	COGNITIVE ERROR FOR OPS, FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
149) T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	2.83E-08
	TIE BREAKER 24C-IT-2 FAILS TO OPEN	7.96E-4	6	4.78E-03	
	<MODULE> MD PUMP 9B FAILS TO DELIVER		6.771E-03	6.77E-03	
	COGNITIVE ERROR FOR OPS, FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
150) T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	3.82E-08
	<module> D/G 15G-12U FAULTS		5.241E-02	5.24E-02	
	<MODULE> SD PUMP FAILS TO DEL AFW TO HEADERS		1.830E-02	1.83E-02	
	<MODULE> UV LOGIC FAILS TO OPERATE MD PUMP 9B		4.375E-04	4.38E-04	
151) T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	3.82E-08
	<module> D/G 15G-13U FAULTS		5.241E-02	5.24E-02	
	<MODULE> SD PUMP FAILS TO DEL AFW TO HEADERS		1.830E-02	1.83E-02	
	<MODULE> UV LOGIC COMPONENTS FAIL TO OPERATE MD PUMP 9A		4.375E-04	4.38E-04	
152) T1	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	3.78E-08
	GIVES A PRECURSOR, PORVs OR SAFETIES LIFT AND REMAIN OPEN		0.1	1.00E-01	
	OPERATOR ACTION TO RECOVER ESP ROOM VENTILATION (OA AND II)		0.13	1.30E-01	
	CODE SAFETY RC-200 FAILS TO CLOSE DUE TO MECH. FAILURE	2.98E-3	1	2.98E-03	
	CCF OF 2/2 ESTRS FAILS TO START		3.15E-4	3.15E-04	
153) T1	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	3.78E-08
	GIVES A PRECURSOR, PORVs OR SAFETIES LIFT AND REMAIN OPEN		0.1	1.00E-01	
	OPERATOR ACTION TO RECOVER ESP ROOM VENTILATION (OA AND II)		0.13	1.30E-01	
	CODE SAFETY RC-201 FAILS TO CLOSE DUE TO MECH. FAILURE	2.98E-3	1	2.98E-03	

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MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	R.F. PROB.	MOD./CS. PROB.
154: OPTBA2BE S3	CCF OF 2/2 ESPES PANS TO START MEDIUM LOCA		3.15E-4	3.15E-08	
LCVABCCA	CC FAILURE OF 2 OF 3 CHECK VALVES (2-SI-217, 27, 37 & 47)	8.58E-8	7.10E-04	7.10E-01	3.78E-08
155: T3A	STEAM LINE BREAK UPSTREAM OF NRV (S/G #1)		2.45E-04	2.45E-04	3.78E-08
FQ1QX0P4	SD APW PUMP P4 IS O.O.S. FOR MAINT.	1.18E-2	1	1.18E-02	
PMOD404FTOIV	<module> RC-404 FAILS TO OPER		1.306E-02	1.31E-02	
156: T3A	STEAM LINE BREAK UPSTREAM OF NRV (S/G #1)		2.45E-04	2.45E-04	3.78E-08
FQ1QX0P4	SD APW PUMP P4 IS O.O.S. FOR MAINT.	1.18E-2	1	1.18E-02	
PMOD402FTOIV	<module> RC-402 FAILS TO OPER		1.306E-02	1.31E-02	
157: S1	SMALL SMALL LOCA (INCLUDES RCP SEAL RUPTURE)		4.65E-02	4.65E-03	3.75E-08
HIRELOCAL	RECOVERY ACTION: FAIL TO LOCALLY CLOSE RBCCW BOV(s)		.13	1.30E-01	
RMODRB81AFIP	<module> 2-RB-8.1A FAILS TO CLOSE		5.572E-03	5.57E-03	
RMODRBAOVFIP	<module> 2-RB-210 OR 2-RB-8.1E FAIL TO CLOSE		1.112E-02	1.11E-01	
158: T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	3.72E-08
AMOD24DIMPBEI	<module> FAILURE OF BUS 24D IMP LOGIC		4.638E-03	4.64E-03	
PMODMADLCA	<MODULE> MD PUMP TRAIN A FAILS TO DELIVER		6.771E-03	6.77E-03	
FQ1XCP4	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
159: T1	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	3.63E-08
AMODCCPLMPJKRB	<module> COMMON CAUSE FAILURE OF AC POWER GIVEN AN LBP		3.622E-03	3.62E-03	
FQ1XCP4	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
IIINX000	LOSS OF NORMAL POWER		2.49E-4	2.49E-04	
160: T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	3.56E-08
PMODCCPHDRG	<MODULE> CCFs OF THE COMMON INJECTION HEADER VALVES		2.935E-05	3.00E-05	
PMOD402FTOIV	<module> RC 402 FAILS TO OPEN		1.336E-02	1.21E-02	
161: T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	3.56E-08
PMODCCPHDRG	<MODULE> CCFs OF THE COMMON INJECTION HEADER VALVES		2.935E-05	3.00E-05	
PMOD404FTOIV	<module> RC-404 FAILS TO OPEN		1.336E-02	1.31E-02	
162: T8	LOSS OF NORMAL POWER INITIATING EVENT		9.110E-02	9.10E-02	3.55E-08
ADGQX12U	DIESEL GENERATOR 15C-12U OUT OF SERVICE DUE TO MAINTENANCE	1.06E-2	1	1.06E-02	
PMODMDDLCLB	<MODULE> MD PUMP 9B FAILS TO DELIVER		6.771E-03	6.77E-03	
FQ1PX0P4	OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS.		5.43E-03	5.43E-03	
163: T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	3.55E-08
ADGQX13U	DIESEL GENERATOR 15G-13U OUT OF SERVICE DUE TO MAINTENANCE	1.06E-2	1	1.06E-02	
PMODMADLCA	<MODULE> MD PUMP TRAIN A FAILS TO DELIVER		6.771E-03	6.77E-03	
FQ1PX0P4	OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS.		5.43E-03	5.43E-03	
164: T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	3.54E-08
ACRECS4	RECOVERY OF AC POWER IN 54 MINUTES		4.35E-2	9.09E-02	
AMODCCPLMPJKRB	<module> COMMON CAUSE FAILURE OF AC POWER GIVEN AN LBP		3.622E-03	3.62E-03	
FQ1QX0P4	SD APW PUMP P4 IS O.O.S. FOR MAINT.	1.18E-2	1	1.18E-02	
165: T1	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	3.53E-08
DRSTXV10	LOSS OF DC CONTROL PANEL DV10 (201A-IV)	3.83E-6	24	9.19E-05	
PMODMDDLCLB	<MODULE> MD PUMP 9B FAILS TO DELIVER		6.771E-03	6.77E-03	
PMODSDPDLCD	<MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		1.830E-02	1.83E-02	
166: T1	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	3.53E-08
DRSTXV20	LOSS OF DC CONTROL PANEL DV20 (201B-IV)	3.83E-6	24	9.19E-05	
PMODMADLCA	<MODULE> MD PUMP TRAIN A FAILS TO DELIVER		6.771E-03	6.77E-03	
PMODSDPDLCD	<MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		1.830E-02	1.83E-02	
167: T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	3.47E-03
AP26XCT2	TTR BREAKER 24C-IT-2 FAILS TO OPEN	7.96E-4	6	6.78E-03	
PMODMDDLCLB	<MODULE> MD PUMP 9B FAILS TO DELIVER		6.771E-03	6.77E-03	

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CUTSET REPORT

MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	B.R. PROB.	MOD./CS. PROB.
168) T8 F01QX0P4 AM2GKDI2 FMO0MDADFLCA	SD APW PUMP P4 IS O.O.S. FOR MAINT. LOSS OF NORMAL POWER INITIATING EVENT TIE BREAKER 24D-1C-2 FAILS TO OPEN <MODULE> MD PUMP TRAIN A FAILS TO DELIVER	1.18E-2 7.96E-4	1 6	1.18E-02 5.10E-02 4.78E-03 6.77E-03	3.47E-08
169) T8 F01QX0P4 AM0D24CLMPT FMO0SDPDEL0 FP9QX09B	SD APW PUMP P4 IS O.O.S. FOR MAINT. LOSS OF NORMAL POWER INITIATING EVENT <module> FAILURE OF BUS 24C LMP LOGIC <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS APW MD PUMP 9B IS O.O.S. DUE TO MAINT.	1.18E-2 3.83E-3	1 1	1.18E-02 9.10E-02 5.43E-03 1.83E-02 3.83E-03	3.46E-08
170) T2 PTRQX0JA PTRQX09B RT	LOSS OF MAIN FEEDWATER TRAIN A IS O.O.S., RC-403 IS CLOSED AND POWER REMOVED TRAIN B IS O.O.S., RC-405 IS CLOSED AND POWER REMOVED FAILURE OF REACTOR TRIP SYSTEM			7.00E-01 6.99E-02 6.99E-02 1.00E-05	3.42E-08
(71) S4 LCVABCCB	LARGE LOCA CC FAILURE OF 2 OF 3 CHECK VALVES (2-SI-215, 25, 35 & 45)	8.58E-8		6.40E-04 1.24E-03 5.32E-05	3.40E-08
172) S4 LCVABCCA	LARGE LOCA CC FAILURE OF 2 OF 3 CHECK VALVES (2-SI-217, 27, 37 & 47)	8.58E-8		6.40E-04 1.24E-03 5.32E-05	3.40E-08
173) T8 AM0D24DLNPKI FMO0MDADFLCA F01QX0P4	LOSS OF NORMAL POWER INITIATING EVENT <module> FAILURE OF BUS 24D LMP LOGIC <MODULE> MD PUMP TRAIN A FAILS TO DELIVER SD APW PUMP P4 IS O.O.S. FOR MAINT.	1.18E-2	1	1.18E-02 9.10E-02 4.63E-03 6.77E-03	3.37E-08
174) T8 FMO0MDADFLCA F01PKCP4 WMO0P5CPTSSIW	LOSS OF NORMAL POWER INITIATING EVENT <MODULE> MD PUMP TRAIN A FAILS TO DELIVER COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP. <module> SW PUMP 5C FAILS TO START OR ESFAS EQUIPMENT FAILS			1.3E-2 4.147E-03 4.15E-03	
175) T8 FMO0MDADFLCA F01PKCP4 WMO0P5CPTSSIW	LOSS OF NORMAL POWER INITIATING EVENT <MODULE> MD PUMP 9E FAILS TO DELIVER COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP. <module> SW PUMP 5A FAILS TO START OR ESFAS EQUIPMENT FAILS			9.10E-02 6.77E-03 1.3E-2 4.147E-03 4.15E-03	3.32E-08
176) T1 AM0DCC12PTSSIB F01QX0P4 IIP000000	GENERAL PLANT TRANSIENT <module> COMMON CAUSE FAILURE OF AC POWER GIVEN AN LMP SD APW PUMP P4 IS O.O.S. FOR MAINT. LOSS OF NORMAL POWER	1.18E-2	1	1.18E-02 2.49E-4 2.49E-04	3.30E-08
177) T1 AM0DCC12PTSSIB AM0DCC12PTSSIB FMO0SDPDEL0	GENERAL PLANT TRANSIENT <module> CCF OF THE FEEDER BREAKERS TO FAST TRANSFER <module> COMMON CAUSE FAILURE OF AC POWER GIVEN AN LMP <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS			3.10E+00 1.592E-04 1.59E-04 3.622E-03 1.830E-02 1.83E-02	3.27E-08
178) T11 AM0DCC12PTSSIB FP9QX09A F01PKCP4	LOSS OF VITAL AC PANELS VA18 & VA30 <module> D/G 15G-13U FAULTS APW MD PUMP 9A IS O.O.S. DUE TO MAINT. COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.	3.33E-3	1	5.241E-02 5.24E-02 1.3E-2 3.83E-03	3.26E-08
179) S3 REC32A REC12B WMO0A1EC08 WMO0A1EC08	REACTOR LOCA OPERATOR RECOVERY OF CLOSING 2-SF-3.2A AFTER IC HAS FAILED TO CLO OPERATOR RECOVERY OF CLOSING 2-SF-3.2B AFTER IC HAS FAILED TO CLO <module> A/S CHECK VALVE TO SW-3.2A FAILS <module> A/S CHECK VALVE TO SW-3.2B FAILS			7.10E-04 5.0E-02 5.0E-02 5.0E-02 1.334E-01 1.33E-01 1.33E-01	2.16E-08
180) T1 AM0D24CPTLB AM0D24GPTLTC FMO0MDADFLCA	GENERAL PLANT TRANSIENT <module> FAILURE OF BUS 24C FAST TRANSFER LOGIC <module> D/G 15G-12U FAULTS <MODULE> MD PUMP 9B FAILS TO DELIVER			3.10E+00 2.144E-03 2.14E-03 5.241E-02 6.77E-03	3.07E-08

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MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	B.E. PROB.	MOD./CB. PROB.
181) PQ1PXP4 T9	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP. LOSS OF NORMAL POWER INITIATING EVENT		1.3E-2	1.30E-02	
AB2GKET2	TIE BREAKER 24D-IT-2 FAILS TO OPEN	7.96E-4	6	4.78E-03	3.05E-08
FMODSDPDEL8	<MODULE> SD PUMP FAILS TO DEL. APW TO HEADERS		1.830E-02	1.83E-02	
FT9QX09A	APW MD PUMP 5A IS O.O.S. DUE TO MAINT.	3.83E-3	1	3.83E-03	
182) T3	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	3.05E-08
A32GKCY2	TIE BREAKER 24C-IT-2 FAILS TO OPEN	7.96E-4	6	4.78E-03	
FMODSDPDRLE	<MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		1.830E-02	1.83E-02	
F29QX09B	APW MD PUMP 5B IS O.O.S. DUE TO MAINT.	3.83E-3	1	3.83E-03	
183) T3	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	3.02E-08
FMODMDADRLCA	<MODULE> MD PUMP TRAIN A FAILS TO DELIVER		6.771E-03	6.77E-03	
FQ1QX0P4	SD APW PUMP P4 IS O.O.S. FOR MAINT.	1.18E-2	1	1.18E-02	
WMODP5CFTSEIW	<module>SW PUMP 5C FAILS TO START OR ESFA3 EQUIPMENT FAILS		4.147E-03	4.15E-03	
184) T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	3.02E-08
FMODMDDELCE	<MODULE>MD PUMP 9B FAILS TO DELIVER		6.771E-03	6.77E-03	
FQ1QX0P4	SD APW PUMP P4 IS O.O.S. FOR MAINT.	1.18E-2	1	1.18E-02	
WMODP5AFTSAIW	<module>SW PUMP 5A FAILS TO START OR ESFA3 EQUIPMENT FAILS		4.147E-03	4.15E-03	
185) S5	STEAM GENERATOR TUBE RUPTURE		2.20E-02	2.20E-02	2.98E-08
HISGI	MANIPULATIVE ERROR TO CLOSE MSIV(S) GIVEN SGTR		6.71E-3	6.71E-03	
WMODCCFP41ST	<module> CCF OF HPSI PUMPS, RECIC VALVES OR DISCHARGE VALVES		2.02E-04	2.02E-04	
186) T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	2.96E-08
AMOD24CLNPKRI	<module> FAILURE OF BUS 24D LWP LOGIC		4.638E-03	4.64E-03	
FMODSDPDEL8	<MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		1.830E-02	1.83E-02	
FP9QX09A	APW MD PUMP 9A IS O.O.S. DUE TO MAINT.	3.83E-3	1	3.83E-03	
187) T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	2.95E-08
ACRRC54	RECOVERY OF AC POWER IN 54 MINUTES		4.35E-2	9.09E-03	
AMODDGAPLTHI	<module> D/G 15G-12U FAULTS		5.241E-02	5.24E-02	
AMODDG3PLTKI	<module> D/G 15G-13U FAULTS		5.241E-02	5.24E-02	
FQ1PXC4	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
188) S3	MEDIUM LOCA		7.10E-04	7.10E-04	2.91E-08
OAFAN	OPERATOR ACTION TO RECOVER ESP ROOM VENTILATION (OA AND H1)		0.13	1.30E-01	
QFWEA238	CCF OF 2/2 ESFRS FANS TO START		3.15E-8	3.15E-04	
189) T.	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	2.89E-08
DBT0XDB1	UNDETECTED DEGRADED BATTERY DB1 (PROB)		2.95E-4	2.95E-04	
DBT2XDB1	FRACTION OF BATTERY DB1 FAILURES THAT WILL STABILIZE CHARGER DC1		.86	8.60E-01	
FMODMDDELCE	<MODULE>MD PUMP 9E FAILS TO DELIVER		6.771E-03	6.77E-03	
FQ1PX024	OF FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS.		5.43E-03	5.43E-03	
190) T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	2.89E-08
ADGQX110	DIESEL GENERATOR 15G-11U OUT OF SERVICE DUE TO MAINTENANCE	1.06E-2	1	1.06E-02	
FMODCCFHDRG	<MODULE> CCFs OF THE COMMON INJECTION HEADER VALVES		2.995E-05	3.00E-05	
191) T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	2.89E-08
ADGQX12U	DIESEL GENERATOR 15G-12U OUT OF SERVICE DUE TO MAINTENANCE	1.06E-2	1	1.06E-02	
FMODCCFHDRG	<MODULE> CCFs OF THE COMMON INJECTION HEADER VALVES		2.995E-05	3.00E-05	
192) T1	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	2.89E-08
AMOD24DFTLB	<module> FAILURE OF BUS 24D TO FAST TRANSFER		2.019E-03	2.02E-03	
AMODDG3PLTKI	<module> D/G 15G-13U FAULTS		5.241E-02	5.24E-02	
FMODMDADELCA	<MODULE> MD PUMP TRAIN A FAILS TO DELIVER		6.771E-03	6.77E-03	
FQ1PXP4	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP		1.3E-2	1.30E-02	
193) T3A	STEAM LINE BREAK UPSTREAM OF NRV (S/C #1)		2.450E-04	2.45E-04	2.88E-08
FQ1PXP4	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	

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CUTSET REPORT

MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	B.E. PROB.	MOD./CS. PROB.
194) HIBAF1	MANIPULATIVE ERROR TO INITIATE FEED AND BLEED		9.03E-3	9.03E-03	
S4	LARGE LOCA		6.40E-04	6.40E-04	2.85E-08
RBC32A	OPERATOR RECOVERY OF CLOSING 2-SW-3.2A AFTER IT HAS FAILED TO CLO		5.0E-02	5.00E-02	
RBC32B	OPERATOR RECOVERY OF CLOSING 2-SW-3.2B AFTER IT HAS FAILED TO CLO		5.0E-02	5.00E-02	
WMDAIBCVAG	<module>A/S CHECK VALVE TO SW-3.2A FAILS		1.334E-01	1.33E-01	
WMDAIBCVBC	<module>A/S CHECK VALVE TO SW-3.2B FAILS		1.334E+01	1.33E-01	
195) T1	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	2.83E-08
PMOD404PTOIV	<module> RC-404 FAILS TO OPEN		1.306E-02	1.31E-02	
PTRXQ06A	TRAIN A IS O.O.S., RC-403 IS CLOSED AND POWER REMOVED		6.99E-02	6.99E-02	
RT	FAILURE OF REACTOR TRIP SYSTEM		1.00E-05	1.00E-05	
195) T1	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	2.83E-08
PMOD402PTOIV	<module> RC-402 FAILS TO OPEN		1.306E-02	1.31E-02	
PTRXQ06B	TRAIN B IS O.O.S., RC-405 IS CLOSED AND POWER REMOVED		6.99E-02	6.99E-02	
RT	FAILURE OF REACTOR TRIP SYSTEM		1.00E-05	1.00E-05	
197) S2	SMALL LOCA (PIPE RUPTURE)		2.25E-03	2.25E-03	2.82E-08
EMODCS161BIOZ	<module> MOV CS-16.1B FAILS TO OPEN		2.626E-03	2.63E-03	
EMOD41AFLSS	<module> FAILURE OF P41A DUE TO PUMP, CHECK VALVES OR BREAKER		4.779E-03	4.78E-03	
198) S2	SMALL LOCA (PIPE RUPTURE)		2.25E-03	2.25E-03	2.82E-08
EMODCS161AINEZ	<module> MOV CS-16.1A FAILS TO OPEN		2.626E-03	2.63E-03	
EMOD41CPLST	<module> FAILURE OF P41C DUE TO PUMP, CHECK VALVES OR BRK		4.779E-03	4.78E-03	
199) T1	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	2.78E-08
AMOD24CPTLB	<module> FAILURE OF BUS 24C FAST TRANSFER LOGIC		2.144E-03	2.14E-03	
AMODDGAFLTJI	<module> D/G 15G-12U FAULTS		5.241E-02	5.24E-02	
FMODMDDDELCEB	<MODULE> MD PUMP 9B FAILS TO DELIVER		6.771E-03	6.77E-03	
FC1QX0P4	SD APW PUMP P4 IS O.O.S. FOR MAINT.	1.18E-2	1	1.18E-02	
200) S5	STREAM GENERATOR TUBE RUPTURE		2.20E-02	2.20E-02	2.77E-08
QANDCV	COGNITIVE ERROR TO RECOVER DC SWGR ROOM VENTILATION		1.0E-02	1.00E-02	
QASGI	COGNITIVE ERROR TO ISOLATE STREAM GENERATOR GIVEN SGTR		2E-2	2.00E-02	
YMODRANDMAG?I	<module> DC SWGR A CHW, SW OR FAV RANDOM FAILURES		7.948E-02	7.95E-02	
YMODRANDMBG?I	<module> DC SWGR B CHW, SW OR FAV RANDOM FAILURES		7.929E-02	7.93E-02	
201) S1	SMALL SMALL LOCA (INCLUDES RCP SEAL RUPTURE)		4.65E-03	4.65E-03	2.76E-08
QANDCV	COGNITIVE ERROR TO RECOVER DC SWGR ROOM VENTILATION		1.0E-02	1.00E-02	
QASSASREB	OP. REC., MANUAL INIT. OF SEAS EQIP. FOLLOWING LOSS OF SWGR RM. VE		5.00E-02	5.00E-02	
YMODCCCHSNB	<module> DC SWGR ROOMS A & B COMMON CAUSE FAILURES		1.187E-02	1.19E-02	
202) T1	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	2.76E-08
AMODDGAFLTJI	<module> D/G 15G-12U FAULTS		5.241E-02	5.24E-02	
AMODDGBFLTKI	<module> D/G 15G-13U FAULTS		5.241E-02	5.24E-02	
FC1PXCP4	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
IIINX000	LOSS OF NORMAL POWER		2.49E-4	2.49E-04	
203) T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	2.71E-08
AMODDGAFLTJI	<module> D/G 15G-12U FAULTS		5.241E-02	5.24E-02	
FMODUVIG9BI	<MODULE> UV LOGIC FAILS TO OPERATE MD PUMP 9B		4.375E-04	4.38E-04	
FC1PXCP4	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
204) T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	2.71E-08
AMODDGBFLTKI	<module> D/G 15G-13U FAULTS		5.241E-02	5.24E-02	
FMODUVIG9AI	<MODULE> UV LOGIC COMPONENTS FAIL TO OPERATE MD PUMP 9A		4.375E-04	4.38E-04	
FC1PXCP4	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
205) T2	LOSS OF MAIN FEEDWATER		7.000E-01	7.00E-01	2.71E-08
FMODCCPHDRG	<MODULE> CCPs OF THE COMMON INJECTION HEADER VALVES		2.995E-05	3.00E-05	
HIBAF1	MANIPULATIVE ERROR TO INITIATE FEED AND BLEED		9.03E-3	9.03E-03	

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CUTSET REPORT

MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	B.E. PROB.	MOD./CS. PROB.
MPWNRRC	FAILURE TO RECOVER MPW GIVEN LOSS OF MPW INITIATING EVENT		1.43E-01	1.43E-01	
216) T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	2.68E-08
ACRECS4	RECOVERY OF AC POWER IN 54 MINUTES		4.35E-2	9.09E-03<	
AMODUCAPLTC1	<module> D/G 15G-12U FAULTS		5.241E-02	5.24E-02	
AMODDCBPLTEI	<module> D/G 15G-13U FAULTS		5.241E-02	5.24E-02	
FQ1QX0P4	SD AFW PUMP P4 IS O.O.S. FOR MAINT.	1.18E-2	1	1.18E-02	
207) T2	LOSS OF MAIN FEEDWATER		7.000E-01	7.00E-01	2.68E-08
FP9QX09A	AFW MD PUMP 5A IS O.O.S. DUE TO MAINT.	3.83E-3	1	3.83E-03	
RT	FAILURE OF REACTOR TRIP SYSTEM		1.00E-05	1.00E-05	
208) T2	LOSS OF MAIN FEEDWATER		7.000E-01	7.00E-01	2.68E-08
FP9QX09B	AFW MD PUMP 6B IS O.O.S. DUE TO MAINT.	3.83E-3	1	3.83E-03	
RT	FAILURE OF REACTOR TRIP SYSTEM		1.00E-05	1.00E-05	
209) S1	SMALL SMALL LOCA (INCLUDES RCP SEAL RUPTURE)		4.65E-03	4.65E-03	2.66E-08
QACST	OPERATOR FAILS TO ADD MAKEUP WATER TO THE CST		1.3E-03	1.30E-03	
VMOD651FTOV	<module> FAILURE OF MOV 2-SI-651 TO OPEN DUE TO MECH OR BREAKER FA		4.399E-03	4.40E-03	
210) S1	SMALL SMALL LOCA (INCLUDES RCP SEAL RUPTURE)		4.65E-03	4.65E-03	2.66E-08
QACST	OPERATOR FAILS TO ADD MAKEUP WATER TO THE CST		1.3E-03	1.30E-03	
VMOD652FTOV	<module> FAILURE OF MOV 2-SI-652 TO OPEN DUE TO MECH OR BREAKER FA		4.399E-03	4.40E-03	
211) T1	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	2.66E-08
ARTXT05	TRANSFORMER 24C1-1X FAULT (JB5)	2.88E-6	24	6.91E-05	
FMODSDDELCS	<MODULE> MD PUMP 9B FAILS TO DELIVER		6.771E-03	6.77E-03	
FMODSDPELD	<MODULE> SD PUMP FAILS TO DEL AFW TO HEADERS		1.830E-02	1.83E-02	
212) T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	2.64E-08
FMODSDPELD	<MODULE> SD PUMP FAILS TO DEL AFW TO HEADERS		1.830E-02	1.83E-02	
FP9QX09B	AFW MD PUMP 9B IS O.O.S. DUE TO MAINT.	3.83E-2	1	3.83E-03	
WMODP5AFTSAIN	<module> JW PUMP 5A FAILS TO START OR ESPAS EQUIPMENT FAILS		4.147E-03	4.15E-03	
213) T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	2.64E-08
FMODSDPELD	<MODULE> SD PUMP FAILS TO DEL AFW TO HEADERS		1.830E-02	1.83E-02	
FP9QX09A	AFW MD PUMP 9A IS O.O.S. DUE TO MAINT.	3.83E-3	1	3.83E-03	
WMODP5CPTSBIN	<module> SW PUMP 5C FAILS TO START OR ESPAS EQUIPMENT FAILS		4.147E-03	4.15E-03	
214) T2	LOSS OF MAIN FEEDWATER		7.000E-01	7.00E-01	2.64E-08
BTRPX00	FAILURE DUE TO OPERATOR ERROR		3.77E-3	3.77E-03	
RT	FAILURE OF REACTOR TRIP SYSTEM		1.00E-05	1.00E-05	
215) S4	LARGE LOCA		6.40E-04	6.40E-04	2.64E-08
QJDCV	COGNITIVE ERROR TO RECOVER DC SWGR ROOM VENTILATION		1.0E-02	1.00E-02	
YNODMANFBG	<module> CHILLED WATER OR SW COMPONENTS (TRAIN B) O.O.S. FOR MAINT		5.186E-02	5.19E-02	
YNODRABDMAG?I	<module> DC SWGR B CHW, SW OR FAN RANDOM FAILURES		7.948E-02	7.95E-02	
216) S4	LARGE LOCA		6.40E-04	6.40E-04	2.63E-08
QJDCV	COGNITIVE ERROR TO RECOVER DC SWGR ROOM VENTILATION		1.0E-02	1.00E-02	
YNODMAINTAG	<module> CHILLED WATER OR SW COMPONENTS (TRAIN A) O.O.S. FOR MAINT		5.186E-02	5.19E-02	
YNODRABDMAG?I	<module> DC SWGR B CHW, SW OR FAN RANDOM FAILURES		7.929E-02	7.93E-02	
217) T1	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	2.62E-08
AMOD240FTL8	<module> FAILURE OF BUS 24D TO FAST TRANSFER		2.019E-03	2.02E-03	
AMODDCBPLTKI	<module> D/G 15G-13U FAULTS		5.241E-02	5.24E-02	
FMODMDDELCA	<MODULE> MD PUMP TRAIN A FAILS TO DELIVER		6.771E-03	6.77E-03	
FQ1QX0P4	SD AFW PUMP P4 IS O.O.S. FOR MAINT.	1.18E-2	1	1.18E-02	
218) S4	LARGE LOCA		6.40E-04	6.40E-04	2.62E-08
OAFAN	OPERATOR ACTION TO RECOVER ESP ROOM VENTILATION (OA AND HI)		0.13	1.30E-01	
QPNRA2BS	CCF OF 2/2 ESPRS FANS TO START		3.15E-4	3.15E-04	
219) T3A	SYSTEM LINE BREAK UPSTREAM OF NRV (S/G #1)		2.450E-04	2.45E-04	2.61E-08

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CUTSET REPORT

MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	B.S. PROB.	MOD./CS. PROB.
	SD APW PUMP P4 IS O.O.S. FOR MAINT.	1.18E-2	1	1.18E-02	
	MANIPULATIVE ERROR TO INITIATE FEED AND BLEND		5.03E-3	9.03E-03	
220)	T13 LOSS OF DC BUS 201A		5.66E-02	5.66E-02	2.58E-08
	<MODULE> CCFs OF THE COMMON INJECTION HEADER VALVES		2.995E-05	3.00E-05	
	OPERATOR RECOVERY MANIPULATIVE ERROR: MFB GIVEN LOSS OF DC BUS 201		0.13	1.30E-01	
	FAILURE TO RECOVER DC POWER (SHORT TERM)		2.16E-01	2.16E-01	
	DC POWER RECOVERED (35 MIN)		0.541	5.41E-01	
221)	T1 GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	2.57E-08
	GIVEN A PRECURSOR, POWs OR SAFETIES LIFT AND REMAIN OPEN		0.1	1.00E-01	
	OPERATOR ACTION TO RECOVER ESP ROOM VENTILATION (OA AND HI)		0.13	1.30E-01	
	CODE SAFETY RC-200 FAILS TO CLOSE DUE TO MECH. FAILURE	2.98E-3	1	2.98E-03	
	CCF 2/2 RBCCW AOV S FAILING TO OPERATE	3.15E-3	6.8E-2	3.14E-04	
222)	T1 GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	2.57E-08
	GIVEN A PRECURSOR, POWs OR SAFETIES LIFT AND REMAIN OPEN		0.1	1.00E-01	
	OPERATOR ACTION TO RECOVER ESP ROOM VENTILATION (OA AND HI)		0.13	1.30E-01	
	CODE SAFETY RC-201 FAILS TO CLOSE DUE TO MECH. FAILURE	2.98E-3	1	2.98E-03	
	CCF 2/2 RBCCW AOV S FAILING TO OPERATE	3.15E-3	6.8E-2	2.14E-04	
223)	T11 LOSS OF VITAL AC PANELS VA10 & VA30		1.250E-02	1.25E-02	2.57E-08
	<module> FAILURE OF BUS 24C FAST TRANSFER LOGIC		2.144E-03	2.14E-03	
	<module> D/G 15G-13U FAULTS		5.241E-02	5.24E-02	
224)	T3A <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		1.830E-02	1.83E-02	
	STEAM LINE BREAK UPSTREAM OF HRV (S/G #1)		2.450E-04	2.45E-04	2.51E-08
	OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS.	3.15E-3	6	1.89E-02	
	RANDOM MECHANICAL FAILURE OF ADV MS-190B		5.43E-03	5.43E-03	
225)	T3A STEAM LINE BREAK UPSTREAM OF HRV (S/G #1)		2.450E-04	2.45E-04	2.51E-08
	OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS.	3.15E-3	6	1.89E-02	
	RANDOM MECHANICAL FAILURE OF ADV MS-190A		5.43E-03	5.43E-03	
226)	T GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	2.51E-08
	LOSS OF DC CONTROL PANEL DV20 (201B-1V)	3.83E-6	24	9.19E-05	
	<MODULE> MD PUMP TRAIN A FAILS TO DELIVER		6.771E-03	6.77E-03	
227)	T COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	2.51E-08
	LOSS OF DC CONTROL PANEL DV10 (201A-1V)	3.83E-6	24	9.19E-05	
	<MODULE> MD PUMP 9B FAILS TO DELIVER		6.771E-03	6.77E-03	
	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
228)	T1 GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	2.50E-08
	<module> D/G 15G-12U FAULTS		5.241E-02	5.24E-02	
	<module> D/G 15G-13U FAULTS		5.241E-02	5.24E-02	
	SD APW PUMP P4 IS O.O.S. FOR MAINT.	1.18E-2	1	1.18E-02	
	LOSS OF NORMAL POWER		2.49E-4	2.49E-04	
229)	T1 GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	2.48E-08
	<module> CCF OF THE FEEDER BREAKERS TO FAST TRANSFER		1.592E-04	1.59E-04	
	<module> D/G 15G-12U FAULTS		5.241E-02	5.24E-02	
	<module> D/G 15G-13U FAULTS		5.241E-02	5.24E-02	
	<MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		1.830E-02	1.83E-02	
230)	T6 LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	2.46E-08
	<module> D/G 15G-12U FAULTS		5.241E-02	5.24E-02	
	<MODULE> UV LOGIC FAILS TO OPERATE MD PUMP 9B		4.375E-04	4.38E-04	
	SD APW PUMP P4 IS O.O.S. FOR MAINT.	1.18E-2	1	1.18E-02	
231)	T8 LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	2.46E-08

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CUTSET REPORT

MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	B.R. PROB.	MOD./CB. PROB.
	<module> D/G 15G-13U FAULTS		5.241E-02	5.24E-02	
	<MODULE> UV LOGIC COMPONENTS FAIL TO OPERATE MD PUMP 9A		4.375E-04	4.38E-04	
232) T9	SD APW PUMP P4 IS O.O.S. PCR MAINT	1.18E-2	1	1.18E-02	
	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	2.46E-08
	<MODULE> CCFs OF THE COMMON INJECTION HEADER VALVES		2.995E-05	3.00E-05	
233) T9	MANIPULATIVE ERROR TO INITIATE FEED AND BLEED		9.03E-3	9.03E-03	
	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	2.46E-08
	<module> FAILURE OF BUS 24C LMP LOGIC		5.430E-03	5.43E-03	
	APW MD PUMP 5B IS O.O.S. DUE TO MAINT.	3.83E-3	1	3.83E-03	
234) T1	COGNITIVE ERROR FOR OPJ. FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	2.44E-08
	<module> FAILURE OF BUS 24C FAST TRANSFER LOGIC		2.144E-03	2.14E-03	
	<module> D/G 15G-12U FAULTS		5.241E-02	5.24E-02	
	<MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		1.830E-02	1.83E-02	
235) T14	APW MD PUMP 5B IS O.O.S. DUE TO MAINT.	3.83E-3	1	3.83E-03	
	LOSS OF DC BUS 201B		5.340E-02	5.34E-02	2.43E-08
	<MODULE> CCFs OF THE COMMON INJECTION HEADER VALVES		2.995E-05	3.00E-05	
	OPERATOR RECOVERY MANIPULATIVE ERROR: MPW GIVEN LOSS OF DC BUS 201		0.13	1.30E-01	
	FAILURE TO RECOVER DC POWER (SHORT TERM)		2.16E-01	2.16E-01	
	DC POWER RECOVERED (35 MIN)		0.541	5.41E-01	
256) S4	LARGE LOCA		6.40E-04	6.40E-04	2.42E-08
	COMMON CAUSE FAILURE OF DISCHARGE CHECK VALVES 2-SI-446 AND 434	8.58E-8	8.81E+02	3.78E-05	
257) T11	LOSS OF VITAL AC PANELS VA10 & VA30		1.250E-02	1.25E-02	2.61E-08
	<module> D/G 15G-13U FAULTS		5.241E-02	5.24E-02	
	<MODULE> MD PUMP TRAIN A FAILS TO DELIVER		6.771E-03	6.77E-03	
	OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS.		5.43E-03	5.43E-03	
258) T5B	LOSS OF BOTH DC BUSES (BUS 201B FIRST?)		1.310E-06	1.31E-06	2.40E-08
	<MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		1.830E-02	1.83E-02	
259) T1	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	2.36E-08
	UNDETECTED DEGRADED BATTERY DB1 (PROB)		2.95E-4	2.95E-04	
	FRACTION OF BATTERY DB1 FAILURES THAT WILL STABILIZE CHARGER DC1		.86	8.60E-01	
260) S5	<MODULE> CCFs OF THE COMMON INJECTION HEADER VALVES		2.995E-05	3.00E-05	
	STEAM GENERATOR TUBE RUPTURE		2.20E-02	2.20E-02	2.34E-08
	CC FAILURE OF 2 OF 3 CHECK VALVES (2 SI-217, 27, 37 & 47)	8.58E-8	1.24E+03	5.32E-05	
	COGNITIVE ERROR TO ISOLATE STEAM GENERATOR GIVEN SCTR		2E-2	2.00E-02	
261) T4	LOSS OF DC BUS 201B		5.340E-02	5.34E-02	2.33E-08
	UNDETECTED DEGRADED BATTERY DB1 (PROB)		2.95E-4	2.95E-04	
	FRACTION OF BATTERY DB1 FAILURES THAT WILL STABILIZE CHARGER DC1		.86	8.60E-01	
	<MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		1.830E-02	1.83E-02	
	FAILURE TO RECOVER DC POWER (SHORT TERM)		2.16E-01	2.16E-01	
	FAILURE TO RECOVER DC POWER (35 MIN)		4.35E-01	4.35E-01	
262) T1	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	2.32E-08
	<module> CCF OF THE FEEDER BREAKERS TO FAST TRANSFER		1.592E-04	1.59E-04	
	<module> COMMON CAUSE FAILURE OF AC POWER GIVEN AN LMP		3.622E-03	3.62E-03	
	COGNITIVE ERROR PCR OPS. FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
263) T1	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	2.30E-08
	<module> FAILURE OF BUS 24D TO FAST TRANSFER		2.019E-03	2.02E-03	
	<module> D/G 15G-13U FAULTS		5.241E-02	5.24E-02	
	<MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		1.830E-02	1.83E-02	
	APW MD PUMP 9A IS O.O.S. DUE TO MAINT.	3.83E-3	1	3.83E-03	

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CUTSET REPORT

MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	S.E. PROB.	MOD./CS. PROB.
244) TR	LOSS OF NORMAL POWER INITIATING EVENT			9.100E-02	2.29E-08
ACREC13	RECOVERY OF AC POWER IN 13 HOURS (MEAN CCPING TIME)			1.69E-3	6.96E-05
AMODCCFLNPKAB	<module> COMMON CAUSE FAILURE OF AC POWER GIVEN AN LWP			3.622E-03	1.62E-03
245) T1	GENERAL PLANT TRANSIENT			3.100E+00	2.28E-08
DBSTXV20	LOSS OF DC CONTROL PANEL DV20 (201B-IV)	3.83E-5	24	9.19E-05	
FMODMLADELCA	<MODULE> MD PUMP TRAIN A FAILS TO DELIVER			6.771E-03	6.77E-03
FJ1QXCP4	SD APW PUMP P4 IS O.O.S. FOR MAINT.	1.18E-2	1	1.18E-02	
246) T1	GENERAL PLANT TRANSIENT			3.100E+00	2.28E-08
DASTEVI0	LOSS OF DC CONTROL PANEL DV10 (201A-IV)	3.83E-5	24	9.19E-05	
FMODMBDELCB	<MODULE> MD PUMP 93 FAILS TO DELIVER			6.771E-03	6.77E-03
FJ1QXOP4	SD APW PUMP P4 IS O.O.S. FOR MAINT.	1.18E-2	1	1.18E-02	
247) T3A	STEAM LINE BREAK UPSTREAM OF NRV (S/G #1)			2.450E-04	2.26E-08
CONDSGTR	CONSEQUENTIAL SGTR			0.0505	5.05E-02
FMODSDPDRLD	<MODULE> SD PUMP FAILS TO DEL APW TO HEADERS			1.830E-02	1.83E-02
QABAF1	COGNITIVE ERROR TO INITIATE BLEED AND FRED			0.1	1.00E-01
248) S3	MEDIUM LOCA			7.10E-04	2.26E-08
HM041CPLST	<module> FAILURE OF P41C DUE TO PUMP, CHECK VALVES OR BRK			4.779E-03	4.78E-03
R3C32B	OPERATOR RECOVERY OF CLOSING 2-SW-3.2B AFTER IT HAS FAILED TO CLD			5.0E-02	5.00E-02
HM0DAIRCVCB	<module> A/S CHECK VALVE TO SW-3.2B FAILS			1.334E-01	1.33E-01
249) S3	MEDIUM LOCA			7.10E-04	2.26E-08
HM041AFLSS	<module> FAILURE OF P41A DUE TO PUMP, CHECK VALVES OR BREAKER			4.779E-03	4.78E-03
R3C32A	OPERATOR RECOVERY OF CLOSING 2-SW-3.2A AFTER IT HAS FAILED TO CLD			5.0E-02	5.00E-02
HM0DAIRCVAG	<module> A/S CHECK VALVE TO SW-3.2A FAILS			1.334E-01	1.33E-01
250) T9	MAIN FREDLINE BREAK IN TURBINE BUILDING (UPSTREAM OF MPW AIR ASST.			9.200E-04	2.26E-08
NAVGX05A	MPW AIR-ASST CHK. VLV. FW-5A FAILS TO CLOSE ON DEMAND.	3.15E-3	6	1.89E-02	
QABAF1	COGNITIVE ERROR TO INITIATE BLEED AND FRED			0.1	1.00E-01
QAMFRI30	FAILURE OF THE OPERATOR TO REC. THE NEED TO ISJ. THE MFLBUA			1.3E-02	1.30E-02
251) T3B	STEAM LINE BREAK UPSTREAM OF NRV (S/G #2)			2.450E-04	2.25E-08
DRSTXV20	LOSS OF DC CONTROL PANEL DV20 (201E-IV)	3.83E-5	24	9.19E-05	
252) S2	SMALL LOCA (PIPE RUPTURE)			2.25E-03	2.25E-03
RT	FAILURE OF REACTOR TRIP SYSTEM			1.00E-05	1.00E-05
253) T.3	LOSS OF DC BUS 201A			5.660E-02	2.23E-08
FMODCCVLEBCD	<MODULE> CCP OF 2/2 DISCR. CVS TO OPEN ON SD AND REMAINING MD APW			4.201E-06	4.20E-06
RDC1	FAILURE TO RECOVER DC POWER (SHORT TERM)			2.16E-01	2.16E-01
RDC2	FAILURE TO RECOVER DC POWER (35 MIN)			4.35E-01	4.35E-01
254) T2	LOSS OF MAIN FEEDWATER			7.000E-01	2.21E-08
FVVGK43B	APW RBG. VLV. FW-43B FAILS TO OP. DUE TO MECH. FAIL.	3.15E-3	1	3.15E-03	
RT	FAILURE OF REACTOR TRIP SYSTEM			1.00E-05	1.00E-05
255) T2	LOSS OF MAIN FEEDWATER			7.000E-01	2.20E-08
DET2XDB1	UNDETECTED DEGRADED BATTERY DB1			2.95E-4	2.95E-04
DET2XDB1	FRACTION OF BATTERY DB1 FAILURES THAT WILL STABILIZE CHARGER DC1			.56	8.60E-01
FMODMBDELCB	<MODULE> MD PUMP 9E FAILS TO DELIVER			6.771E-03	6.77E-03
FMODSDPDRLD	<MODULE> SD PUMP FAILS TO DEL APW TO HEADERS			1.830E-02	1.83E-02
256) T4	STEAM LINE BREAK DOWNSTREAM OF THE NRV S			2.200E-03	2.20E-03
RT	FAILURE OF REACTOR TRIP SYSTEM			1.00E-05	1.00E-05
257) T8	LOSS OF NORMAL POWER INITIATING EVENT			9.100E-02	2.16E-08
AE2GXDT2	TIE BREAKER 24D-IT-2 FAILS TO OPEN	7.96E-4	6	4.78E-03	
F19QX09A	APW MD PUMP 9A IS O.O.S. DUE TO MAINT.	3.83E-3	1	3.83E-03	
FJ1PXCPC4	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.			1.3E-2	1.30E-02
258) T8	LOSS OF NORMAL POWER INITIATING EVENT			9.100E-02	2.16E-08

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CUTSWT REPORT

MODULE/EVENT NAME	DESCRIPTION	RAIR	EXPOSURE	B.E. PROB.	MOD./CS. PROB.
	TIE BREAKER 24C-IT-2 FAILS TO OPEN	7.96E-6	6	4.78E-03	
	APW MD PUMP 9B IS O.O.S. DUE TO MAINT.	3.33E-3	1	3.83E-03	
	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
259)	T5A FNODSDPDELD HM0D41AFLSS		2.450E-04	2.45E-04	2.14E-08
	STEAM LINE BREAK UPSTREAM OF NRV (S/C #1)		1.830E-02	1.83E-02	
	<module> SD PUMP FAILS TO DEL APW TO HEADERS		4.779E-03	4.78E-03	
260)	T5A FNODSDPDELD HM0D41CFLST		2.450E-04	2.45E-04	2.14E-08
	STEAM LINE BREAK UPSTREAM OF NRV (S/C #1)		1.830E-02	1.83E-02	
	<module> SD PUMP FAILS TO DEL APW TO HEADERS		4.779E-03	4.78E-03	
	<module> FAILURE OF P41C DUE TO PUMP, CHECK VALVES OR BFR		3.100E+00	3.10E+00	2.11E-08
261)	T1 ANODCCFFTRA3 ANODCCFLNPFJAB FQ1QX0P4		1.592E-04	1.59E-04	
	GENERAL PLANT TRANSIENT		3.622E-03	3.62E-03	
	<module> CCF OF THE FEEDER BREAKERS TO FAST TRANSFER		1	1.18E-02	
	<module> COMMON CAUSE FAILURE OF AC POWER GIVEN AN LNP	1.18E-2	5.340E-02	5.34E-02	2.11E-08
262)	T14 FNODCCFVLAC3 RDC1 RDC2		4.201E-06	4.20E-06	
	SD APW PUMP P4 IS O.O.S. FOR MAINT.		2.16E-01	2.16E-01	
	LOSS OF DC BUS 201B		4.35E-01	4.35E-01	
	<module> CCF OF 2/2 DISCH. CVC TO OPEN ON SD AND REMAINING MDP FAI		9.100E-02	9.10E-02	2.10E-08
	FAILURE TO RECOVER DC POWER (SHORT TERM)		4.638E-03	4.64E-03	
263)	TR ANOD24DLNPFBI FP9QX09A FQ1PXCP4		1	3.83E-03	
	LOSS OF NORMAL POWER INITIATING EVENT		1.3E-2	1.30E-02	
	<module> FAILURE OF BUS 24D LNP LOGIC	3.33E-3	7.000E-01	7.00E-01	2.09E-08
264)	T2 PEVEX200 R7		1	2.98E-03	
	APW MD PUMP 9A IS O.O.S. DUE TO MAINT.		1.00E-05	1.00E-05	
	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		7.000E-01	7.00E-01	2.09E-08
	LOSS OF MAIN FEEDWATER	2.98E-3	1	2.98E-03	
	CODE SAFETY RC-200 FAILS TO CLOSE DUE TO MECH. FAILURE		1.00E-05	1.00E-05	
265)	T2 PEVEX201 R7		7.000E-01	7.00E-01	2.09E-08
	FAILURE OF REACTOR TRIP SYSTEM		1	2.98E-03	
	LOSS OF MAIN FEEDWATER	2.98E-3	1	2.98E-03	
	CODE SAFETY RC-201 FAILS TO CLOSE DUE TO MECH. FAILURE		1.00E-05	1.00E-05	
266)	T5A FNODSDPDELD S1		1.130E-06	1.13E-06	2.07E-08
	LOSS OF BOTH DC BUSES (BUS 201A FIRST?)		1.830E-02	1.83E-02	
	<module> SD PUMP FAILS TO DEL APW TO HEADERS		4.65E-03	4.65E-03	2.06E-08
267)	IIINX040 WM0DAIRCVRG WM0DAIRCVRG		2.49E-4	2.49E-04	
	SMALL SMALL LOCA (INCLUDES RCP SEAL RUPTURE)		1.334E-01	1.33E-01	
	LOSS OF NORMAL POWER		1.334E-01	1.33E-01	
	<module> A/S CHECK VALVE TO SW-3.2A FAILS		2.25E-03	2.25E-03	2.04E-08
268)	S1 R1TNR130		2.25E-03	2.25E-03	
	SMALL LOCA (PIPE RUPTURE)		9.070E-06	9.07E-06	
	CC FAILURE (NON-FREEZING) OF 3 OF 4 FWSL LEVEL SENSORS		6.40E-04	6.40E-04	2.04E-08
269)	S4 HM0D41CFLST RBC32B WM0DAIRCVRG		4.779E-03	4.78E-03	
	LARGE LOCA		5.0E-02	5.00E-02	
	<module> FAILURE OF P41C DUE TO PUMP, CHECK VALVES OR BFR		1.334E-01	1.33E-01	
	OPERATOR RECOVERY OF CLOSING 2-SW-3.2B AFTER IT HAS FAILED TO CLO		6.40E-04	6.40E-04	2.04E-08
	<module> A/S CHECK VALVE TO SW-3.2B FAILS		4.779E-03	4.78E-03	
270)	S4 HM0D41AFLSS RBC32A WM0DAIRCVRG		5.0E-02	5.00E-02	
	LARGE LOCA		1.334E-01	1.33E-01	
	<module> FAILURE OF P41A DUE TO PUMP, CHECK VALVES OR BFR		4.779E-03	4.78E-03	
	OPERATOR RECOVERY OF CLOSING 2-SW-3.2A AFTER IT HAS FAILED TO CLO		5.0E-02	5.00E-02	
	<module> A/S CHECK VALVE TO SW-3.2A FAILS		4.440E-03	4.44E-03	2.02E-08
271)	T6 FNODSDPDELD IIINX040		4.440E-03	4.44E-03	
	LOSS OF SERVICE WATER		1.830E-02	1.83E-02	
	<module> SD PUMP FAILS TO DEL APW TO HEADERS		2.49E-4	2.49E-04	
	LOSS OF NORMAL POWER		9.100E-02	9.10E-02	2.01E-08
272)	TR ADGQX12U FP9QX09B FQ1PX0P4		1	1.06E-02	
	LOSS OF NORMAL POWER INITIATING EVENT	1.06E-2	1	1.06E-02	
	DIESEL GENERATOR 15G-12U OUT OF SERVICE DUE TO MAINTENANCE	3.83E-3	1	3.83E-03	
	APW MD PUMP 9B IS O.O.S. DUE TO MAINT.		5.43E-03	5.43E-03	
	OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. BR0PS.				

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MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	S.E. PROB.	MOD./CS. PROB.
273) T1 DBSTXV10 FMODSIPDHELD FP9QX09B	GENERAL PLANT TRANSIENT LOSS OF DC CONTROL PAKEL DV10 (201A-IV) <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS APW MD PUMP 9B IS O.O.S. DUE TO MAINT.	3.83E-6	3.100E+00 24	3.10E+00 9.19E-05	2.00E-08
274) T1 DBSTXV20 FMODSLPDELD FP9QX09A	GENERAL PLANT TRANSIENT LOSS OF DC CONTROL PAKEL DV20 (201B-IV) <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS APW MD PUMP 9A IS O.O.S. DUE TO MAINT.	3.83E-3	3.100E+00 24	3.10E+00 9.19E-05	2.00E-08
275) S3 HIRBLCCAL RAVGABV	MEDIUM LOCA RECOVERY ACTION: FAIL TO LOCALLY CLOSE RBCCW AOV(s) COMMON CAUSE FAILURE OF 2/2 RBCCW AOV'S TO CLOSE	3.15E-3	7.10E-04 .13	7.10E-04 1.30E-01	1.98E-08
276) S3 HISWLOCAL NAVGABV	MEDIUM LOCA RECOVERY ACTION: FAILURE TO LOCALLY OPEN SW AOV(s) COMMON CAUSE FAILURE OF 2/2 SW AOV'S TO OPEN GIVEN A SIAS	3.15E-3	7.10E-04 .13	7.10E-04 1.30E-01	1.98E-08
277) S3 OAFAN RAVGAZ2B	MEDIUM LOCA OPERATOR ACTION TO RECOVER ESP ROOM VENTILATION (OA AND RI) CCF 2/2 RBCCW AOV S FAILING TO OPERATE	3.15E-3	7.10E-04 0.13	7.10E-04 1.30E-01	1.98E-08
278) S2 WMOGCCPPSW	SMALL LOCA (PIPE RUPTURE) <module>COMMON CAUSE FAILURE OF PUMPS AND CVS	2.88E-6	2.25E-03 24	2.25E-03 6.91E-05	1.97E-08
279) T1 ATRTXUB5 FMOBMDDELCD FQ1PXC04	GENERAL PLANT TRANSIENT TRANSFORMER 24C1-1X FAILT (UB5) <MODULE>MD PUMP 9B FAILS TO DELIVER COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.	3.83E-3	3.100E+00 24	3.10E+00 6.77E-03	1.89E-08
280) T8 FP9QX09B FQ1PXC04 WMOBPSAFTSAIN	LOSS OF NORMAL POWER INITIATING EVENT APW MD PUMP 9B IS O.O.S. DUE TO MAINT. COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP. <module>SW PUMP 5A FAILS TO START OR ESPAS EQUIPMENT FAILS	3.83E-3	9.100E-02 1	9.10E-02 3.83E-03	1.88E-08
281) T8 FP9QX09A FQ1PXC04 WMOBPSCFTHREW	LOSS OF NORMAL POWER INITIATING EVENT APW MD PUMP 9A IS O.O.S. DUE TO MAINT. COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP. <module>SW PUMP 5C FAILS TO START OR ESPAS EQUIPMENT FAILS	3.83E-3	9.100E-02 1	9.10E-02 3.83E-03	1.88E-08
282) S1 HISWLOCAL RMOBNS1AEIR RMOBNS1CFIR	SMALL SMALL LOCA (INCLUDES RCP SEAL RUPTURE) RECOVERY ACTION: FAILURE TO LOCALLY OPEN SW AOV(s) <module>1-SW-8.1A FAILS TO OPEN GIVEN A SIAS <module>2-SW-8.1C FAILS TO OPEN GIVEN A SIAS	2.98E-3	4.65E-03 5.57E-03	4.65E-03 5.57E-03	1.88E-08
283) T1 HMOBVCVFAILST LIFTOPEN PIVBX200	GENERAL PLANT TRANSIENT <module> CHECK VALVE FAILURE CAUSES LPSI PIPE FAILURE GIVEN A PRECURSOR, PORVs OR SAFETIES LIFT AND REMAIN OPEN CODE SAFETY RC-20C FAILS TO CLOSE DUE TO MECH. FAILURE	2.98E-3	3.100E+00 1	3.10E+00 2.98E-03	1.83E-08
284) T1 HMOBVCVFAILST LIFTOPEN PIVBX201	GENERAL PLANT TRANSIENT <module> CHECK VALVE FAILURE CAUSES LPSI PIPE FAILURE GIVEN A PRECURSOR, PORVs OR SAFETIES LIFT AND REMAIN OPEN CODE SAFETY RC-201 FAILS TO CLOSE DUE TO MECH. FAILURE	2.98E-3	3.100E+00 1	3.10E+00 2.98E-03	1.83E-08
285) T11 AMOD24CPTLB AMODDGBPLTKI FQ1PXC04	LOSS OF VITAL AC PANELS VA10 & VA30 <module> FAILURE OF BUS 24C PAST TRANSFER LOGIC <module> D/G 15G-13U FAULTS COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.	2.98E-3	1.250E-02 2.144E-03	1.25E-02 2.14E-03	1.83E-08
286) T8 AMOD24CLNPT FMOBMDDELCD	LOSS OF NORMAL POWER INITIATING EVENT <module> FAILURE OF BUS 24C LWP LOGIC <MODULE>MD PUMP 9B FAILS TO DELIVER	2.98E-3	9.100E-02 5.430E-03	9.10E-02 5.43E-03	1.82E-08

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MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	P. E. PROB.	MOD./CS. PROB.
287) S5	OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS. STREAM GENERATOR TUBE RUPTURE		5.43E-03	5.43E-03	
OADCV	COGNITIVE ERROR TO RECOVER DC SWGR ROOM VENTILATION		2.20E-02	2.20E-02	1.01E-08
OASGI	COGNITIVE ERROR TO ISOLATE STEAM GENERATOR GIVEN SCTR		1.0E-02	1.0E-02	
YMODMAINTAG	<module> CHILLED WATER OR SW COMPONENTS (TRAIN B) C.O.S. FOR MAINT		25-2	2.00E-02	
YMODRANDOMAGPI	<module> DC SWGR A CHW, SW OR FAN RANDOM FAILURES		5.186E-02	5.19E-02	
288) S2	SMALL LOCA (PIPE RUPTURE)		7.948E-02	7.95E-02	
HIRBLOCAL	RECOVERY ACTION: FAIL TO LOCALLY CLOSE RBCCW MOV(s)		2.25E-03	2.25E-03	1.01E-08
RMODRBS1AFIP	<module> 2-RB-8.1A FAILS TO CLOSE		.13	1.30E-01	
RMODRBSNOVFIP	<module> 2-RB-210 OR 2-RB-8.1B FAIL TO CLOSE		5.572E-03	5.57E-03	
289) S5	STREAM GENERATOR TUBE RUPTURE		1.112E-02	1.11E-02	
OADCV	COGNITIVE ERROR TO RECOVER DC SWGR ROOM VENTILATION		2.20E-02	2.20E-02	1.81E-08
OASGI	COGNITIVE ERROR TO ISOLATE STEAM GENERATOR GIVEN SCTR		1.0E-02	1.00E-02	
YMODMAINTAG	<module> CHILLED WATER OR SW COMPONENTS (TRAIN A) C.O.S. FOR MAINT		2E-2	2.00E-02	
YMODRANDOMBCPI	<module> DC SWGR B CHW, SW OR FAN RANDOM FAILURES		5.186E-02	5.19E-02	
290) S5	STEAM GENERATOR TUBE RUPTURE		7.929E-02	7.93E-02	
OAFAN	OPERATOR ACTION TO RECOVER ESP ROOM VENTILATION (OP AND HI)		2.20E-02	2.20E-02	1.80E-08
OASGI	COGNITIVE ERROR TO ISOLATE STEAM GENERATOR GIVEN SCTR		0.13	1.30E-01	
OPRA2BS	CCF OF 2/2 ESPRS FANS TO START		2E-2	2.00E-02	
291) S4	LARGE LOCA		3.15E-3	3.15E-04	
HIRBLOCAL	RECOVERY ACTION: FAIL TO LOCALLY CLOSE RBCCW MOV(s)		6.40E-04	6.40E-04	1.78E-08
RAVGARBY	COMMON CAUSE FAILURE OF 2/2 RBCCW MOVs TO CLOSE	3.15E-3	.13	1.30E-01	
292) S4	LARGE LOCA		6.80E-04	6.40E-04	1.78E-08
HIRBLOCAL	RECOVERY ACTION: FAILURE TO LOCALLY OPEN SW MOV(s)		.13	1.30E-01	
WAVGASBY	COMMON CAUSE FAILURE OF 2/2 SW MOVs TO OPEN GIVEN A SIAS	3.15E-3	6.80E-3	2.14E-04	
293) S4	LARGE LOCA		6.40E-04	6.40E-04	1.78E-08
OAFAN	OPERATOR ACTION TO RECOVER ESP ROOM VENTILATION (OP AND HI)		0.13	1.30E-01	
RAVGAZ2B	CCF 2/2 RBCCW MOV S FAILING TO OPERATE	3.15E-3	6.8E-2	2.14E-04	
294) T1	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	1.76E-08
AMODCCFPTRA3	<module> CCF OF THE FEEDER BREAKERS TO FAST TRANSFER		1.592E-04	1.59E-04	
AMODDGAFL/NH	<module> D/G 15G-12U FAULTS		5.241E-02	5.24E-02	
AMODDGBFL/TKI	<module> D/G 15G-13U FAULTS		5.241E-02	5.24E-02	
FC1PXCP4	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
295) T13	LOSS OF DC BUS 201A		5.660E-02	5.66E-02	1.76E-08
FMODMDEDELCB	<MODULE> SD PUMP 9B FAILS TO DELIVER		6.771E-03	6.77E-03	
FMODSDPDEJD	<MODULE> SD PUMP FAILS TO DEL AFW TO HEADERS		1.830E-02	1.83E-02	
QMODFAN15BIT	<module> ESPRS FAN, MOV 2RB-48.1B OR CIRCUITRY FAILS		2.674E-02	2.67E-02	
REC1	FAILURE TO RECOVER DC POWER (SHORT TERM)		2.16E-01	2.16E-01	
REC2	FAILURE TO RECOVER DC POWER (35 MIN)		4.35E-01	4.35E-01	
295) S5	STREAM GENERATOR TUBE RUPTURE		2.20E-02	2.20E-02	1.75E-08
HISGI	MANIPULATIVE ERROR TO CLOSE MSTV(S) GIVEN SCTR		6.71E-3	6.71E-03	
OADCV	COGNITIVE ERROR TO RECOVER DC SWGR ROOM VENTILATION		1.0E-02	1.00E-02	
YMODCCCHSWG	<module> DC SWGR RXMS A & B COMMON CAUSE FAILURES		1.187E-02	1.19E-02	
297) T13	LOSS OF DC BUS 201A		5.660E-02	5.66E-02	1.75E-08
FMODCCPHDRG	<MODULE> CCPs OF THE COMMON INJECTION REACHER VALVES		2.995E-05	3.00E-05	
OMPFWR11	OPERATOR FAILS TO RECOGNIZE NEED TO RECOVER MPV SUBSEQUENT TO LOSS		1.3E-01	1.30E-02	
RICINOT	DC POWER RECOVERED (SHORT TERM)		0.795	7.95E-01	
293) T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	1.74E-08
ACRBC13	RECOVERY OF AC POWER IN 13 HOURS (MEAN COOLING TIME)		1.69E-3	6.96E-05<	
AMODDGPFLTJ1	<module> D/G 15G-12U FAULTS		5.241E-02	5.24E-02	

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MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	B.E. PROB.	MOD./CS. PROB.
299) T9	<module> D/G 15G-13U FAULTS MAIN FEEDLINE BREAK IN TURBINE BUILDING (UPSTREAM OF MFW AIR ASST. AIR ACCUMULATOR FOR AUX FEED REG. VALVE FAILS TO FULFILL ITS FUNCT		5.241E-02	5.24E-02	1.74E-08
NAVX05A	MFW AIR-ASST CHK. VLV. PW-5A FAILS TO CLOSE ON DEMAND.	3.15E-3	9.200E-04	9.20E-04	
OABAF1	COGNITIVE ERROR TO INITIATE BLEED AND FEED	6	1.0E-02	1.00E-02	
300) T3A	STEAM LINE BREAK UPSTREAM OF NRV (S/G #1)		0.1	1.89E-02	
FC1PX0P4	OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS.		2.450E-04	2.45E-04	1.74E-08
PMOD404FTOIV	<module> RC-404 FAILS TO OPEN		5.43E-03	5.43E-03	
301) T3A	STEAM LINE BREAK UPSTREAM OF NRV (S/G #1)		1.306E-02	1.31E-02	
FC1PX0P4	OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS.		2.450E-04	2.45E-04	1.74E-08
PMOD402FTOIV	<module> RC-402 FAILS TO OPEN		5.43E-03	5.43E-03	
302) T1	GENERAL PLANT TRANSIENT		1.306E-02	1.31E-02	
AMOD24CFTLB	<module> FAILURE OF BUS 24C FAST TRANSFER LOGIC		3.100E-00	3.10E+00	1.73E-08
AMODDGAFB7J	<module> D/G 15G-12U FAULTS		2.144E-03	2.14E-03	
FP9QX09B	AFW MD PUMP 9B IS O.O.S. DUE TO MAINT.	3.83E-3	5.241E-02	5.24E-02	
FC1PXC4	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		1	3.83E-03	
303) T1	GENERAL PLANT TRANSIENT		1.3E-2	1.30E-02	
ATRXU55	TRANSFORMER 24C1-1X FAULT (UB5)	2.88E-6	3.100E-00	3.10E+00	1.71E-08
PMODDDEBLCB	<MODULE> MD PUMP 9B FAILS TO DELIVER		24	6.91E-05	
FQ1QX0P4	SD AFW PUMP P4 IS O.O.S. FOR MAINT.	1.18E-2	6.771E-03	6.77E-03	
304) T5B	LOSS OF BOTH DC BUSES (BUS 201B FIRST?)		1	1.18E-02	
FQ1PXC4	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		1.310E-06	1.31E-06	1.70E-08
305) T14	LOSS OF DC BUS 201B		1.3E-2	1.30E-02	
PMODMDEDELCA	<MODULE> MD PUMP TRAIN A FAILS TO DELIVER		5.340E-02	5.34E-02	1.66E-08
PMODSDFEELD	<MODULE> SD PUMP FAILS TO DEL AFW TO HEADERS		6.771E-03	6.77E-03	
QMODPAM15A1S	<module> ESFRS FAN, MOV ZRB-68.1A OR CIRCUITRY FAILS		1.830E-02	1.83E-02	
RDC1	FAILURE TO RECOVER DC POWER (SHORT TERM)		2.674E-02	2.67E-02	
RDC2	FAILURE TO RECOVER DC POWER (35 MIN)		2.16E-01	2.16E-01	
306) T11	LOSS OF VITAL AC PANELS VA10 & VA30		4.35E-01	4.35E-01	1.66E-08
AMOD24CFTLB	<module> FAILURE OF BUS 24C FAST TRANSFER LOGIC		1.250E-02	1.25E-02	
AMODDGEFLTIC	<module> D/G 15G-13U FAULTS		2.144E-03	2.14E-03	
FQ1QX0P4	SD AFW PUMP P4 IS O.O.S. FOR MAINT.	1.18E-2	5.241E-02	5.24E-02	
307) T14	LOSS OF DC BUS 201B		1	1.18E-02	
DBT0XDE1	UNDETECTED DEGRADED BATTERY DB1 (PROB)		5.340E-02	5.34E-02	1.65E-08
DBT2XDE1	FRACTION OF BATTERY DB1 FAILURES THAT WILL STABILIZE CHARGER DC1		2.95E-4	2.95E-04	
FQ1PXC14	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		.66	8.60E-01	
RDC1	FAILURE TO RECOVER DC POWER (SHORT TERM)		1.3E-2	1.30E-02	
RDC2	FAILURE TO RECOVER DC POWER (35 MIN)		2.16E-01	2.16E-01	
308) T14	LOSS OF DC BUS 201B		4.35E-01	4.35E-01	1.65E-08
PMODCCPNDRG	<MODULE> CCPs OF THE COMMON INJECTION HEADER VALVES		5.340E-02	5.34E-02	
QAMPWF1	OPERATOR FAILS TO RECOGNIZE NEED TO RECOVER MFW SUBSEQUENT TO LOSS		2.995E-05	3.00E-05	
RUC1R01	DC POWER RECOVERED (SHORT TERM)		1.3E-02	1.30E-02	
309) T11	LOSS OF VITAL AC PANELS VA10 & VA30		0.795	7.95E-01	1.64E-08
ADGQX17U	DIRTIL GENERATOR 15G-13U OUT OF SERVICE DUE TO MAINTENANCE	1.06E-2	1.250E-02	1.25E-02	
PMODMDEDELCA	<MODULE> MD PUMP TRAIN A FAILS TO DELIVER		1	1.06E-02	
PMODSDFEELD	<MODULE> SD PUMP FAILS TO DEL AFW TO HEADERS		6.771E-03	6.77E-03	
310) T1	GENERAL PLANT TRANSIENT		1.830E-02	1.83E-02	
DBT0XDE1	UNDETECTED DEGRADED BATTERY DB1 (PROB)		3.100E-00	3.10E+00	1.64E-08
DBT2XDE1	FRACTION OF BATTERY DB1 FAILURES THAT WILL STABILIZE CHARGER DC1		2.95E-4	2.95E-04	
FP9QX09B	AFW MD PUMP 9B IS O.O.S. DUE TO MAINT.	3.83E-3	.66	8.60E-01	
			1	3.83E-03	

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MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	S.E. PROB.	MOD./CG. PROB.
311) FJ1PX0P4 TI AMOD24DPTLB AMODDGBFLTKI FP9QX09A FJ1PXC04	OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE PROC. ERRORS. GENERAL PLANT TRANSIENT <module> FAILURE OF BUS 24D TO FAST TRANSFER <module> D/G 15G-13U FAULTS APW MD PUMP 9A IS O.O.S. DCE TO MAINT.	3.83E-3	5.43E-03 3.100E+00 2.019E-03 5.241E-02 1	5.43E-03 3.10E+00 2.02E-03 5.24E-02 3.83E-03	1.63E-08
312) T3 ACRBC54 AMODCCFLMFKAB FJ1PX0P4	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP. LOSS OF NORMAL POWER INITIATING EVENT RECOVERY OF AC POWER IN 54 MINUTES <module> COMMON CAUSE FAILURE OF AC POWER GIVEN AN LWP OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE PROC. ERRORS.		9.100E-02 4.35E-2 3.622E-03 5.43E-03	9.10E-02 4.09E-03 3.62E-03 5.43E-03	1.63E-08
313) S3 HM0D41AFLSE HM0D41CPLST	MEDIUM LOCA <module> FAILURE OF P41A DUE TO PUMP. CHECK VALVES OR BREAKER <module> FAILURE OF P41C DUE TO PUMP. CHECK VALVES OR BGR		7.10E-04 4.779E-03 4.779E-03	7.10E-04 4.78E-03 4.78E-03	1.62E-08
314) T3A COM0SGFR FJ1PXC04 OABAF1	STEAM LINE BREAK UPSTREAM OF NRV (S/G #1) CONSEQUENTIAL SCGR COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP. COGNITIVE ERROR TO INITIATE BLEED AND FRED		2.450E-04 0.0505 1.3E-2 0.1	2.45E-04 5.05E-02 1.30E-02 1.00E-01	1.61E-08
315) T1 AR2GX4B2 AMODDGBFLTKI FM0DMDADELCA FM0DSDPDELD	GENERAL PLANT TRANSIENT 4.16KV CIRCUIT BREAKER 2S3-24B-2 FAILS TO OPEN <module> D/G 15G-13U FAULTS <MODULE> MD PUMP TRAIN A FAILS TO DELIVER <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS	7.96E-4	3.100E+00 1 5.241E-02 6.771E-03 1.830E-02	3.10E+00 7.96E-04 5.24E-02 6.77E-03 1.83E-02	1.60E-08
316) T. AR2GXCC2 AMODDGAFLTJI FM0DMDDBELCB FM0DSDPDELD	GENERAL PLANT TRANSIENT TIE BREAKER 22S3-24C-2 FAILS TO CLOSE <module> D/G 15G-12U FAULTS <MODULE> MD PUMP 9B FAILS TO DELIVER <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS	7.96E-4	3.100E+00 1 5.241E-02 6.771E-03 1.830E-02	3.10E+00 7.96E-04 5.24E-02 6.77E-03 1.83E-02	1.60E-08
317) T1 AR2GX4A2 AMODDGAFLTJI FM0DMDDBELCB FM0DSDPDELD	GENERAL PLANT TRANSIENT 4.16KV CIRCUIT BREAKER 2S3-24A-2 FAILS TO OPEN <module> D/G 15G-12U FAULTS <MODULE> MD PUMP 9E FAILS TO DELIVER <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS	7.96E-4	3.100E+00 1 5.241E-02 6.771E-03 1.830E-02	3.10E+00 7.96E-04 5.24E-02 6.77E-03 1.83E-02	1.60E-08
318) T1 AR2GXCB2 AMODDGBFLTKI FM0DMDADELCA FM0DSDPDELD	GENERAL PLANT TRANSIENT TIE BREAKER 22S3-24D-2 FAILS TO CLOSE <module> D/G 15G-13U FAULTS <MODULE> MD PUMP TRAIN A FAILS TO DELIVER <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS	7.96E-4	3.100E+00 1 5.241E-02 6.771E-03 1.830E-02	3.10E+00 7.96E-04 5.24E-02 6.77E-03 1.83E-02	1.60E-08
319) T1 AMODCCFFTRA3 AMODDGAFLTJI AMODDGBFLTKI FC10X0P4	GENERAL PLANT TRANSIENT <module> CCF OF THE FEEDER BREAKERS TO FAST TRANSFER <module> D/G 15G-12U FAULTS <module> D/G 15G-13U FAULTS SD APW PUMP P1 IS O.O.S. FOR MAINT.	1.18E-2	3.100E+00 1.592E-04 5.241E-02 5.241E-02 1	3.10E+00 1.59E-04 5.24E-02 5.24E-02 1.18E-02	1.60E-08
320) T8 AE2GXDT2 FM0DMDADELCA FJ1PX0P4	LOSS OF NORMAL POWER INITIATING EVENT TIE BREAKER 24D-IT-2 FAILS TO OPEN <MODULE> MD PUMP TRAIN A FAILS TO DELIVER OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE PROC. ERRORS.	7.96E-4	9.100E-02 6 6.771E-03 5.43E-03	9.10E-02 4.78E-03 6.77E-03 5.43E-03	1.60E-08
321) T8 AP2GXCT2 FM0DMDDBELCB FJ1PX0P4	LOSS OF NORMAL POWER INITIATING EVENT TIE BREAKER 24C-IT-2 FAILS TO OPEN <MODULE> MD PUMP 9B FAILS TO DELIVER OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE PROC. ERRORS.	7.96E-4	9.100E-02 6 6.771E-03 5.43E-03	9.10E-02 4.78E-03 6.77E-03 5.43E-03	1.60E-08

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MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	B.E. PROB.	MOD./CS. PROB.
322) T1 PMDCCFVLVV R7	GENERAL PLANT TRANSIENT <module> CCF OF BLOCK VALVES OR PORVS TO OPEN FAILURE OF REACTOR TRIP SYSTEM		3.100E+00 5.109E-04	3.10E+00 5.11E-04	1.58E-08
323) T2 DHTOXDB1 DHT2XDB1 PMDMDDBFLC3 PQ1PXP4	LOSS OF MAIN FEEDWATER UNDETECTED DEGRADED BATTERY DB1 (PROB) FRACTION OF BATTERY DB1 FAILURES THAT WILL STABILIZE CHARGER DC1 <MODULE> MD PUMP 9B FAILS TO DELIVER COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		7.000E-01 2.95E-4 .86 6.771E-03 1.3E-2	7.00E-01 2.95E-04 8.60E-01 6.77E-03 1.30E-02	1.56E-08
324) T11 AMODDGBVIATK1 PMDSDPDELJ OAPWREC	LOSS OF VITAL AC PANELS VA10 & VA30 <module> D/G 15G-13U FAILS <MODULE> SD PUMP FAILS TO DEL. AFW TO HEADERS OPERATOR MANUALLY STARTS AFW GIVEN AUTO START SIGNAL FAILS		1.250E-02 5.241E-02 1.830E-02 1.3E-03	1.25E-02 5.24E-02 1.83E-02 1.30E-03	1.56E-08
325) S4 RRC32B VPOD42BPLST WPODAIRCVRG	LARGE LOCA OPERATOR RECOVERY OF CLOSING 2-SW-3.2B AFTER IT HAS FAILED TO CLO <module> FAILURE OF PUMP 42B DUE TO PUMP, CHECK VALVE OR BREAKER <module> A/S CHECK VALVE TO SW-3.2B FAILS		6.40E-06 5.0E-02 3.646E-03 1.334E-01	6.40E-06 5.00E-02 3.65E-03 1.33E-01	1.56E-08
326) S4 RRC32A VPOD42APLSS WPODAIRCVRG	LARGE LOCA OPERATOR RECOVERY OF CLOSING 2-SW-3.2A AFTER IT HAS FAILED TO CLO <module> FAILURE OF PUMP 42A DUE TO PUMP, CHECK VALVE OR BREAKER <module> A/S CHECK VALVE TO SW-3.2A FAILS		6.40E-06 5.0E-02 3.646E-03 1.334E-01	6.40E-06 5.00E-02 3.65E-03 1.33E-01	1.56E-08
327) S2 HIRBLOCAL HMOD41APLSS HPODRBAOVPI2	SMALL LOCA (PIPE RUPTURE) RECOVERY ACTION: FAIL TO LOCALLY CLOSE RRCW MOV(s) <module> FAILURE OF P41A DUE TO PUMP, CHECK VALVES OR BREAKER <module> 1-RB-210 OR 2-RB-8.1B FAIL TO CLOSE		2.25E-03 .13 4.779E-03 1.112E-02	2.25E-03 1.30E-01 4.78E-03 1.11E-02	1.55E-08
328) T8 AMOD24DNLNPK1 PMDMDADHLCA PQ1PXP4	LOSS OF NORMAL POWER INITIATING EVRNT <module> FAILURE OF BUS 24D LNP LOGIC <MODULE> MD PUMP TRAIN A FAILS TO DELIVER OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS.		9.100E-02 4.638E-03 6.771E-03 5.43E-03	9.10E-02 4.64E-03 6.77E-03 5.43E-03	1.55E-08
329) S2 EMODCS161AIRE EMODCS161BIOZ	SMALL LOCA (PIPE RUPTURE) <module> MOV CS-16.1A FAILS TO OPEN <module> MOV CS-16.1B FAILS TO OPEN		2.25E-03 2.626E-03 2.626E-03	2.25E-03 2.63E-03 2.63E-03	1.55E-08
330) T5B PQ1QXP4	LOSS OF BOTH DC BUSES (BUS 201B FIRST?) SD AFW PUMP P4 IS O.O.S. FOR MAINT.	1.18E-2	1 1	1.18E-02 1.18E-02	1.55E-08
331) T3A PQ1PXP4 HMOD41APLSS	STEAM LINE BREAK UPSTREAM OF NRV (S/G #1) COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP. <module> FAILURE OF P41A DUE TO PUMP, CHECK VALVES OR BREAKER		2.450E-04 1.3E-2 4.779E-03	2.45E-04 1.30E-02 4.78E-03	1.52E-08
332) T3A PQ1PXP4 HMOD41CP1ST	STEAM LINE BREAK UPSTREAM OF NRV (S/G #1) COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP. <module> FAILURE OF P41C DUE TO PUMP, CHECK VALVES OR BRK		2.450E-04 1.3E-2 4.779E-03	2.45E-04 1.30E-02 4.78E-03	1.52E-08
333) T1 AMODCCFLNPKJAB PQ1PXP4 I1INX000	GENERAL PLANT TRANSIENT <module> COMMON CAUSE FAILURE OF AC POWER GIVEN AN LNP OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS. LOSS OF NORMAL POWER		3.100E+00 3.622E-03 5.43E-03 2.49E-4	3.10E+00 3.62E-03 5.43E-03 2.49E-04	1.52E-08
334) T13 QMODFAN15BI2 RT	LOSS OF DC BUS 201A <module> ESPRS FAN, MOV 2RB-(8.1B OR CIRCUITRY FAILS FAILURE OF REACTOR TRIP SYSTEM		5.660E-02 2.674E-02 1.00E-05	5.66E-02 2.67E-02 1.00E-05	1.51E-08
335) T14 DHTOXDB1 DHT2XDB1 PQ1QXP4	LOSS OF DC BUS 201B UNDETECTED DEGRADED BATTERY DB1 (PROB) FRACTION OF BATTERY DB1 FAILURES THAT WILL STABILIZE CHARGER DC1 SD AFW PUMP P4 IS O.O.S. FOR MAINT.	1.18E-2	2.95E-4 .86 1	2.95E-04 8.60E-01 1.18E-02	1.50E-08

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MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	B.F. PROB.	MOD./CS. PROB.
	RDC1		2.16E-01	2.16E-01	
	RXC2		4.35E-01	4.35E-01	
336)	T1		3.100E+00	3.10E+00	1.50E-08
	ATRXTUB5		2.88E-4	24	6.91E-05
	FMODSDPDHLD		1.830E-02	1.83E-02	
	PP90X09B		3.83E-3	1	3.83E-03
337)	T13		5.660E-02	5.66E-02	1.50E-08
	FMODSDDELCLB		6.771E-03	6.77E-03	
	FMODSDPDELE		1.830E-02	1.83E-02	
	RDC1		2.16E-01	2.16E-01	
	RXC2		4.35E-01	4.35E-01	
	SQ20X43B		2.27E-2	1	2.27E-02
338)	S3		7.10E-04	7.10E-04	1.49E-08
	REC32A		5.0E-02	5.00E-02	
	WAVGX32B		3.15E-3	1	3.15E-03
	WMOAIRCVA6		1.334E-01	1.33E-01	
339)	S3		7.10E-04	7.10E-04	1.49E-08
	REC32B		5.0E-02	5.00E-02	
	WAVGX32A		3.15E-3	1	3.15E-03
	WMOAIRCVR6		1.334E-01	1.33E-01	
340)	T8		9.100E-02	9.10E-02	1.48E-08
	AMOD24CLNPI		5.430E-03	5.43E-03	
	FMOCCPHDRG		2.995E-05	3.00E-05	
341)	T5B		2.450E-04	2.45E-04	1.48E-08
	WALGASBV		3.70E-5	6.8E-2	6.04E-05
342)	T5A		2.450E-04	2.45E-04	1.48E-08
	WALGASV		3.70E-5	6.8E-2	6.04E-05
343)	T5A		1.130E-06	1.13E-06	1.47E-08
	FQIPKCP4		1.3E-2	1.30E-02	
344)	S1		4.65E-03	4.65E-03	1.47E-08
	OADCV		1.0E-02	1.00E-02	
	OASASERC		5.00E-02	5.00E-02	
	YMODRADMAGPI		7.948E-02	7.95E-02	
	YMODRADMAGPI		7.929E-02	7.93E-02	
345)	S4		6.40E-04	6.40E-04	1.46E-08
	FMOD41AFLSS		4.779E-03	4.78E-03	
	FMOD41CFLST		4.779E-03	4.78E-03	
346)	T3A		2.450E-04	2.45E-04	1.46E-08
	COND507R		0.0505	5.05E-02	
	FQ1QX0P4		1.18E-2	1	1.18E-02
	QADAF1		0.1	1.00E-01	
347)	T1		3.100E+00	3.10E+00	1.44E-08
	DECTECCF		1.56E-5	2.4	3.74E-05
	FMODMDDELCLB		6.771E-03	6.77E-03	
	FMODSDPDHLD		1.830E-02	1.83E-02	
348)	T6		4.440E-03	4.44E-03	1.44E-08
	FQIPKCP4		1.3E-2	1.30E-02	
	IIINX0G0		2.49E-4	2.49E-04	
349)	T2		7.000E-01	7.00E-01	1.43E-08
	FMOCCPHDRG		2.995E-05	3.00E-05	

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MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	D.E. PROB.	MOD./CB. PROB.
350) T2	<module> FAILURE OF P41A DUE TO PUMP, CHECK VALVES OR BREAKER FAILURE TO RECOVER MFW GIVEN LOSS OF MFW INITIATING EVENT LOSS OF MAIN FEEDWATER		4.779E-03	4.78E-03	
			1.43E-01	1.43E-01	
			7.000E-01	7.00E-01	1.43E-08
	<MODULE> CCFs OF THE COMMON INJECTION HEADER VALVES		2.995E-05	3.00E-05	
351) T14	<module> FAILURE OF P41C DUE TO PUMP, CHECK VALVES OR BOR FAILURE TO RECOVER MFW GIVEN LOSS OF MFW INITIATING EVENT LOSS OF DC BUS 201B		4.779E-03	4.78E-03	
			1.43E-01	1.43E-01	
			5.340E-02	5.34E-02	1.43E-08
	<module> ESFR5 FAN AOV ZRB-68.1A OR CIRCUITRY FAILS		2.674E-02	2.67E-02	
352) T2	FAILURE OF REACTOR TRIP SYSTEM LOSS OF MAIN FEEDWATER		1.00E-05	1.00E-05	
			7.000E-01	7.00E-01	1.42E-08
	UNDETECTED DEGRADED BATTERY DB1 (PROB)		2.95E-4	2.95E-04	
	FRACTION OF BATTERY DB1 FAILURES THAT WILL STABILIZE CHARGER DC1		.36	8.60E-01	
	<MODULE> MD PUMP 9B FAILS TO DELIVER		6.771E-03	6.77E-03	
	SD APW PUMP P4 IS O.O.S. FOR MAINT.	1.18E-2	1	1.18E-02	
353) T1	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	1.42E-08
	LOSS OF DC CONTROL PANEL DV10 (201A-1V)	3.83E-6	24	5.19E-05	
	APW MD PUMP 5B IS O.O.S. DUE TO MAINT.	3.83E-3	1	3.83E-03	
	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
354) T1	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	1.42E-08
	LOSS OF DC CONTROL PANEL DV20 (201B-1V)	3.83E-6	24	9.19E-05	
	APW MD PUMP 5A IS O.O.S. DUE TO MAINT.	3.83E-3	1	3.83E-03	
	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
355) T14	LOSS OF DC BUS 201B		5.340E-02	5.34E-02	1.41E-08
	<MODULE> MD PUMP TRAIN A FAILS TO DELIVER		6.771E-03	6.77E-03	
	<MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		1.830E-02	1.83E-02	
	FAILURE TO RECOVER DC POWER (SHORT TERM)		2.16E-01	2.16E-01	
	FAILURE TO RECOVER DC POWER (35 MIN)		4.35E-01	4.35E-01	
	CONTAINMENT SPRAY PUMP P-43A OUT FOR MAINT. (PROB)	2.27E-2	1	2.27E-02	
356) S1	MEDIUM LOCA		7.10E-04	7.10E-04	1.41E-08
	<module> CHECK VALVE FAILURE CAUSES LPSI PIPE FAILURE		1.980E-05	1.98E-05	
357) S5	STREAM GENERATOR TUBE RUPTURE		2.20E-02	2.20E-02	1.40E-08
	<module> CCF OF HPSI PUMPS, RECIC VALVES OR DISCHARGE VALVES		2.022E-04	2.02E-04	
	ADV ASSOCIATED WITH FAULTED SG #1 FAILS TO CLOSE	3.15E-3	1	3.15E-03	
358) TR	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	1.40E-08
	<MODULE> MD PUMP TRAIN A FAILS TO DELIVER		6.771E-03	6.77E-03	
	<MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		1.830E-02	1.83E-02	
	HEADER B IS OUT-OF-SERVICE FOR MAINT.		1.24E-03	1.24E-03	
359) TE	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	1.40E-08
	<MODULE> MD PUMP 9E FAILS TO DELIVER		6.771E-03	6.77E-03	
	<MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		1.830E-02	1.83E-02	
	HEADER A OUT-OF-SERVICE FOR MAINT.		1.24E-03	1.24E-03	
360) T2	LOSS OF MAIN FEEDWATER		7.000E-01	7.00E-01	1.39E-08
	APW REG. VLV. PW-43B FAILS TO OP. DUE TO MECH. FAIL.	3.15E-3	1	3.15E-03	
	<MODULE> AG CV 12A OR EFG VLV 43A FAILURE		4.404E-04	4.40E-04	
	FAILURE TO RECOVER MFW GIVEN LOSS OF MFW INITIATING EVENT		1.43E-01	1.43E-01	
	COGNITIVE ERROR TO INITIATE BLEED AND FEED		0.1	1.00E-01	
361) T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	1.39E-08
	<MODULE> MD PUMP 9B FAILS TO DELIVER		6.771E-03	6.77E-03	
	OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE PROC. ERRORS.		5.43E-03	5.43E-03	
	<module> SW PUMP 5A FAILS TO START OR RSPAS EQUIPMENT FAILS		4.147E-03	4.15E-03	

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MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	B.Z. PROB.	MOD./CS. PROB.
352) T8 FMODMEADHCA FQ1PX0P4 WMOOP5CPTSBRW	LOSS OF NORMAL POWER INITIATING EVENT <MODULE> MD PUMP TRAIN A FAILS TO DELIVER OF FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS. <module> SW PUMP 5C FAILS TO START OR ESFAS EQUIPMENT FAILS		9.100E-02 6.771E-03 5.43E-03 4.147E-03	9.10E-02 6.77E-03 5.43E-03 4.15E-03	1.39E-08
363) T3A FQ1QX0P4 HMOD41AFLSS	STEAM LINE BREAK UPSTREAM OF NRV (S/G #1) SD APW HMP P4 IS O.O.S. FOR MAINT. <module> FAILURE OF P41A DUE TO PUMP, CHECK VALVES OR BREAKER	1.18E-2	2.450E-04 1 4.779E-03	2.45E-04 1.18E-02 4.78E-03	1.38E-08
364) T3A FQ1QX0P4 HMOD41CFLST	STEAM LINE BREAK UPSTREAM OF NRV (S/G #1) SD APW PUMP P4 IS O.O.S. FOR MAINT. <module> FAILURE OF P41C DUE TO PUMP, CHECK VALVES OR BXR	1.18E-2	2.450E-04 1 4.779E-03	2.45E-04 1.18E-02 4.78E-03	1.38E-08
365) T2 FMODPMPCCPCD FMOSSDPDELE KCNOMRC QARAF1	LOSS OF MAIN FEEDWATER <MODULE> CCP ₂ OF THE MD PUMP TRAIN COMPONENTS FAIL APW <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS FAILURE TO RECOVER MPW GIVES LOSS OF MPW INITIATING EVENT COGNITIVE ERROR TO INITIATE BLEED AND PHED		7.000E-01 7.510E-05 1.830E-02 1.43E-01 0.1	7.00E-01 7.51E-05 1.83E-02 1.43E-01 1.00E-01	1.38E-08
366) T11 AMODDGBFLTKI F29QX09A FQ1PX0P4	LOSS OF VITAL AC PANELS VA10 & VA10 <module> D/G 15G-13U FAULTS APW MD PUMP 9A IS O.O.S. DUE TO MAINT. OF FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS.	3.83E-3	1 5.241E-02 5.43E-03	3.83E-03 5.24E-02 5.43E-03	1.36E-08
367) S4 REC32B WAVGX32A WMOAIRCVBG	LARGE LOCA OPERATOR RECOVERY OF CLOSING 2-SW-3.2B AFTER IT HAS FAILED TO CLD AOV 2-SW-3.2A FAILS TO OPERATE- PTC, MECH. FAIL. <module> A/S CHECK VALVE TO SW-3.2B FAILS	3.15E-3	6.40E-04 5.0E-02 1 1.334E-01	6.40E-04 5.00E-02 3.15E-03 1.33E-01	1.34E-08
368) S4 REC32A WAVGX32B WMOAIRCVAG	LARGE LOCA OPERATOR RECOVERY OF CLOSING 2-SW-3.2A AFTER IT HAS FAILED TO CLD AOV 2-SW-3.2B FAILS TO OPERATE- PTC, MECH. FAIL. <module> A/S CHECK VALVE TO SW-3.2A FAILS	3.15E-3	6.40E-04 5.0E-02 1 1.334E-01	6.40E-04 5.00E-02 3.15E-03 1.33E-01	1.34E-08
369) T3 FMOSSDPDELD FMOSSGL9BI RDC1 RDC2	LOSS OF DC BUS 201A <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS <MODULE> SG LOW LEVEL AAPW LOGIC FAILS TO START MD PUMP 9B FAILURE TO RECOVER DC POWER (SHORT TERM) FAILURE TO RECOVER DC POWER (35 MIN)		1.830E-02 1.380E-04 2.16E-01 4.35E-01	1.83E-02 1.38E-04 2.16E-01 4.35E-01	1.34E-08
370) T8 AMODDGAFLTKI FMODMDDELC3 FMOSSDPDELD SQ2QX43B	LOSS OF NORMAL POWER INITIATING EVENT <module> D/G 15G-12U FAULTS <MODULE> MD PUMP 9E FAILS TO DELIVER <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS CONTAINMENT SPRAY PUMP P-433 OUT FOR MAINT.	2.27E-2	9.100E-02 5.241E-02 6.771E-03 1.830E-02 1	9.10E-02 5.24E-02 6.77E-03 1.83E-02 2.27E-02	1.34E-08
371) T8 AMODDGBFLTKI FMODMDDELC3 FMOSSDPDELD SQ2QX43A	LOSS OF NORMAL POWER INITIATING EVENT <module> D/G 15G-13U FAULTS <MODULE> MD PUMP TRAIN A FAILS TO DELIVER <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS CONTAINMENT SPRAY PUMP P-43A OUT FOR MAINT.	PROB 2.27E-2	9.100E-02 5.241E-02 6.771E-03 1.830E-02 1	9.10E-02 5.24E-02 6.77E-03 1.83E-02 2.27E-02	1.34E-08
372) S2 QDCV QAFSASREC YMOCCCHSMG	SMALL LOCA (PIPE RUPTURE) COGNITIVE ERROR TO RECOVER DC SWGR ROOM VENTILATION OP. REC. MANUAL INIT. OF ESAS EQIP. FOLLOWING LOSS OF SWGR PM. VE <module> DC SWGR ROOMS A & B COMMON CAUSE FAILURES		2.25E-03 1.0E-01 5.00E-02 1.187E-02	2.25E-03 1.00E-02 5.00E-02 1.19E-02	1.34E-08
373) T3A FQ1QX0P4	LOSS OF BOTH DC BUSES (BUS 201A FIRST?) SD APW PUMP P2 IS O.O.S. FOR MAINT.	1.18E-2	1 1.130E-06 1	1.13E-06 1.18E-02	1.33E-08
374) S2 HMOD41CFLST	SMALL LOCA (PIPE RUPTURE) <module> FAILURE OF P41C DUE TO PUMP, CHECK VALVES OR BXR		2.25E-03 4.779E-03	2.25E-03 4.78E-03	1.33E-08

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CUTSET REPORT

MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	B.E. PROB.	MOD./CS. PROB.
375) WH20XKDA S2	HEADER 2 OUT-OF-SERVICE FOR MAINT. SMALL LOCA (PIPE RUPTURE)		1.24E-03	1.24E-03	
HHOD41AFLSS WH20XEDB	<module> FAILURE OF P41A DCR TO PUMP, CHECK VALVES OR BREAKER		2.25E-03	2.25E-03	1.33E-08
376) T6 FMODCCPHDRG OABAF1	HEADER 6 IS OUT-OF-SERVICE FOR MAINT. LOSS OF SERVICE WATER <MODULE> CCFs OF THE COMMON INJECTION HEADER VALVES		4.779E-03	4.78E-03	
377) T6 P210X0P4 IIINX000	COGNITIVE ERROR TO INITIATE BLEED AND FEED LOSS OF SERVICE WATER SD APW PUMP P4 IS O.O.S. FOR MAINT.	1.18E-2	1.24E-03	4.44E-03	1.33E-08
378) T3 FMODCCPHDRG HHOD41AFLSS	LOSS OF NORMAL POWER LOSS OF NORMAL POWER INITIATING EVENT <MODULE> CCFs OF THE COMMON INJECTION HEADER VALVES		2.995E-05	3.00E-05	
379) T3 FMODCCPHDRG HHOD41CFLST	<module> FAILURE OF P41A DUE TO PUMP, CHECK VALVES OR BREAKER LOSS OF NORMAL POWER INITIATING EVENT <MODULE> CCFs OF THE COMMON INJECTION HEADER VALVES		9.100E-02	9.10E-02	1.30E-08
380) T3 A32GXCY2 FMODCCPHDRG	LOSS OF NORMAL POWER INITIATING EVENT TIE BREAKER 24C-1'-2 FAILS TO OPEN <MODULE> CCFs OF THE COMMON INJECTION HEADER VALVES	7.96E-4	2.995E-05	3.00E-05	
381) T3 A82GXDT2 FMODCCPHDRG	LOSS OF NORMAL POWER INITIATING EVENT TIE BREAKER 24D-1'-2 FAILS TO OPEN <MODULE> CCFs OF THE COMMON INJECTION HEADER VALVES	7.96E-4	9.100E-02	5.10E-02	1.30E-08
382) S1 R23FARRP	SMALL SMALL LOCA (INCLUDES RCP SEAL RUPTURE) COMMON CAUSE FAILURE OF 2/2 RBCCW PUMPS TO RUN	2.98E-6	4.65E-03	4.65E-03	1.30E-08
383) T6 AMODCCPFTRAB FMOSSDEDELE	LOSS OF SERVICE WATER <module> CCF OF THE FEEDER BREAKERS TO FAST TRANSFER <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		1.592E-04	1.59E-04	
384) T.3 R"	LOSS OF DC BUS 201A FAILURE OF REACTOR TRIP SYSTEM		1.830E-02	1.83E-02	1.28E-08
385) T. AMOD24CFPLB AMODDGAFLAUI FMOOMY3DELCE PQ1PX0P4	CONTAINMENT SPRAY PUMP P-433 OUT FOR MAINT. GENERAL PLANT TRANSIENT <module> FAILURE OF BUS 24C FAST TRANSFER LOGIC <module> D/G 15G-12U FAULTS <MODULE> HD PUMP 9B FAILS TO DELIVER	2.27E-2	4.440E-03	4.44E-03	1.29E-08
386) S4 HHODCV7AILST	OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS. LARGE LOCA <module> CHECK VALVE FAILURE CAUSES LPSI PIPE FAILURE		1.592E-04	1.59E-04	
387) T14 FMOSSD3DFLD FMOSSGJL9AI RDC1 RDC2	LOSS OF DC BUS 201B <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS <MODULE> 3G LOW LEVEL AAPW LOGIC FAILS TO START MD PUMP 9A FAILURE TO RECOVER DC POWER (SHORT TERM) FAILURE TO RECOVER DC POWER (35 MIN)		5.660E-02	5.66E-02	1.28E-08
388) T6 AMOD24DLNPRKI FMODCCPHDRG	LOSS OF NORMAL POWER INITIATING EVENT <module> FAILURE OF BUS 24D LNP LOGIC <MODULE> CCFs OF THE COMMON INJECTION HEADER VALVES		1.00E-05	1.00E-05	
389) T6 FVXG43B FMOHDHVLVAG Q8BAPLBP	LOSS OF NORMAL POWER INITIATING EVENT APW REG. VLV. FW-43B FAILS TO OP. DUE TO MECH. FAIL. <MODULE> AD CV 12A OR REG VLV 43A FAILURE COGNITIVE ERROR TO INITIATE BLEED AND FEED/LNP INITIATOR	3.15E-3	9.100E-02	9.10E-02	1.26E-08
390) T2	LOSS OF MAIN FEEDWATER		7.000E-01	7.00E-01	1.26E-08

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CUTSET REPORT

MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	F.R. PROB.	MOD./CS. PROB.
	LIFTOFEN PRVVK200 WALGASWV		0.1	1.00E-01	
391)	T2 LIFTOFEN PRVVK201 WALGASWV	2.98E-3 3.70E-5	1 6.8E-2	2.98E-03 6.04E-05	1.26E-08
392)	T13 FRODMDRDLICB F01PKCP4 QMODFAN15BIT RDC1 RDC2		0.1	1.00E-01	
393)	T3 FRODPMPCPCD FRODSDPDELE OABAFIAP	2.98E-3 3.70E-5	1 6.8E-2	2.98E-03 6.04E-05	1.25E-08
394)	T2 DBT0KDB1 DBT2KDB1 FRODSDPDELD FP9QX03B		5.660E-02	5.66E-02	1.25E-08
395)	S3 RNODCS161BIOE RBC32B WNODAIRCVBG	3.83E-3	1	3.83E-03	1.24E-08
396)	S3 RNODCS161AIRZ RBC32A WNODAIRCVBG		7.10E-04	7.10E-04	1.24E-08
397)	T8 ACRBC54 AMODDGAFLTJI AMODKGRFLTKI F01PK0P4		2.626E-03	2.63E-03	1.23E-08
398)	S5 HIRBLOCAL OASGI RAVGAREV	3.15E-3	6.8E-02	2.14E-04	
399)	S1 OAFAN OASGI RAVGA22B	3.15E-3	6.8E-2	2.14E-04	
400)	S1 HISWLOCAL OASGI WAVGASWV		2.20E-02	2.20E-02	1.23E-08
401)	T14 RT SQ2QX83A	3.15E-3	6.80E-2	2.14E-04	1.21E-08
			1.00E-05	1.00E-05	
		(PROB.)	2.27E-2	2.27E-02	

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OUTSET REPORT

MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	B.E. PROB.	MOD./CS. PROB.
402) TE	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	1.21E-08
	<MODULE> CCPs OF THE COMMON INJECTION HEADER VALVES		2.995E-05	3.00E-05	
	<module> RBCCW PUMP 11C FAILS TO START OR ELECTRICAL COMPONENT FAILS		4.440E-03	4.44E-03	
403) TE	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	1.21E-08
	<MODULE> CCPs OF THE COMMON INJECTION HEADER VALVES		2.995E-05	3.00E-05	
	<module> RBCCW PUMP 11A FAILS TO START OR ELECTRICAL COMPONENTS FAIL		4.440E-03	4.44E-03	
404) T1	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	1.21E-08
	<module> FAILURE OF BUS 24D TO FAST TRANSFER		2.019E-03	2.02E-03	
	<module> D/G 15G-13U FAULTS		5.241E-02	5.24E-02	
	<MODULE> MD PUMP TRAIN A FAILS TO DELIVER		6.771E-03	6.77E-03	
	OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS.		5.43E-03	5.43E-03	
405) TE	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	1.20E-08
	<module> D/G 15G-12U FAULTS		5.241E-02	5.24E-02	
	<MODULE> SD PUMP FAILS TO DEL AFW TO HEADERS		1.830E-02	1.83E-02	
	<MODULE> SG LOW LEVEL AAFW LOGIC FAILS TO START MD PUMP 9B		1.380E-04	1.38E-04	
406) TE	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	1.20E-08
	<module> D/G 15G-13U FAULTS		5.241E-02	5.24E-02	
	<MODULE> SD PUMP FAILS TO DEL AFW TO HEADERS		1.830E-02	1.83E-02	
	<MODULE> SG LOW LEVEL AAFW LOGIC FAILS TO START MD PUMP 9A		1.380E-04	1.38E-04	
407) T2A	STEAM LINE BREAK UPSTREAM OF NRV (S/G #1)		2.450E-04	2.45E-04	1.20E-08
	OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS.		5.43E-03	5.43E-03	
	MANIPULATIVE ERROR TO INITIATE FEED AND BLEED		9.03E-3	9.03E-03	
408) S2	SMALL LOCA (PIPE RUPTURE)	8.58E-8	3E	1.11E-03	1.20E-08
	CHECK VLV CS-15B FAILS TO OPEN		4.779E-03	4.78E-03	
	<module> FAILURE OF P41A DUE TO PUMP, CHECK VALVES OR BREAKER		2.25E-03	2.25E-03	1.20E-08
409) S2	SMALL LOCA (PIPE RUPTURE)	8.58E-8	3E	1.11E-03	1.20E-08
	CHECK VLV CS-15A FAILS TO OPEN		4.779E-03	4.78E-03	
	<module> FAILURE OF P41C DUE TO PUMP, CHECK VALVES OR BRK		5.660E-02	5.66E-02	1.19E-08
410) T13	LOSS OF DC BUS 201A		6.771E-03	6.77E-03	
	<MODULE> MD PUMP 9B FAILS TO DELIVER		1.830E-02	1.83E-02	
	<MODULE> SD PUMP FAILS TO DEL AFW TO HEADERS		1.007E-02	1.01E-02	
	<module> DAMPERS FAIL OR HPS. PUMP B CIRCUITRY FAILS (TRAIN B)		2.16E-01	2.16E-01	
	FAILURE TO RECOVER DC POWER (SHORT TERM)		4.35E-01	4.35E-01	
	FAILURE TO RECOVER DC POWER (35 MIN)		5.340E-02	5.34E-02	1.18E-08
411) T14	LOSS OF DC BUS 201B		6.771E-03	6.77E-03	
	<MODULE> MD PUMP TRAIN A FAILS TO DELIVER		1.3E-2	1.30E-02	
	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		2.674E-02	2.67E-02	
	<module> ISPRS FAN, MOV 2RB-68.1A OR CIRCUITRY FAILS		2.16E-01	2.16E-01	
	FAILURE TO RECOVER DC POWER (SHORT TERM)		4.35E-01	4.35E-01	
	FAILURE TO RECOVER DC POWER (35 MIN)		2.450E-04	2.45E-04	1.18E-08
412) T2A	STEAM LINE BREAK UPSTREAM OF NRV (S/G #1)		2.626E-03	2.63E-03	
	<module> MOV CS-16.1B FAILS TO OPEN		1.830E-02	1.83E-02	
	<MODULE> SD PUMP FAILS TO DEL AFW TO HEADERS		2.450E-04	2.45E-04	1.18E-08
413) T2A	STEAM LINE BREAK UPSTREAM OF NRV (S/G #1)		2.626E-03	2.63E-03	
	<module> MOV CS-16.1A FAILS TO OPEN		1.830E-02	1.83E-02	
	<MODULE> SD PUMP FAILS TO DEL AFW TO HEADERS		1.250E-02	1.25E-02	1.17E-08
414) T11	LOSS OF VITAL AC PANELS VA10 & VA30		1	1.06E-02	
	DIRECTOR GENERATOR 15G-13U OUT OF SERVICE DUE TO MAINTENANCE	1.06E-2	1	1.06E-02	
	<MODULE> MD PUMP TRAIN A FAILS TO DELIVER		6.771E-03	6.77E-03	
	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	

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CITSET REPORT

MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	B.E. PROB.	MOD./CS. PROB.
415) S1 LCVABCCA VUMXR70	SMALL SMALL LOCA (INCLUDES RCP SEAL RUPTURE) CC FAILURE OF 2 OF 3 CHECK VALVES (2-SI-217, 27, 37 & 47) RATIO OF P(3/3)/P(2/3) COMMON CAUSE FOR CHECK VALVES	8.52E-8	4.65E-03	4.65E-03	1.16E-08
415) VIC	V-SEQUENCE: LETDOWN LINE		1.24E+03	5.32E-05	
417) T1	GENERAL PLANT TRANSIENT		4.690E-02	4.69E-02	1.16E-08
EMODCS161AINE	<module> MOV CS-16.1A FAILS TO OPEN		1.160E-08	1.16E-08	1.16E-08
EMOD41CPLST	<module> FAILURE OF P41C DUE TO PUMP, CHECK VALVES OR BRK		3.100E+00	3.10E+00	1.16E-08
LIFTOPEN	GIVEN A PRECURSOR, PORVs OR SAFETIES LIFT AND REMAIN OPEN		2.626E-03	2.63E-03	
PRVX2(0)	CODE SAFETY RC-200 FAILS TO CLOSE DUE TO MECH. FAILURE	2.92E-3	4.779E-03	4.78E-03	
413) T1	GENERAL PLANT TRANSIENT		0.1	1.00E-01	
EMODCS161AINE	<module> MOV CS-16.1A FAILS TO OPEN		1	2.98E-03	
EMOD41CFLST	<module> FAILURE OF P41C DUE TO PUMP, CHECK VALVES OR BRK		3.100E+00	3.10E+00	1.16E-08
LIFTOPEN	GIVEN A PRECURSOR, PORVs OR SAFETIES LIFT AND REMAIN OPEN		2.626E-03	2.63E-03	
PRVX2(1)	CODE SAFETY RC-201 FAILS TO CLOSE DUE TO MECH. FAILURE	2.92E-3	4.779E-03	4.78E-03	
413) T1	GENERAL PLANT TRANSIENT		0.1	1.00E-01	
EMODCS161BIOZ	<module> MOV CS-16.1B FAILS TO OPEN		1	2.98E-03	
EMOD41AFLSS	<module> FAILURE OF P41A DUE TO PUMP, CHECK VALVES OR BREAKER		3.100E+00	3.10E+00	1.16E-08
LIFTOPEN	GIVEN A PRECURSOR, PORVs OR SAFETIES LIFT AND REMAIN OPEN		2.626E-03	2.63E-03	
PRVX2(1)	CODE SAFETY RC-201 FAILS TO CLOSE DUE TO MECH. FAILURE	2.92E-3	4.779E-03	4.78E-03	
423) T1	GENERAL PLANT TRANSIENT		0.1	1.00E-01	
EMODCS161BIOZ	<module> MOV CS-16.1B FAILS TO OPEN		1	2.98E-03	
EMOD41AFLSS	<module> FAILURE OF P41A DUE TO PUMP, CHECK VALVES OR BREAKER		3.100E+00	3.10E+00	1.16E-08
LIFTOPEN	GIVEN A PRECURSOR, PORVs OR SAFETIES LIFT AND REMAIN OPEN		2.626E-03	2.63E-03	
PRVX2(0)	CODE SAFETY RC-200 FAILS TO CLOSE DUE TO MECH. FAILURE	2.92E-3	4.779E-03	4.78E-03	
421) T2	LOSS OF MAIN FEEDWATER		0.1	1.00E-01	
AMODCCFLNPKJAB	<module> COMMON CAUSE FAILURE OF AC POWER GIVEN A8 LMP		1	2.98E-03	
EMODSDDELD	<module> SD PUMP FAILS TO DEL APW TO HEADERS		7.000E-01	7.00E-01	1.16E-08
IIINX0C0	LOSS OF NORMAL POWER		3.622E-03	3.62E-03	
422) T1	GENERAL PLANT TRANSIENT		1.830E-02	1.83E-02	
AMODDG2FLTK	<module> D/G 15G-12U FAULTS		2.49E-4	2.49E-04	
AMODDG6FLTK	<module> D/G 15G-13U FAULTS		3.100E+00	3.10E+00	1.15E-08
FQ1PK0P4	OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS.		5.241E-02	5.24E-02	
IIINX0C0	LOSS OF NORMAL POWER		5.241E-02	5.24E-02	
423) T9	MAIN FEEDLINE BREAK IN TURBINE BUILDING (UPSTREAM OF MPW AIR ASST.)		5.43E-03	5.43E-03	
FRCHX018	OPENING COIL RY5279 FAILS TO DEENERGIZE	1.25E-4	2.49E-4	2.49E-04	
QABAP1	COGNITIVE ERROR TO INITIATE BLEED AND FREE		9.200E-04	9.20E-04	1.15E-08
424) T1	GENERAL PLANT TRANSIENT		1	1.25E-04	
AR2GX4C2	4.16KV CIRCUIT BREAKER 2S3-24B-2 FAILS TO OPEN	7.96E-4	0.1	1.00E-01	
AMODDG6FLTK	<module> D/G 15G-13U FAULTS		3.100E+00	3.10E+00	1.14E-08
PMODMD2DLCA	<module> MD PUMP TRAIN A FAILS TO DELIVER		5.241E-02	5.24E-02	
FQ1PKCP4	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		6.771E-03	6.77E-03	
425) T1	GENERAL PLANT TRANSIENT		1.3E-2	1.30E-02	
AR2GX4C2	TIE BREAKER 22S3-24C-2 FAILS TO CLOSE	7.96E-4	3.100E+00	3.10E+00	1.14E-08
AMODDG2FLTK	<module> D/G 15G-12U FAULTS		1	7.96E-04	
PMODMD2DLCA	<module> MD PUMP 9B FAILS TO DELIVER		5.241E-02	5.24E-02	
FQ1PKCP4	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		6.771E-03	6.77E-03	
425) T1	GENERAL PLANT TRANSIENT		1.3E-2	1.30E-02	
AR2GX4C2	TIE BREAKER 22S3-24D-2 FAILS TO CLOSE	7.96E-4	3.100E+00	3.10E+00	1.14E-08
AMODDG6FLTK	<module> D/G 15G-13U FAULTS		1	7.96E-04	
PMODMD2DLCA	<module> MD PUMP TRAIN A FAILS TO DELIVER		5.241E-02	5.24E-02	
			6.771E-03	6.77E-03	

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CUTSET REPORT

MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	B.E. PROB.	MOD./CH. PROB.
427) T1	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP. GENERAL PLANT TRANSIENT		1.3E-2	1.30E-02	
AB2GX4A2	4.16KV CIRCUIT BREAKER 2S3-24A-2 FAILS TO OPER	7.96E-4	5.100E+00	3.10E+00	1.14E-08
AMODDGAFLTJ1	<module> D/G 15G-12U FAULTS		1	7.96E-04	
FMODMDDDELZB	<MODULE> MD PUMP 9B FAILS TO DELIVER		5.241E-02	5.24E-02	
FQ1PXCPC4	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		6.771E-03	5.77E-03	
428) T13	LOSS OF DC BUS 201A		1.3E-2	1.30E-02	
FMODMDDDELZB	<MODULE> MD PUMP 9B FAILS TO DELIVER		5.660E-02	5.66E-02	1.14E-08
FQ1QX#P4	SD APW PUMP 24 IS O.O.S. FOR MAINT.	1.18E-2	6.771E-03	5.77E-03	
QMODFAN15BIT	<module> ESPRS FAN, AOV 2RB 68.13 OR CIRCUITRY FAILS		1	1.18E-02	
EDC1	FAILURE TO RECOVER DC POWER (SHORT TERM)		2.674E-02	2.67E-02	
EDC2	FAILURE TO RECOVER DC POWER (35 MIN)		2.16E-01	2.16E-01	
429) TR	LOSS OF NORMAL POWER INITIATING EVENT		4.35E 01	4.35E-01	
AMODDGAFLTJ1	<module> D/G 15G-12U FAULTS		9.100E-02	9.10E-02	1.13E-08
FMODUVLC9BI	<MODULE> UV LOGIC FAILS TO OPERATE MD PUMP 9B		5.241E-02	5.24E-02	
FQ1PX#P4	OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS.		4.375E-04	4.38E-04	
430) TR	LOSS OF NORMAL POWER INITIATING EVENT		5.43E-03	5.43E-03	
AMODDGBFLTKI	<module> D/G 15G-13U FAULTS		9.100E-02	9.10E-02	1.13E-08
FMODUVL09AC	<MODULE> UV LOGIC COMPONENTS FAIL TO OPERATE MD PUMP 9A		5.241E-02	5.24E-02	
FQ1PX#P4	OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS.		4.375E-04	4.38E-04	
431) TB	LOSS OF NORMAL POWER INITIATING EVENT		5.43E-03	5.43E-03	
FMODCCPHDRG	<MODULE> CCPs OF THE COMMON INJECTION HEADER VALVES		9.100E-02	9.10E-02	1.13E-08
WMODP5AFTSAIN	<module> SW PUMP 5A FAILS TO START OR ESPAS EQUIPMENT FAILS		2.995E-05	3.00E-05	
432) TR	LOSS OF NORMAL POWER INITIATING EVENT		4.147E-03	4.15E-03	
FMODCCPHDRG	<MODULE> CCPs OF THE COMMON INJECTION HEADER VALVES		9.100E-02	9.10E-02	1.13E-08
WMODP5CFTSAIN	<module> SW PUMP 5C FAILS TO START OR ESPAS EQUIPMENT FAILS		2.995E-05	3.00E-05	
433) T14	LOSS OF DC BUS 201B		4.147E 03	4.15E-03	
FMODMDEALCA	<MODULE> MD PUMP TRAIN A FAILS TO DELIVER		5.340E-02	5.34E-02	1.12E-08
FMODSEPELDB	<MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		6.771E-03	6.77E-03	
QMODDAMPRAJ5	<module> DAMPERS FAIL OR HPSI PUMP B CIRCUITRY FAILS (TRAIN A)		1.830E-02	1.83E-02	
R0C1	FAILURE TO RECOVER DC POWER (SHORT TERM)		1.807E-02	1.81E-02	
R0C2	FAILURE TO RECOVER DC POWER (35 MIN)		2.16E-01	2.16E 01	
434) T2	LOSS OF MAIN FEEDWATER		4.35E-01	4.35E-01	
EMODRAPPABJOPQ	<module> NORMAL FLOW PATHS WITH BORIC ACID PUMPS FAILS		7.000E-01	7.00E-01	1.12E-08
EMODGRAVITINPQ	<module> EMERGENCY BORATION GRAVITY FEED FAILS		6.891E-02	6.89E-02	
RT	FAILURE OF REACTOR TRIP SYSTEM		2.327E-02	2.33E-02	
435) S4	LARGE LOCA		1.00E-35	1.00E 05	
EMODCS161BIOE	<module> MOV CS-16.1B FAILS TO OPEN		6.40E-34	6.40E-04	1.12E-08
REC32P	OPERATOR RECOVERY OF CLOSING 2-SW-3.2B AFTER IT HAS FAILED TO CLD		2.626E-03	2.63E-03	
EMODAIRCVBG	<module> A/S CHECK VALVE TO SW-3.2B FAILS		5.0E-02	5.00E-02	
436) S4	LARGE LOCA		1.334E-01	1.33E-01	
EMODCS161AINE	<module> MOV CS-16.1A FAILS TO OPEN		6.40E-04	6.40E-04	1.12E-08
REC32A	OPERATOR RECOVERY OF CLOSING 2-SW-3.2A AFTER IT HAS FAILED TO CLO		2.626E-03	2.63E-03	
EMODAIRCVAG	<module> A/S CHECK VALVE TO SW-3.2A FAILS		5.0E-02	5.00E-02	
437) T.1	LOSS OF VITAL AC BARRIS VA10 & VA30		1.334E-01	1.33E-01	
AMODDGG3FLTRI	<module> D/G 15G-13U FAULTS		1.250E-02	1.25E-02	1.11E-08
FQ1PXC#4	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		5.241E-02	5.24E-02	
QAAPWR3C	OPERATOR MANUALLY STARTS APW GIVEN AUTO START SIGNAL FAILS		1.3E-2	1.30E-02	
438) T.5A	STREAM LINE BREAK UPSTREAM OF MRV (S/C #1)		1.3E-03	1.30E-03	
FMODHDRVLEB	<MODULE> AO CV FW-12B OR REG VLV FW-43B FAILURE		2.450E-04	2.45E-04	1.08E-08
			4.404E-04	4.40E-04	

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MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	B.E. PROB.	MOD./CS. PROB.
439) QABAF1 Y3B FMOHDHRLVLA CABAF.	COGNITIVE ERROR TO INITIATE BLEED AND FEED STEAM LINE BREAK UPSTREAM OF NRV (S/G #2) <MODULE> AO 2V 12A OR REG VLV 43A FAILURE COGNITIVE ERROR TO INITIATE BLEED AND FEED		6.1	1.00E-01	
440) T14 FMOHMDADRLCA FQ1QX0P4 CMODFAN15AIS RDC1 RDC2	LOSS OF DC BUS 201B <MODULE> MD PUMP TRAIN A FAILS TO DELIVER SD APW PUMP #4 IS O.O.S. FOR MAINT. <module> ESPRS FAN, AOV 2RB-68.1A OR CIRCUITRY FAILS FAILURE TO RECOVER DC POWER (SHORT TERM) FAILURE TO RECOVER DC POWER (35 MIN)	1.18E-2	1	1.18E-02	
441) S3 HMOD41AFLSS WAVGX12A	MEDIUM LOCA <module> FAILURE OF P41A DUE TO PUMP, CHECK VALVES OR BREAKER AOV 2-SW-3.2A FAILS TO OPERATE- FTC, MECH. FAIL.	3.15E-3	1	3.15E-03	1.08E-08
442) S3 HMOD41CFLSS WAVGX32B	MEDIUM LOCA <module> FAILURE OF P41C DUE TO PUMP, CHECK VALVES OR BCR AOV 2-SK-3.2B FAILS TO OPERATE- FTC, MECH. FAIL.	3.15E-3	1	3.15E-03	1.07E-08
443) T1 AIRTXUB5 PC9QX09E FQ1PXCP4	GENERAL PLANT TRANSIENT TRANSFORMER 24C1-1X FAULT (UES) APW MD PUMP 9B IS O.O.S. DUE TO MAINT. COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.	2.88E-6 3.83E-3	24 1	6.91E-05 3.83E-03	1.07E-08
444) T13 FMOHMDADRLCB FQ1PXCP4 RXC1 RDC2 SQ2QX43B	LOSS OF DC BUS 201A <MODULE> MD PUMP 9B FAILS TO DELIVER COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP. FAILURE TO RECOVER DC POWER (SHORT TERM) FAILURE TO RECOVER DC POWER (35 MIN) CONTAINMENT SPRAY PUMP P-43B OUT FOR MAINT.		1.3E-2	1.30E-02	1.06E-08
445) T11 AMODDGBFLTKI FMOHMDADRLCA FMOHMDADRLC OAPAN	LOSS OF VITAL AC PANELS VA10 & VA30 <module> D/G 15G-13U FAULTS <MODULE> MD PUMP TRAIN A FAILS TO DELIVER <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS OPERATOR ACTION TO RECOVER RSP ROOM VENTILATION (GA AND HI)	2.27E-2	1	2.27E-02	1.06E-08
446) S4 XVMDUT3M	LARGE LOCA COMMON CAUSE FAILURE OF 2/4 LEVEL SENSORS/TRANSMITTERS		6.40E-04	6.40E-04	1.05E-08
447) T DBSTXV10 FMOHMDADRLCB FQ1PX0P4	GENERAL PLANT TRANSIENT LOSS OF DC CONTROL PANEL DV10 (201A-IV) <MODULE> MD PUMP 9E FAILS TO DELIVER OF FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS.	3.83E-6	24	9.19E-05	1.05E-08
448) T1 DBSTXV20 FMOHMDADRLCA FQ1PX0P4	GENERAL PLANT TRANSIENT LOSS OF DC CONTROL PANEL DV20 (201B-IV) <MODULE> MD PUMP TRAIN A FAILS TO DELIVER OF FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS.	3.83E-6	24	9.19E-05	1.05E-08
449) T1 AMOD24CFPLB AMODDGAFLTJI FMOHMDADRLCB FQ1QX0P4	GENERAL PLANT TRANSIENT <module> FAILURE OF BUS 24C PAST TRANSFER LOGIC <module> D/G 15G-12U FAULTS <MODULE> CCPs OF THE COMMON INJECTION HEADER VALVES		3.10E+00	3.10E+00	1.04E-08
450) T1 AE2GXCC2 AMODDGAFLTJI FMOHMDADRLCB FQ1QX0P4	GENERAL PLANT TRANSIENT TIE BREAKER 22S3-24C-2 FAILS TO CLOSE <module> D/G 15G-12U FAULTS <MODULE> MD PUMP 9B FAILS TO DELIVER SD APW PUMP P4 IS O.O.S. FOR MAINT.	7.96E-4 1.18E-2	1 1	7.96E-04 1.18E-02	1.03E-08

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MODULE/EVENT NAME	DESCRIPTION	DATE	EXPOSURE	B.R. PROB.	MOD./CS. PROB.
451) T1 AB2GX4A2 AMODDCAFLEJI FMODDGBFLCB FQ1QXP4	GENERAL PLANT TRANSIENT 4.16KV CIRCUIT BREAKER 2S3-24A-2 FAILS TO OPEN <module> D/G 15G-12U FAULTS <MODULE> MD PUMP 5B FAILS TO DELIVER SD APW PUMP P4 IS O.O.S. FOR MAINT.	7.96E-4	3.100E+00 5.241E-02 6.771E-03	3.10E+00 7.96E-04 5.24E-02 6.77E-03	1.03E-08
452) T1 AB2GX3B2 AMODDGBFLYRI FMODDGADELCA FQ1QXP4	GENERAL PLANT TRANSIENT 4.16KV CIRCUIT BREAKER 2S3-24B-2 FAILS TO OPEN <module> D/G 15G-13U FAULTS <MODULE> MD PUMP TRAIN A FAILS TO DELIVER SD APW PUMP P4 IS O.O.S. FOR MAINT.	7.96E-4	3.100E+00 5.241E-02 6.771E-03	3.10E+00 7.96E-04 5.24E-02 6.77E-03	1.03E-08
453) T1 AB2GXCD2 AMODDGBFLYRI FMODDGADELCA FQ1QXP4	GENERAL PLANT TRANSIENT TIR BREAKER 22S3-24D-2 FAILS TO CLOSE <module> D/G 15G-13U FAULTS <MODULE> MD PUMP TRAIN A FAILS TO DELIVER SD APW PUMP P4 IS O.O.S. FOR MAINT.	7.96E-4	3.100E+00 5.241E-02 6.771E-03	3.10E+00 7.96E-04 5.24E-02 6.77E-03	1.03E-08
454) T1 IIINX000 LIFTOPEN FMOD402FTCV WMOAIRCVRG WMOAIRCVRG	GENERAL PLANT TRANSIENT LOSS OF NORMAL POWER GIVEN A PRECURSOR, PORVs OF SAFETIRS LIFT AND REMAIN OPEN <module> PORV RC-402 FAILS TO CLOSE <module> A/S CHECK VALVE TO SW-3.2A FAILS <module> A/S CHECK VALVE TO SW-3.2B FAILS	1.18E-2	3.100E+00 2.49E-4 7.518E-03 1.334E-01	3.10E+00 2.49E-04 7.52E-03 1.33E-01	1.03E-08
455) T1 IIINX000 LIFTOPEN FMOD404FTCV WMOAIRCVRG WMOAIRCVRG	GENERAL PLANT TRANSIENT LOSS OF NORMAL POWER GIVEN A PRECURSOR, PORVs OF SAFETIRS LIFT AND REMAIN OPEN <module> PORV RC-404 FAILS TO CLOSE <module> A/S CHECK VALVE TO SW-3.2A FAILS <module> A/S CHECK VALVE TO SW-3.2B FAILS	1.18E-2	3.100E+00 2.49E-4 7.518E-03 1.334E-01	3.10E+00 2.49E-04 7.52E-03 1.33E-01	1.03E-08
456) T14 AMOD20CFLE AMODDCAFLEJI FMODSLEPDLB RDC1 RDC2	LOSS OF DC BUS 201B <module> FAILURE OF BUS 24C FAST TRANSFER LOGIC <module> D/G 15G-12U FAULTS <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS FAILURE TO RECOVER DC POWER (SHORT TERM) FAILURE TO RECOVER DC POWER (35 MIN)	3.83E-2	5.340E-02 2.144E-03 5.241E-02 1.830E-02 2.16E-01	5.34E-02 2.14E-03 5.24E-02 1.83E-02 2.16E-01	1.03E-08
457) T13 AMOD24DFTLE AMODDGBFLYRI FMODSLEPDLB RDC1 RDC2	LOSS OF DC BUS 201A <module> FAILURE OF BUS 24D TO FAST TRANSFER <module> D/G 15G-13G FAULTS <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS FAILURE TO RECOVER DC POWER (SHORT TERM) FAILURE TO RECOVER DC POWER (35 MIN)	3.83E-2	5.660E-02 2.019E-03 5.241E-02 1.830E-02 2.16E-01	5.66E-02 2.02E-03 5.24E-02 1.83E-02 2.16E-01	1.03E-08
458) T3 AMOD24CLNPI FQ1QXP4 FQ1PXP4	LOSS OF NORMAL POWER INITIATING EVENT <module> FAILURE OF BUS 24C LMP LOGIC APW MD PUMP 9B IS O.O.S. DUE TO MAINT. OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS.	3.83E-2	9.100E-02 5.430E-03	9.10E-02 5.43E-03	1.03E-08
459) T13 QMODDANPRBIT RT	LOSS OF DC BUS 201A <module> JAMPERS FAIL OR HPSI PUMP B CIRCUITRY FAILS (TRAIN B) FAILURE OF REACTOR TRIP SYSTEM	1.56E-5	5.660E-02 1.807E-02	5.66E-02 1.81E-02	1.02E-08
460) T1 DCTKOCF FMODDGBFLYRI FQ1PXP4	GENERAL PLANT TRANSIENT CCF OF BATTERY CHARGERS DC1 AND DC3 <MODULE> MD PUMP 9E FAILS TO DELIVER COGNITIVE ERROR FOR OP5. FAILING TO INIT. SD PUMP.	1.56E-5	3.100E+00 2.4 6.771E-03	3.10E+00 3.74E-05 6.77E-03	1.02E-08

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MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	R.S. PROB.	MOD./CS. PROB.
461} T11 AMODDGBFLTKI IQ1QX8P4 OAPWREC	LOSS OF VITAL AC PANELS VA10 & VA30 <module> D/G 15G-13U FAULTS SD APW PUMP P4 IS O.O.S. FOR MAINT. OPERATOR MANUALLY STARTS APW GIVEN AUTO START SIGNAL FAILS	1.18E-2	1.250E-02	1.25E-02	1.00E-08
462} S5 EMOD41AFLS3 EMOD41CFLST GASGI	STEAM GENERATOR TUBE RUPTURE <module> FAILURE OF P41A DUE TO PUMP, CHECK VALVES OR BREAKER <module> FAILURE OF P41C DUE TO PUMP, CHECK VALVES OR ERK COGNITIVE ERROR TO ISOLATE STEAM GENERATOR GIVEN S3TR		2.20E-02	2.20E-02	1.00E-08
463} 114 EMODMDDELCA FQ1PXC4 RDC1 RDC2 EQ2QX43A	LOSS OF DC BUS 201B <MODULE> MD PUMP TRAIN A FAILS TO DELIVER COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP. FAILURE TO RECOVER DC POWER (SHORT TERM) FAILURE TO RECOVER DC POWER (35 MIN) CONTAINMENT SPRAY PUMP P-41A OUT FOR MAINT.		5.340E-02	5.34E-02	1.00E-08
454} S2 IIINX00 EMODAIRCVNG EMODAIRCVBG	SMALL LOCA (PIPE RUPTURE) LOSS OF NORMAL POWER <module>A/S CHECK VALVE TO SW-3.2A FAILS <module>A/S CHECK VALVE TO SW-3.2B FAILS	(PROB. 2.27E-2)	2.25E-03	2.25E-03	9.97E-09
455} T13 EMODSEPDDEL0 FQ9QX09B QMODFAN15BIT RDC1 RDC2	LOSS OF DC BUS 201A <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS APW MD PUMP 9B IS O.O.S. DUE TO MAINT. <module>HSFRS FAN. ACV 2RB-68.1B OR CIRCUITRY FAILS FAILURE TO RECOVER DC POWER (SHORT TERM) FAILURE TO RECOVER DC POWER (35 MIN)	3.83E-3	5.660E-02	5.66E-02	9.97E-09
466} T1 AMOD24OFTL6 AMODDGBFLTKI EMODCCPHDRG	GENERAL PLANT TRANSIENT <module> FAILURE OF BUS 24L TO FAST TRANSFER <module> D/G 15G-13U FAULTS <MODULE> CCPs OF THE COMMON INJECTION HEADER VALVES		3.100E+00	3.10E+00	9.82E-09
467} T4 XINQX192 XIMGX532	STEAM LINE BREAK DOWNSTREAM OF THE NRV 5 125VDC/120VAC INVERTER INV-2 OUT OF SERVICE FOR MAINTENANCE AM532 Fails to operate	1.53E-2	2.200E-03	2.20E-03	9.80E-09
468} T4 XINQX191 XIMGX632	STEAM LINE BREAK DOWNSTREAM OF THE NRV 5 125VDC/120VAC INVERTER INV-1 OUT OF SERVICE FOR MAINTENANCE AM632 Fails to operate	1.53E-2	2.200E-03	2.20E-03	9.80E-09
4(9) T2 EMODPNOCCPCD FQ1PXC4 EMPNONRRC OARAPI	LOSS OF MAIN FEEDWATER <MODULE> CCPs OF THE MD PUMP TRAIN COMPONENTS FAIL APW COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP. FAILURE TO RECOVER MFW GIVEN LOSS OF MFW INITIATING EVENT COGNITIVE ERROR TO INITIATE BLEED AND FEED		7.000E-01	7.00E-01	9.77E-09
470} S1 ICVMX014	SMALL SMALL LOCA (INCLUDES RCP SEAL RUPTURE) COMMON CAUSE FAILURE OF 2 OF 2 CHECK VALVES		4.65E-03	4.65E-03	9.77E-09
471} T2 AMOD24CFTL6 AMODDGAFT.TJI EMODMDDELCA EMODSDPDDEL0	LOSS OF MAIN FEEDWATER <module> FAILURE OF BUS 24C FAST TRANSFER LOGIC <module> D/G 15G-12U FAULTS <MODULE> MD PUMP 9E FAILS TO DELIVER <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		7.000E-01	7.00E-01	5.75E-09
472} S2 EMVQX16B EMOD41AFLS3	SMALL LOCA (PIPE RUPTURE) CS-16.1B OOS FOR MAINTENANCE <module> FAILURE OF P41A DUE TO PUMP, CHECK VALVES OR BREAKER	9.34E-4	2.25E-03	2.25E-03	9.72E-09
473} S2	SMALL LOCA (PIPE RUPTURE)		2.25E-03	2.25E-03	9.72E-09

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MODULE/EVENT NAME	DESCRIPTION	DATE	EXPOSURE	B.E. PROB.	MOD./CS. PROB.
	CS-16.1A OOS FOR MAINTENANCE	9.04E-4	1	9.04E-04	
474) 71	<module> FAILURE OF P41C DIE TO PUMP, CHECK VALVES OR BRK GENERAL PLANT TRANSIENT			4.779E-03 4.78E-03	
	<module> CCF OF THE FEEDER BREAKERS TO FAST TRANSFER			5.180E+00 3.10E+00	9.71E-09
	<module> COMMON CAUSE FAILURE OF AC POWER GIVEN AN LNP			1.592E-04 1.59E-04	
475) 714	OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS.			5.622E-03 3.62E-03	
	LOSS OF DC BUS 201B			5.43E-03 5.43E-03	
	<module> DAMPERS FAIL OR HPSI PUMP B CIRCUITRY FAILS (TRAIN A)			5.340E-02 5.34E-02	9.65E-09
476) 78	FAILURE OF REACTOR TRIP SYSTEM			1.807E-02 1.81E-02	
	LOSS OF NORMAL POWER INITIATING EVENT			1.00E-05 1.00E-05	
	DIESEL GENERATOR 15G-13U OUT OF SERVICE DUE TO MAINTENANCE	1.06E-2	1	9.100E-02 9.10E-02	9.65E-09
477) 78	FAILURE OF REACTOR TRIP SYSTEM			1.00E-05 1.00E-05	
	LOSS OF NORMAL POWER INITIATING EVENT			9.100E-02 9.10E-02	9.65E-09
	DIESEL GENERATOR 15G-12U OUT OF SERVICE DUE TO MAINTENANCE	1.06E-2	1	1.06E-02	
478) 713	FAILURE OF REACTOR TRIP SYSTEM			1.00E-05 1.00E-05	
	LOSS OF DC BUS 201A			5.660E-02 5.66E-02	9.65E-09
	<MODULE> MD PUMP 9B FAILS TO DELIVER			6.771E-03 6.77E-03	
	SD AFW PUMP P4 IS O.O.S. FOR MAINT.	1.18E-2	1	1.18E-02	
	FAILURE TO RECOVER DC POWER (SHORT TERM)			2.16E-01 2.16E-01	
	FAILURE TO RECOVER DC POWER (35 MIN)			4.35E-01 4.35E-01	
479) 94	CONTAINMENT SPRAY PUMP P-41B OFF FOR MAINT.	2.27E-2	1	2.27E-02	
	LARGE LOCA			6.40E-04 6.40E-04	9.65E-09
480) 94	<module> FAILURE OF P41C DIE TO PUMP, CHECK VALVES OR BRK	3.15E-3	1	4.779E-03 4.78E-03	
	AOV 2-SW-3.2B FAILS TO OPERATE- PTC, MECH. FAIL.			3.15E-03	
	LARGE LOCA			6.40E-04 6.40E-04	9.63E-09
	<module> FAILURE OF P41A DIE TO PUMP, CHECK VALVES OR BREAKER	3.15E-3	1	4.779E-03 4.78E-03	
481) 91	AOV 2-SW-3.2A FAILS TO OPERATE- PTC, MECH. FAIL.			5.15E-03	
	SMALL SMALL LOCA (INCLUDES RCP SEAL RUPTURE)			4.65E-03 4.65E-03	9.58E-09
	COGNITIVE ERROR TO RECOVER DC SWGR ROOM VENTILATION			1.0E-02 1.00E-02	
	OP. REC., MANUAL INIT. OF ESAS EQIP. FOLLOWING LOSS OF SWGR RM. VE			5.00E-02 5.00E-02	
	<module> CHILLED WATER OR SW COMPONENTS (TRAIN B) O.O.S. FOR MAINT			5.186E-02 5.19E-02	
482) 91	<module> DC SWGR A CHW, SW OR FAN RANDOM FAILURES			7.948E-02 7.95E-02	
	SMALL SMALL LOCA (INCLUDES RCP SEAL RUPTURE)			4.65E-03 4.65E-03	9.56E-09
	COGNITIVE ERROR TO RECOVER DC SWGR ROOM VENTILATION			1.0E-02 1.00E-02	
	OP. REC., MANUAL INIT. OF ESAS EQIP. FOLLOWING LOSS OF SWGR RM. VE			5.00E-02 5.00E-02	
	<module> CHILLED WATER OR SW COMPONENTS (TRAIN A) O.O.S. FOR MAINT			5.186E-02 5.19E-02	
483) 711	<module> DC SWGR B CHW, SW OR FAN RANDOM FAILURES			7.929E-02 7.93E-02	
	LOSS OF VITAL AC PANELS VA10 & VA30			1.250E-02 1.25E-02	9.54E-09
	4.16KV CIRCUIT BREAKER 2B3-24A-2 FAILS TO OPEN	7.96E-4	1	7.96E-04	
	<module> D/G 15G-13U FAULTS			5.241E-02 5.24E-02	
484) T.1	<MODULE> SD PUMP FAILS TO DEL AFW TO HEADERS			1.830E-02 1.83E-02	
	LOSS OF VITAL AC PANELS VA11 & VA30			1.250E-02 1.25E-02	9.54E-09
	TIE BREAKER 22S3-24C-2 FAILS TO CLOSE	7.96E-4	1	7.96E-04	
	<module> D/G 15G-13U FAULTS			5.241E-02 5.24E-02	
485) T.3	<MODULE> SD PUMP FAILS TO DEL AFW TO HEADERS			1.830E-02 1.83E-02	
	LOSS OF DC BUS 201A			5.660E-02 5.66E-02	5.54E-09
	<MODULE> SG LOW LEVEL AAFW LOGIC FAILS TO START MD PUMP 9B			1.380E-04 1.38E-04	
	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.			1.3E-2 1.30E-02	
	FAILURE TO RECOVER DC POWER (SHORT TERM)			2.16E-01 2.16E-01	
	FAILURE TO RECOVER DC POWER (35 MIN)			4.35E-01 4.35E-01	

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MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	B.E. PROB.	MOD./CS. PROB.
486) T8 AMODDGAFL/TJI FMODMDEDEL/CB FQ1PXP4 SQ2QX43B	LOSS OF NORMAL POWER INITIATING EVENT <module> D/G 15G-12U FAULTS <MODULE> MD PUMP 9B FAILS TO DELIVER COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP. CONTAINMENT SPRAY PUMP P-43B OUT FOR MAINT.	2.27E-2	5.100E-02 5.241E-02 6.771E-03 1.3E-2 1	9.10E-02 5.24E-02 5.77E-03 1.30E-02 2.27E-02	9.53E-09
487) T8 FMODDGBFLTKI FMODMADAB/CA FQ1PXP4 SQ2QX43A	LOSS OF NORMAL POWER INITIATING EVENT <module> D/G 15G-13U FAULTS <MODULE> MD PUMP TRAIN A FAILS TO DELIVER COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP. CONTAINMENT SPRAY PUMP P-43A OUT FOR MAINT.	(PROB. 2.27E-2)	9.100E-02 5.241E-02 6.771E-03 1.3E-2 1	9.10E-02 5.24E-02 6.77E-03 1.30E-02 2.27E-02	9.53E-09
488) T14 FMODSDPDELD FP9QX9A QMODFAN15A1S RDC1 RDC2	LOSS OF DC BUS 201B <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS APW MD PUMP 9A IS O.O.S. DUE TO MAINT. <module> ESPRS FAN, AOV 2RB-68.1A OR CIRCUITRY FAILS FAILURE TO RECOVER DC POWER (SHORT TERM) FAILURE TO RECOVER DC POWER (35 MIN)	3.83E-3	5.340E-02 1.830E-02 1 2.674E-02 2.16E-01 4.35E-01	5.34E-02 1.83E-02 1.83E-03 2.67E-02 2.16E-01 4.35E-01	9.40E-09
489) S5 HISGI QANDCV YMODRABDMAGPI YMODRABDMBCPI	STEAM GENERATOR TUBE RUPTURE MANIPULATIVE ERROR TO CLOSE MSIV(S) GIVEN SGTR COGNITIVE ERROR TO RECOVER DC SWGR ROOM VENTILATION <module> DC SWGR A CHW, SW OR FAN RANDOM FAILURES <module> DC SWGR B CHW, SW OR FAN RANDOM FAILURES		2.20E-02 6.71E-3 1.0E-02 7.948E-02 7.929E-02	2.20E-02 6.71E-03 1.00E-02 7.95E-02 7.93E-02	9.30E-09
490) T1 D3CTXCFF FMODMDEDEL/CB FQ1QX0P4	GENERAL PLANT TRANSIENT CCF OF BATTERY CHARGERS DC1 AND DC3 <MODULE> MD PUMP 9B FAILS TO DELIVER SD APW PUMP P4 IS O.O.S. FOR MAINT.	1.56E-5	3.100E+00 2.4 6.771E-03 1	3.10E+00 2.74E-05 6.77E-03 1.18E-02	9.27E-09
491) T9 RT	MAIN FREDLINE BREAK IN TURBINE BUILDING (UPSTREAM OF MPW AIR ASST. FAILURE OF REACTOR TRIP SYSTEM		9.200E-04 1.00E-05	9.20E-04 1.00E-05	9.20E-09
492) T6 AMODCCFFTRAB FQ1PXP4	LOSS OF SERVICE WATER <module> CCF OF THE FREDER BREAKERS TO FAST TRANSFER COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		4.440E-03 1.592E-04 1.3E-2	4.44E-03 1.59E-04 1.30E-02	9.19E-09
493) T2 AMOD24DWTLE AMODDGBPLTKI FMODMADAB/CA FMODSDPDELD	LOSS OF MAIN FEEDWATER <module> FAILURE OF BUS 24D TO FAST TRANSFER <module> D/G 15G-13U FAULTS <MODULE> MD PUMP TRAIN A FAILS TO DELIVER <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		7.000E-01 2.019E-03 5.241E-02 6.771E-03	7.00E-01 2.02E-03 5.24E-02 6.77E-03	9.18E-09
494) T14 FMODMADAB/CA FQ1QX0P4 RDC1 RDC2 SQ2QX43A	LOSS OF DC BUS 201B <MODULE> MD PUMP TRAIN A FAILS TO DELIVER SD APW PUMP P4 IS O.O.S. FOR MAINT. FAILURE TO RECOVER DC POWER (SHORT TERM) FAILURE TO RECOVER DC POWER (35 MIN) CONTAINMENT SPRAY PUMP P-43A OUT FOR MAINT.	1.18E-2	5.340E-02 6.771E-03 1 2.16E-01 4.35E-01 1	5.34E-02 6.77E-03 1.18E-02 2.16E-01 4.35E-01 2.27E-02	5.10E-09
495) S2 HISLOCAL RMODSMR1AFIR RMODSWE1CFIR	SMALL LOCA (PIPE RUPTURE) RECOVERY ACTION: FAILURE TO LOCALLY OPEN SW AOV(s) <module> 2-SW-3.1A FAILS TO OPEN GIVEN A SIAS <module> 2-SW-3.1C FAILS TO OPEN GIVEN A SIAS		2.25E-03 .13 5.572E-03 5.572E-03	2.25E-03 1.30E-01 5.57E-03 5.57E-03	9.08E-09
496) T1 AB2GX4A2 AMODDGAFL/TJI FMODSDPDELD FP9QX09B	GENERAL PLANT TRANSIENT 4.16KV CIRCUIT BREAKER 2S3-24A-2 FAILS TO OPEN <module> D/G 15G-12U FAULTS <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS APW MD PUMP 9B IS O.O.S. DUE TO MAINT.	7.96E-4	3.100E+00 1 5.241E-02 1.830E-02	3.10E+00 7.96E-04 5.24E-02 1.83E-02	9.06E-09
		3.83E-3	1	3.83E-03	

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MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	B.B. PROB.	MOD./CS. PROB.
497) T1	GENERAL PLANT TRANSIENT			3.100E+00	9.06E-09
AB2GX4B2	4.16KV CIRCUIT BREAKER 2S3-24B-2 FAILS TO OPEN	7.96E-4	1	7.96E-04	
AMODDGBFLTKI	<module> D/G 15G-13U FAULTS			5.241E-02	5.24E-02
FMODSDPDELD	<module> SD PUMP FAILS TO DEL APW TO HEADERS			1.830E-02	1.83E-02
FP9QX09A	APW MD PUMP 9A IS O.O.S. DUE TO MAINT.	3.83E-3	1	3.83E-03	
498) T1	GENERAL PLANT TRANSIENT			3.100E+00	9.06E-09
AB2GXCC2	TIE BREAKER 22S3-24C-2 FAILS TO CLOSE	7.96E-4	1	7.96E-04	
AMODDGAFLTJJI	<module> D/G 15G-12U FAULTS			5.241E-02	5.24E-02
FMODSDPDELD	<module> SD PUMP FAILS TO DEL APW TO HEADERS			1.830E-02	1.83E-02
FP9QX09B	APW MD PUMP 9B IS O.O.S. DUE TO MAINT.	3.83E-3	1	3.83E-03	
499) T1	GENERAL PLANT TRANSIENT			3.100E+00	9.06E-09
AB2GXCD2	TIE BREAKER 22S3-24D-2 FAILS TO CLOSE	7.96E-4	1	7.96E-04	
AMODDGBFLTKI	<module> D/G 15G-13U FAULTS			5.241E-02	5.24E-02
FMODSDPDELD	<module> SD PUMP FAILS TO DEL APW TO HEADERS			1.830E-02	1.83E-02
FP9QX09A	APW MD PUMP 9A IS O.O.S. DUE TO MAINT.	3.83E-3	1	3.83E-03	
510) T14	LOSS OF DC BUS 201B			5.340E-02	9.00E-09
FMODSCLL9AI	<module> SG LOW LEVEL AAPW LOGIC FAILS TO START MD PUMP 9A			1.300E-04	1.30E-04
F21PXP4	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.			1.3E-2	1.30E-02
RDC1	FAILURE TO RECOVER DC POWER (SHORT TERM)			2.16E-01	2.16E-01
RDC2	FAILURE TO RECOVER DC POWER (35 MIN)			4.35E-01	4.35E-01
501) T13	LOSS OF DC BUS 201A			5.660E-02	9.95E-09
D3STXV20	LOSS OF DC CONTROL PANEL DV20 (201B-1V)	3.83E-6	24	9.19E-05	
FMODSDPDELD	<module> SD PUMP FAILS TO DEL APW TO HEADERS			1.830E-02	1.83E-02
RDC1	FAILURE TO RECOVER DC POWER (SHORT TERM)			2.16E-01	2.16E-01
RDC2	FAILURE TO RECOVER DC POWER (35 MIN)			4.35E-01	4.35E-01
502) S3	MEDIUM LOCA			7.10E-04	8.91E-09
EMODCS161AHNE	<module> MOV CS-16.1A FAILS TO OPEN			2.626E-03	2.63E-03
EMOD41EFL5T	<module> FAILURE OF P41C DUE TO PUMP, CHECK VALVES OR BIR			4.779E-03	4.78E-03
513) S3	MEDIUM LOCA			7.10E-04	8.91E-09
EMODCS161BIOE	<module> MOV CS-16.1B FAILS TO OPEN			2.626E-03	2.63E-03
EMOD41AFL5S	<module> FAILURE OF P41A DUE TO PUMP, CHECK VALVES OR BREAKER			4.779E-03	4.78E-03
504) T4	STEAM LINE BREAK DOWNSTREAM OF THE NPV S			2.200E-03	8.89E-09
XINQXIN2	125VDC/120VAC INVERTER INV-2 OUT OF SERVICE FOR MAINTENANCE	1.53E-2	1	1.53E-02	
XSSQXV81	STATIC SWITCH VS1 OUT OF SERVICE FOR MAINTENANCE	2.64E-4	1	2.64E-04	
505) T4	STEAM LINE BREAK DOWNSTREAM OF THE NPV S			2.200E-03	8.89E-09
XINQXIN1	125VDC/120VAC INVERTER INV-1 OUT OF SERVICE FOR MAINTENANCE	1.53E-2	1	1.53E-02	
XSSQXV32	STATIC SWITCH VS2 OUT OF SERVICE FOR MAINTENANCE	2.64E-4	1	2.64E-04	
506) T2	LOSS OF MAIN FEEDWATER			7.000E-01	8.87E-09
FMODPMPCCPCT	<module> CCFs OF THE MD PUMP TRAIN COMPONENTS FAIL APW			7.510E-05	7.51E-05
FC1QX09	SD APW PUMP P1 IS O.O.S. FOR MAINT.	1.10E-2	1	1.10E-02	
MFAWNONBC	FAILURE TO RECOVER MPW GIVES LOSS OF MPW INITIATING EVENT			1.43E-01	1.43E-01
OPBAFI	COGNITIVE ERROR TO INITIATE BLEED AND FEED			0.1	1.00E-01
507) T2	LOSS OF MAIN FEEDWATER			7.000E-01	8.84E-09
DPT0XDB1	UNDETECTED DEGRADED BATTERY DB1 (PROB)			2.95E-4	2.95E-04
DPT2XDB1	FRACTION OF BATTERY DB1 PARAMETERS THAT WILL STABILIZE CHARGER DC1			.06	8.60E-01
FP9QX09B	APW MD PUMP 9B IS O.O.S. DUE TO MAINT.	3.83E-3	1	3.83E-03	
FQ1PXP4	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.			1.3E-2	1.30E-02
508) T9	MAIN FEEDLINE BRKAK IN TURBINE BUILDING (UPSTREAM OF MPW AIR ASST.			9.200E-04	8.78E-09
CONDSGFR	CONSEQUENTIAL SGTR			0.0505	5.05E-02
MAVGX05A	MPW AIR-ASST CHK. FLV. PW-5A FAILS TO CLOSE ON DEMAND.	3.15E-3	6	1.89E-02	

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MODULE/EVENT NAME	DESCRIPTION	DATE	EXPOSURE	B.H. PROB.	MOD./CS. PROP.	
509) JADCV T2 AMODDGAFLTNI AMODDGBPLTKI PMODSDPDRID IIRKX00	COGNITIVE ERROR TO RECOVER DC SWGR ROOM VENTILATION LOSS OF MAIN FEEDWATER <module> D/G 15G-12U FAULTS <module> D/G 15G 13U FAULTS <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS LOSS OF NORMAL POWER			1.0E-02 7.000E-01 5.241E-02 5.241E-02 1.830E-02	1.00E-02 7.00E-01 5.24E-02 5.24E-02 1.83E-02	
510) T1 ADQXK12U AMOD24CPTLB PMODM0BDLCLB PMODSDPDRID	GENERAL PLANT TRANSIENT DIESEL GENERATOR 15G-12U OUT OF SERVICE DUE TO MAINTENANCE <module> FAILURE OF BUS 24C FAST TRANSFER LOGIC <MODULE> MD PUMP 5B FAILS TO DELIVER <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS	1.06E-2		3.100E+00 1.06E-02 2.144E-03 6.771E-03 1.830E-02	3.10E+00 1.06E-02 2.14E-03 6.77E-03 1.83E-02	8.733-09
511) S5 BMUDC7PAILST OASGI	STEAM GENERATOR TUBE RUPTURE <module> CHECK VALVE FAILURE CAUSES LPSI PIPE FAILURE COGNITIVE ERROR TO ISOLATE STEAM GENERATOR GIVEN SSTR			2.20E-02 1.980E-05 2E-2	2.20E-02 1.98E-05 2.00E-02	8.71E-09
512) T13 PMODSGL9BI FQ1QX0P4 PDC1 PDC2	LOSS OF DC BUS 201A <MODULE> SG LOW LEVEL AAPW LOGIC FAILS TO START MD PUMP 9B SD APW PUMP P4 IS O.O.S. FOR MAINT. FAILURE TO RECOVER DC POWER (SHORT TERM) FAILURE TO RECOVER DC POWER (35 MIN)	1.18E-2		5.660E-02 1.380E-04 1 2.16E-01 4.35E-01	5.66E-02 1.38E-04 1 2.16E-01 4.35E-01	8.66E-09
513) T8 AMODDGHFLTKI PMODMDADELCA FQ1QX0P4 SQ2QX43A	LOSS OF NORMAL POWER INITIATING EVENT <module> D/G 15G-13U FAULTS <MODULE> MG PUMP FRAK A FAILS TO DELIVER SD APW PUMP P4 IS O.O.S. FOR MAINT. CONTAINMENT SPRAY PUMP P-41A OUT FOR MAINT.	1.18E-2 (PROB. 2.27E-2		9.100E-02 5.241E-02 6.771E-03 1 1.18E-02	9.10E-02 5.24E-02 6.77E-03 1 1.18E-02	8.65E-09
514) T8 AMODDGAFLTNI PMODMDADELCA FQ1QX0P4 SQ2QX43B	LOSS OF NORMAL POWER INITIATING EVENT <module> D/G 15G-12U FAULTS <MODULE> MD PUMP 93 FAILS TO DELIVER SD APW PUMP P4 IS O.O.S. FOR MAINT. CONTAINMENT SPRAY PUMP P-43B OUT FOR MAINT.	1.18E-2 2.27E-2		9.100E-02 5.241E-02 6.771E-03 1 2.27E-02	9.10E-02 5.24E-02 6.77E-03 1 2.27E-02	8.65E-09
515) T2 LIFTOPEN OAFAN PRVBX200 QNEA2B9	LOSS OF MAIN FEEDWATER GIVEN A PRECURSOR, PORVs OR SAFETIES LIFT AND REMAIN OPEN OPERATOR ACTION TO RECOVER ESP ROOM VENTILATION (OR AND HI) CODE SAFETY EC-200 FAILS TO CLOSE DUE TO MECH. FAILURE CCF OF 2/2 BEFRS PANS TO START	2.98E-3		7.000E-01 0.1 0.13 1 3.15E-4	7.00E-01 1.00E-01 1.30E-01 2.98E-03 3.15E-04	3.54E-09
516) T2 LIFTOPEN OAFAN PRVBX201 QNEA2B8	LOSS OF MAIN FEEDWATER GIVEN A PRECURSOR, PORVs OR SAFETIES LIFT AND REMAIN OPEN OPERATOR ACTION TO RECOVER ESP ROOM VENTILATION (OR AND HI) CODE SAFETY EC-201 FAILS TO CLOSE DUE TO MECH. FAILURE CCF OF 2/2 BEFRS PANS TO START	2.98E-3		7.000E-01 0.1 0.13 1 3.15E-4	7.00E-01 1.00E-01 1.30E-01 2.98E-03 3.15E-04	3.54E-09
517) S2 BMODCS161AINE HIRLOCAL PMODRBAOVPIIP	SMALL LOCA (PIPE RUPTURE) <module> MOV CS-16.1A FAILS TO OPEN RECOVERY ACTION: FAIL TO LOCALLY CLOSE RBCCW ADV(e) <module> 2-RB-210 OR 2-RB-8.1B FAIL TO CLOSE			2.25E-03 2.626E-03 1.11E-02 2.200E-03	2.25E-03 2.63E-03 1.11E-02 2.20E-03	8.54E-09
518) T4 DBT0XD31 DBT2XD81 XMQXIN2	STEAM LINE BREAK DOWNSTREAM OF THE NEV 5 UNDETECTED DEGRADED BATTERY DB1 FRACTION OF BATTERY DB1 FAILURES THAT WILL STABILIZE CHARGER DC1 125VDC/120VAC INVERTER INV-2 OUT OF SERVICE FOR MAINTENANCE	(PROB. 2.95E-4 1.53E-2		2.95E-4 1 1.53E-02	2.95E-04 1 1.53E-02	8.54E-09
519) T. DBSTXV10 PRODCCPHDRG	GENERAL PLANT TRANSIENT LOSS OF DC CONTROL PANEL DV10 (201A-1V) <MODULE> CCFs OF THE COMMON INSTRUCTION HEADER VALVES	3.83E-6		3.100E+00 24 2.995E-05	3.10E+00 24 3.00E-05	8.53E-09

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MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	B.H. PROB.	MOD./CS. PROF.
520) T1 DBSTXV20 FMODECFHDNG	GENERAL PLANT TRANSIENT LOSS OF DC CONTROL PANEL DV20 (201R-1V) <MODULE> CCFs OF THE COMMON INJECTION HEADER VALVES	3.83E-6	3.100E+00 24	3.10E+00 9.19E-05	8.53E-09
521) 34 FMOD42APLSS FMOD42BFLST	LARGE LOCA <module> FAILURE OF PUMP 42A DUE TO PUMP, CHECK VALVE OR BREAKER <module> FAILURE OF PUMP 42B DUE TO PUMP, CHECK VALVE OR BREAKER		2.995E-05 6.40E-04	3.00E-05 6.40E-04	8.57E-09
522) T13 FMODESDPDELD FP9QX89B PDC1 PDC2 RQ2QX43B	LOSS OF DC BUS 2(1A) <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS AFW MD PUMP 9B IE O.O.S. DUE TO MAINT. FAILURE TO RECOVER DC POWER (SHORT TERM) FAILURE TO RECOVER DC POWER (35 MIN) CONTAINMENT SPRAY PUMP P-43B OUT FOR MAINT.	3.83E-3	5.660E-02 1.830E-02 1	5.66E-02 1.83E-02 3.83E-03	8.46E-09
523) T13 FMODEMDDBOELCB FQ1PKCP4 CMODDAMPBRBT RDC1 RDC2	LOSS OF DC BUS 201A <MODULE> MD PUMP 9B FAILS TO DELIVER COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP. <module> DAMPERS FAIL OR HPSI PUMP B CIRCUITRY FAILS (TRAIN B) FAILURE TO RECOVER DC POWER (SHORT TERM) FAILURE TO RECOVER DC POWER (35 MIN)	2.27E-2	5.660E-02 6.771E-03 1.3E-2	5.66E-02 5.77E-03 1.30E-02	8.46E-09
524) T14 DBSTXV10 FMODESDPDELD RDC1 RDC2	LOSS OF DC CONTROL PANEL DV10 (201A-1V) <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS FAILURE TO RECOVER DC POWER (SHORT TERM) FAILURE TO RECOVER DC POWER (35 MIN)	3.83E-6	5.340E-02 24	5.34E-02 9.19E-05	8.44E-09
525) T8 ACRRC54 ADGQX13U AMODDGAFLVXI FMODESDPDELD	LOSS OF NORMAL POWER INITIATING EVENT RECOVERY OF AC POWER IN 54 MINUTES DIESEL GENERATOR 15G-13U OUT OF SERVICE DUE TO MAINTENANCE <module> D/G 15G-12U FAULTS <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS	1.06E-2	9.100E-02 4.35E-2 1	9.10E-02 5.09E-03 1.06E-02	8.41E-09
526) T8 ACRRC54 ADGQX12U AMODDGAFLVXI FMODESDPDELD	LOSS OF NORMAL POWER INITIATING EVENT RECOVERY OF AC POWER IN 54 MINUTES DIESEL GENERATOR 15G-12U OUT OF SERVICE DUE TO MAINTENANCE <module> D/G 15G-13U FAULTS <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS	1.06E-2	9.100E-02 4.35E-2 1	9.10E-02 5.09E-03 1.06E-02	8.41E-09
527) T2 FMODEMDADELCA FMODEMDDBOELCB FMODESDPDELD MFWNONRC OABAP1	LOSS OF MAIN FEEDWATER <MODULE> MD PUMP TRAYN A FAILS TO DELIVER <MODULE> MD PUMP 9B FAILS TO DELIVER <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS FAILURE TO RECOVER MFW GIVEN LOSS OF MFW INITIATING EVENT COGNITIVE ERROR TO INITIATE BLEED AND FEED		7.000E-01 6.771E-03 6.771E-03 1.830E-02	7.00E-01 6.77E-03 6.77E-03 1.83E-02	8.40E-09
528) T1 BLTXX380 LIFTOPEN PRVXK240	GENERAL PLANT TRANSIENT CC FAILURE (NON-FREEZING) OF 3 OF 4 FIRST LEVEL SENSORS GIVEN A PRECURSOR, PORVs OR SAFETIES LIFT AND REMAIN OPEN CODE SAFETY RC-20C FAILS TO CLOSE DUE TO MECH. FAILURE	2.98E-3	3.100E+00 9.070E-06 0.1	3.10E+00 9.07E-06 1.00E-01	8.38E-09
529) T1 BLTXX380 LIFTOPEN PRVXK201	GENERAL PLANT TRANSIENT CC FAILURE (NON-FREEZING) OF 3 OF 4 FIRST LEVEL SENSORS GIVEN A PRECURSOR, PORVs OR SAFETIES LIFT AND REMAIN OPEN CODE SAFETY RC-201 FAILS TO CLOSE DUE TO MECH. FAILURE	2.98E-3	3.100E+00 9.070E-06 0.1	3.10E+00 9.07E-06 1.00E-01	8.38E-09
530) T1A EMODCS161ATWZ FQ1PKCP4	STREAM LINE BREAK UPSTREAM OF NRV (S/C #1) <module> MOV CS-16.1A FAILS TO OPEN COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.	2.98E-3	2.450E-04 2.626E-03 1.3E-2	2.45E-04 2.63E-03 1.30E-02	8.36E-09

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MODULE/EVENT NAME	DESCRIPTION	DATE	EXPOSURE	B.E. PROB.	MOD./CS. PROB.	
531) T3A RMODCS161EIOZ FQ1PKCP4	STREAM LINE BREAK UPSTREAM OF NEV (S/G #1: <module> MOV CS-16.1B FAILS TO OPEN COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.			1.450E-04 2.626E-03 1.3E-2	2.45E-04 2.63E-03 1.30E-02	8.36E-09
532) T6 AMODCCFPTTMB FQ1QXDP4	LOSS OF SERVICE WATER <module> CCF OF THE FEEDER BREAKERS TO FAST TRANSFER SD APW PUMP P4 IS O.O.S. FOR MAINT.	1.18E-2		4.440E-03 1.592E-04 1.18E-02	4.44E-03 1.59E-04 1.18E-02	8.34E-09
533) S1 NIRBLOCAL RMODR3AOVFTF WH2QXEDA	SMALL SMALL LOCA (INCLUDES RCP SEAL RUPTURE) RECOVERY ACTION: FAIL TO LOCALLY CLOSE RBCCW MOV(s) <module> 2-RB-210 OR 2-RB-8.1B FAIL TO CLOSE HEADER A OUT-OF-SERVICE FOR MAINT.			4.65E-03 .13 1.112E-02 1.24E-03	4.65E-03 1.30E-01 1.11E-02 1.24E-03	8.34E-09
534) V1A 535) S5 NAVG90AB OADCY YMODCCCRSWS	V-SHOWER: S1 & SDC DISCHARGE LINES STREAM GENERATOR TUBE RUPTURE ADV ASSOCIATED WITH FAULTED SG #1 FAILS TO CLOSE COGNITIVE ERROR TO RECOVER DC SWGR ROOM VENTILATION <module> DC SWGR ROOMS A & B COMMON CAUSE FAILURES	3.15E-3		8.320E-09 2.20E-02 1 1.0E-02 1.187E-02	3.32E-09 2.20E-02 3.15E-03 1.00E-02 1.19E-02	8.32E-09 8.23E-09
536) T1 EDQX.3U AMOD24DPTLB RMODMDADELCA RMODSDPDELD	GENERAL PLANT TRANSIENT DIESEL GENERATOR 15G-13U OUT OF SERVICE IUE TO MAINTENANCE <module> FAILURE OF BUS 24D TO FAST TRANSFER <MODULE> MD PUMP DRAIN A FAILS TO DELIVER <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS	1.06E-2		3.100E+00 1 2.019E-03 6.771E-03 1.830E-02	3.10E+00 1.06E-02 2.02E-03 6.77E-03 1.83E-02	8.22E-09
537) T2 AMODCCFLNPJKAB FQ1PKCP4 IINX00	LOSS OF MAIN FEEDWATER <module> COMMON CAUSE FAILURE OF AC POWER GIVEN AN LNP COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP. LOSS OF NORMAL POWER			7.000E-01 3.622E-03 1.3E-2 2.49E-4	7.00E-01 3.62E-03 1.30E-02 2.49E-04	8.21E-09
538) T14 RMODSGLL9AI FQ1QXCP4 RDC1 RDC2	LOSS OF DC BUS 201B <MODULE> SG LOW LEVEL AAPW LOGIC FAILS TO START MD PUMP 9A SD APW PUMP P4 IS O.O.S. FOR MAINT. FAILURE TO RECOVER DC POWER (SHORT TERM) FAILURE TO RECOVER DC POWER (35 MIN)	1.18E-2		5.340E-02 1.380E-04 1 2.16E-01 4.35E-01	5.34E-02 1.38E-04 1.18E-02 2.16E-01 4.35E-01	3.17E-09
539) T1 DCTXCCF RMODSDPDELD FP9QK09B	GENERAL PLANT TRANSIENT CCF OF BATTERY CHARGERS DC1 AND DC3 <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS APW MD PUMP 5B IS O.O.S. DUE TO MAINT.	1.56E-5	3.83E-3	3.100E+00 2.4 1.830E-02 1 5.660E-02	3.10E+00 2.74E-05 1.83E-02 1.83E-02 5.66E-02	8.13E-09
540) T13 PAVGX43B RMODHERVLAC MMPPRC1 RDC1NGT	LOSS OF DC BUS 202A APW REG. VLV. FW-43B FAILS TO OP. DUE TO MECH. FAIL. <MODULE> AO CV 12A OR REG VLV 43A FAILURE OPERATOR RECOVERY MANIPULATIVE ERROR: MPN GIVEN LOSS OF DC BUS 201 DC POWER RECOVERED (SHORT TERM)	3.15E-3		4.404E-04 0.17 0.795 4.65E-33 5.241E-02 2.49E-4	4.40E-04 1.30E-01 7.95E-01 4.65E-03 5.24E-02 2.49E-04	8.11E-09
541) S1 AMODDGBPLTKI IINX00 RMODAIRCVBG	SMALL SMALL LOCA (INCLUDES RCP SEAL RUPTURE) <module> D/G 15G-11U FAULTS LOSS OF NORMAL POWER <module> A/S CHECK VALVE TO SW-3.2B FAILS			4.65E-33 5.241E-02 2.49E-4 1.334E-01	4.65E-03 5.24E-02 2.49E-04 1.33E-01	8.10E-09
542) S. AMODDGAFLTJJI IINX00 RMODAIRCVBG	SMALL SMALL LOCA (INCLUDES RCP SEAL RUPTURE) <module> D/C 15G-12U FAULTS LOSS OF NORMAL POWER <module> A/S CHECK VALVE TO SW-3.2A FAILS			4.65E-03 5.241E-02 2.49E-4 1.334E-01	4.65E-03 5.24E-02 2.49E-04 1.33E-01	8.10E-09
543) T1 LIPTOPEN PRVBX240 RMODCCPPP8W	GENERAL PLANT TRANSIENT GIVEN A PRECURSOR, PURVs OR SAFETIES LIFT AND REMAIN OPEN CODE SAFETY RC-200 FAILS TO CLOSE DUE TO MECH. FAILURE <module> COMMON CAUSE FAILURE OF PUMPS AND CVS	2.98E-3		3.100E-00 0.1 1 8.744E-06	3.10E+00 1.00E-01 2.98E-03 8.74E-06	8.08E-09

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CUTSRT REPORT

MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	B.E. PROB.	MOD./CS. PROB.
544) T1 LIPTOPEN PRVBK201 #MODCCFPFSW	GENERAL PLANT TRANSIENT GIVEN A PRECURSOR, PORVs OR SAFETIES LIFT AND REMAIN OPEN CODE SAFETY RC-2(1 FAILS TO CLCSE DUE TO MECH. FAILURE <module>COMMON CAUSE FAILURE OF PUMPS AND CVS	2.98E-3	3.100E+00 0.1 1 8.744E-06	3.10E+00 1.00E-01 2.98E-03 8.74E-06	8.08E-09
545) T13 #MODPMPCCFCD #MODSDPDEL0 #MFPRECL EDC1WOT	LOSS OF DC BUS 2(1A) <MODULE> CCPs OF THE MD PUMP TRAIN COMPONENTS FAIL AFW <MODULE> SD PUMP FAILS TO DEL AFW TO HEADERS OPERATOR RECOVERY MANIPULATIVE ERROR: MPW GIVEN LOSS OF DC BUS 2#1 DC POWER RECOVERED (SHORT TERM)		7.510E-05 1.830E-02 0.13 0.795	7.51E-05 1.83E-02 1.30E-01 7.95E-01	8.04E-09
546) R4 #MODCS161BIOZ #MOD4LAPLSS	LARGE LOCA <module> MOV CS-16.1B FAILS TO OPEN <module> FAILURE OF P41A DUE TO PUMP, CHECK VALVES OR BREAKER		6.40E-04 2.626E-03	6.40E-04 2.63E-03	8.03E-09
547) S4 #MODCS161AINZ #MOD41CPLST	LARGE LOCA <module> MOV CS-16.1A FAILS TO OPEN <module> FAILURE OF P41C DUE TO PUMP, CHECK VALVES OR BRK		6.40E-04 2.626E-03	6.40E-04 2.63E-03	8.03E-09
548) T1 #MODCCFPHRG #AVG150A #MWSYTR1	GENERAL PLANT TRANSIENT <MODULE> CCPs OF THE COMMON INJECTION HEADER VALVES RANDOM MECHANICAL FAILURE OF ADV MS-190A NON-RECOVERABLE MPW FAILURES CAUSING LOSS OF TOTAL MPW	AFTER 3.15E-3	3.100E+00 2.995E-05 6	3.10E+00 3.00E-05 1.89E-02	8.02E-09
549) T1 #MODCCFPHRG #AVG190B #MWSYTR1	GENERAL PLANT TRANSIENT <MODULE> CCPs OF THE COMMON INJECTION HEADER VALVES RANDOM MECHANICAL FAILURE OF ADV MS-190B NON-RECOVERABLE MPW FAILURES CAUSING LOSS OF TOTAL MPW	AFTER 3.15E-3	3.100E+00 2.995E-05 6	3.10E+00 3.00E-05 1.89E-02	8.02E-09
550) T14 #MODSDPDEL0 #PSQX09A RDC1 RDC2 SQ2QX43A	LOSS OF DC BUS 201B <MODULE> SD PUMP FAILS TO DEL AFW TO HEADERS AFW MD PUMP 9A IS O.O.S. DUE TO MAINT. FAILURE TO RECOVER DC POWER (SHORT TERM) FAILURE TO RECOVER DC POWER (35 MIN) CONFINEMENT SPRAY PUMP P-43A OUT FOR MAINT.	(PROB.) 2.27E-2	5.340E-02 1.830E-02 1 2.16E-01 4.35E-01	5.34E-02 1.83E-02 1.89E-02 2.16E-01 4.35E-01	7.98E-09
551) T14 #MODMDADFLCA #F1PXCP4 #MODDAMPRAIS RDC1 RDC2	LOSS OF DC BUS 201B <MODULE> MD PUMP TRAIN A FAILS TO DELIVER COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP. <module>DAMPERS FAIL OR HPSI PUMP B CIRCUITRY FAILS (TRAIN A) FAILURE TO RECOVER DC POWER (SHORT TERM) FAILURE TO RECOVER DC POWER (35 MIN)		5.340E-02 6.771E-03 1.3E-2 1.807E-02 2.16E-01 4.35E-01	5.34E-02 6.77E-03 1.30E-02 1.81E-02 2.16E-01 4.35E-01	7.98E-09
552) T2 #BSTXV10 #MODMD3DELCE #MODSDPDEL0	LOSS OF MAIN FEEDWATER LOSS OF DC CONTROL PANEL DV10 (201A-IV) <MODULE> MD PUMP 9B FAILS TO DELIVER <MODULE> SD PUMP FAILS TO DEL AFW TO HEADERS	3.83E-6	7.000E-01 24 6.771E-03 1.830E-02	7.00E-01 9.19E-05 6.77E-03 1.83E-02	7.97E-09
553) T2 #BSTXV10 #MODMDADFLCA #MODSDPDEL0	LOSS OF MAIN FEEDWATER LOSS OF DC CONTROL PANEL DV20 (201B-IV) <MODULE> MD PUMP TRAIN A FAILS TO DELIVER <MODULE> SD PUMP FAILS TO DEL AFW TO HEADERS	3.83E-6	7.000E-01 24 6.771E-03 1.830E-02	7.00E-01 9.19E-05 6.77E-03 1.83E-02	7.97E-09
554) T10 RCPSP RECSC	LOSS OF RBCCW RCP SEAL FAILURE GIVEN A LOSS OF RCP SEAL COOLING RECOVERY OF RBCCW/SW		1.06E-4 1.50E-03 5.00E-02	1.06E-04 1.50E-03 5.00E-02	7.95E-09
555) T5 #CONDBOTR #HIBAF1 #AVG105A	MAIN FEEDLINE BREAK IN TURBINE BUILDING (UPSTREAM OF MPW AIR ASST. CONSEQUENTIAL SGTR MANIPULATIVE ERROR TO INITIATE FEED AND BLEED MPW AIR-ASST CHK. VLV. PW-5A FAILS TO CLOSE ON DEMAND.	3.15E-3	9.200E-04 0.0505 9.03E-3 6	9.20E-04 5.05E-02 9.03E-03 1.89E-02	7.93E-09

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CUTSET REPORT

MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	B.B. PROB.	MOD./CS. PROB.
556) T1 ATTRXUB5 FMODDBDELCB FQ1XP0P4	GENERAL PLANT TRANSIENT TRANSFORMER 24C1-1X FAULT (UB5) <MODULE> MD PUMP 5B FAILS TO DELIVER OF FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS.	2.88E-6	5.100E+00 24 6.771E-03	3.10E+00 6.91E-05 6.77E-03	7.88E-09
557) T2 EMODCS161BIOZ FMODCCFHDRG MFWROBRC	LOSS OF MAIN FEEDWATER <module> MOV CS-16.1B FAILS TO OPEN <MODULE> CCPs OF THE COMMON INJECTION HEADER VALVES FAILURE TO RECOVER MPW GIVEN LOSS OF MPW INITIATING EVENT		1.43E-03 7.00E-01 2.626E-03	5.43E-03 7.00E-01 2.63E-03	7.87E-09
558) T2 EMODCS161AIEZ FMODCCFHDRS MFWROBRC	LOSS OF MAIN FEEDWATER <module> MOV CS-16.1A FAILS TO OPEN <MODULE> CCPs OF THE COMMON INJECTION HEADER VALVES FAILURE TO RECOVER MPW GIVEN LOSS OF MPW INITIATING EVENT		1.43E-01 7.00E-01 2.626E-03	1.43E-01 7.00E-01 2.63E-03	7.87E-09
559) T1 IBT0XDB1 IBT2XDB1 RT	GENERAL PLANT TRANSIENT UNDETECTED DEGRADED BATTERY DB1 FRACTION OF BATTERY DB1 FAILURES THAT WILL STABILIZE CHARGER DC1 FAILURE OF REACTOR TRIP SYSTEM		3.10E+00 2.95E-4 .86	3.10E+00 2.95E-04 8.60E-01	7.86E-09
560) S5 HISGI LCVABCCA	STEAM GENERATOR TUBE RUPTURE MANIPULATIVE ERROR TO CLOSE MSIV(S) GIVEN SOTF CC FAILURE OF 2 OF 3 CHECK VALVES (2-SI-217, 27, 37 & 47)		1.00E-05 2.20E-02 6.71E-3	1.00E-05 2.20E-02 6.71E-03	7.85E-09
561) T1 ADGQX13U AMODDCAFLNI FMODSDPDBLD I1INX000	GENERAL PLANT TRANSIENT DIESEL GENERATOR 15G-13U OUT OF SERVICE DUE TO MAINTENANCE <module> D/G 15G-12U FAULTS <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS LOSS OF NORMAL POWER	8.58E-8 1.06E-2	3.10E+00 1 5.241E-02	3.10E+00 1.06E-02 5.24E-02	7.85E-09
562) T1 ADGQX12U AMODDGS3FI/FTI FMODSDPDBLE I1INX000	GENERAL PLANT TRANSIENT DIESEL GENERATOR 15G-12U OUT OF SERVICE DUE TO MAINTENANCE <module> D/G 15G-13U FAULTS <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS LOSS OF NORMAL POWER	1.06E-2	3.10E+00 1 5.241E-02	3.10E+00 1.06E-02 5.24E-02	7.85E-09
563) S2 HISWLOCAL HM0D41AFLSS RM0D5W91CFIR	SMALL LOCA (PIPE RUPTURE) RECOVERY ACTION: FAILURE TO LOCALLY OPEN SW AOV(s) <module> FAILURE OF P41A DUE TO PUMP, CHECK VALVES OR BREAKER <module> 2-SW-8.1C FAILS TO OPEN GIVEN A SIAS		2.25E-33 .13 4.779E-03	2.25E-03 1.30E-01 4.78E-03	7.79E-09
564) S2 H.RBLOCAL HM0D41CF1ST RM0DRB31AFIP	SMALL LOCA (PIPE RUPTURE) RECOVERY ACTION: FAIL TO LOCALLY CLOSE RBCCW AOV(s) <module> FAILURE OF P41C DUE TO PUMP, CHECK VALVES OR BRK <module> 2-RB-8.1A FAILS TO CLOSE		2.25E-03 .13 4.779E-03	2.25E-03 1.30E-01 4.78E-03	7.79E-09
565) S2 HISWLOCAL HM0D41CF1ST RM0D5W91AFIP	SMALL LOCA (PIPE RUPTURE) RECOVERY ACTION: FAILURE TO LOCALLY OPEN SW AOV(s) <module> FAILURE OF P41C DUE TO PUMP, CHECK VALVES OR BRK <module> 2-SW-3.1A FAILS TO OPEN GIVEN A SIAS		2.25E-03 .13 4.779E-03	2.25E-03 1.30E-01 4.78E-03	7.79E-09
566) T3A FMODSDPDBLD PEPBX40Z	STEAM LINE BREAK UPSTREAM OF NRV (S/G #1) <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS CP 5,6 FROM H31402B FAILS TO CLOSE	2.56E-7	2.450E-04 1.830E-02 18	2.45E-04 1.83E-02 1.72E-33	7.73E-09
567) T3A FMODSDPDBLD PEPBX404	STEAM LINE BREAK UPSTREAM OF NRV (S/G #1) <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS CP 5,6 FROM H31404B FAILS TO CLOSE	2.66E-7	2.450E-04 1.830E-02 18	2.45E-04 1.83E-02 1.72E-33	7.73E-09
568) T13 FMODDBDELCB FQ1XP0P4	LOSS OF DC BUS 201A <MODULE> MD PUMP 9B FAILS TO DELIVER SD APW PUMP P4 IS O.O.S. FOR MAINT.	1.18E-2	5.660E-02 6.771E-03 1	5.66E-02 6.77E-03 1.18E-02	7.68E-09

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MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	B.B. PROB.	MOD./CS. PROE.
	<module> DAMPERS FAIL OR HESI PUMP B CIRCUITRY FAILS (TRAIN B)		1.807E-02	1.81E-02	
	RDC1 FAILURE TO RECOVER DC POWER (SHORT TERM)		2.16E-01	2.16E-01	
	RDC2 FAILURE TO RECOVER DC POWER (35 MIN)		4.35E-01	4.35E-01	
569) T9	MAIN FEEDLINE BREAK IN TURBINE BUILDING (UPSTREAM OF MPW AIR ASST.		9.20E-04	9.20E-04	7.66E-09
	<module> AO CV PW-12B OR REG VLV PW-43B FAILURE		4.404E-04	4.40E-04	
	NAVGI90A RANDOM MECHANICAL FAILURE OF ADV MS-190A	3.15E-3	6	1.89E-02	
570) T9	MAIN FEEDLINE BREAK IN TURBINE BUILDING (UPSTREAM OF MPW AIR ASST.		9.200E-04	9.20E-04	7.66E-09
	<module> AO CV PW-12B OR REG VLV PW-43B FAILURE		4.404E-04	4.40E-04	
	NAVGI90B RANDOM MECHANICAL FAILURE OF ADV MS-190B	3.15E-3	6	1.89E-02	
571) T14	LOSS OF DC BUS 2C1B		5.340E-02	5.34E-02	7.66E-09
	NAVX43B APW REG. VLV. PW-43B FAILS TO OP. DUE TO MECH. FAIL.	3.15E-3	1	3.15E-03	
	<module> AO CV 12A OR REG VLV 43A FAILURE		4.404E-04	4.40E-04	
	MMFREC1 OPERATOR RECOVERY MANIPULATIVE ERROR: MPW GIVEN LOSS OF DC BUS 201		0.13	1.30E-01	
	EDCINOT DC POWER RECOVERED (SHORT TERM)		0.795	7.95E-01	
572) T11	LOSS OF VITAL AC PANELS VA10 & VA30		1.250E-02	1.25E-02	7.63E-09
	<module> FAILURE OF BUS 24C FAST TRANSFER LOGIC		2.144E-03	2.14E-03	
	MMDDGCBPLTKI <module> D/G 15G-13U FAULTS		5.241E-02	5.24E-02	
	FQ1PX0P4 OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS.		5.43E-03	5.43E-03	
573) T3A	STEAM LINE BREAK UPSTREAM OF NR7 (S/3 #1)		2.450E-04	2.45E-04	7.59E-09
	<module> MOV CS-16.1B FAILS TO OPEN		2.626E-03	2.63E-03	
	FQ1QXCP4 SD APW PUMP P4 IS O.O.S. FOR MAINT.	1.18E-2	1	1.18E-02	
574) T3A	STEAM LINE BREAK UPSTREAM OF NR7 (S/3 #1)		2.450E-04	2.45E-04	7.59E-09
	<module> MOV CS-15.1A FAILS TO OPEN		2.626E-03	2.63E-03	
	FQ1QX0P4 SD APW PUMP P4 IS O.O.S. FOR MAINT.	1.18E-2	1	1.18E-02	
575) T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	7.59E-09
	<module> D/G 15G-13U FAULTS		5.241E-02	5.24E-02	
	MMDDGCBPLTKI <module> SD PUMP FAILS TO DEL APW TO HEADERS		1.830E-02	1.83E-02	
	FP9QX09A APW MD PUMP 5A IS O.O.S. DUE TO MAINT.	3.83E-3	1	3.83E-03	
	SQ2QX43A CONFINEMENT SPRAY PUMP P-43A OUT FOR MAINT.	(PROB. 2.27E-2	1	2.27E-02	
576) T3	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	7.59E-09
	<module> D/G 15G-12U FAULTS		5.241E-02	5.24E-02	
	MMDDGCBPLTKI <module> SD PUMP FAILS TO DEL APW TO HEADERS		1.830E-02	1.83E-02	
	FP9QX09B APW MD PUMP 9B IS O.O.S. DUE TO MAINT.	3.83E-3	1	3.83E-03	
	SQ2QX43B CONFINEMENT SPRAY PUMP P-43B OUT FOR MAINT.	2.27E-2	1	2.27E-02	
577) T14	LOSS OF DC BUS 201B		5.340E-02	5.34E-02	7.58E-09
	PRODPMPCCPCD <module> CCFs OF THE MD PUMP TRAIN COMPONENTS FAIL APW		7.510E-05	7.51E-05	
	PRODSU2PBLD <module> SD PUMP FAILS TO DEL APW TO HEADERS		1.830E-02	1.83E-02	
	MMFREC1 OPERATOR RECOVERY MANIPULATIVE ERROR: MPW GIVEN LOSS OF DC BUS 201		0.13	1.30E-01	
	RDC1NOT DC POWER RECOVERED (SHORT TERM)		0.795	7.95E-01	
578) T:	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	7.56E-09
	AMODBUS24G7 <module> BUS 24G FAULTS		3.680E-05	3.68E-05	
	AMODCCPLNPKAB <module> COMMON CAUSE FAILURE OF AC POWER GIVES AN LMP		3.622E-03	3.62E-03	
	PRODSU2PBLD <module> SD PUMP FAILS TO DEL APW TO HEADERS		1.830E-02	1.83E-02	
579) T11	LOSS OF VITAL AC PANELS VA11 & VA30		1.250E-02	1.25E-02	7.50E-09
	<module> D/G 15G-13U FAULTS		5.241E-02	5.24E-02	
	MMDDGCBPLTKI <module> MD PUMP TRAIN A FAILS TO DELIVER		6.771E-03	6.77E-03	
	FP1PXC04 COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
	QAFAN OPERATOR ACTION TO RECOVER ESP ROOM VENTILATION (QA AND HI)		0.13	1.30E-01	
580) T2	LOSS OF MAIN FEEDWATER		7.000E-01	7.00E-01	7.45E-09
	AMDDCCTLHPJKAB <module> COMMON CAUSE FAILURE OF AC POWER GIVES AN LMP		3.622E-03	3.62E-03	

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MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	B.R. PROB.	MOD./CS. PROB.
	FQ1QX0P4 IIIN000	1.18E-2	1	1.18E-02	
581)	T11 AB2G0D72 FMO0NDADELCA FMO0SDPDELD		2.49E-4 1.250E-02 7.96E-4 5	2.49E-04 1.25E-02 4.78E-03 6.77E-03	7.4E-09
582)	T2 AMODCCPFTTAB AMODCCFLNPKAB FMO0SDPDELD		7.00E-01 1.592E-04 3.622E-03 1.830E-02	7.00E-01 1.59E-04 3.62E-03 1.83E-02	7.39E-09
583)	T13 FAVGG43B FMO0HHRVLG RDC1 RDC2	3.15E-3	1	3.15E-03 4.40E-04 2.16E-01 4.35E-01	7.38E-09
584)	T1 AMODCCPFTTAB AMODDGAFLVI AMODDCBPLTKI FQ1PX0P4		5.100E+00 1.592E-04 5.241E-02 5.241E-02	5.10E+00 1.59E-04 5.24E-02 5.24E-02	7.36E-09
585)	S4 VMOD42BFLST WAVGX32B	3.15E-3	1	3.15E-03 6.40E-04 3.646E-03	7.35E-09
586)	S4 VMOD42AFLSB WAVGX32A	3.15E-3	1	3.15E-03 6.40E-04 3.646E-03	7.35E-09
587)	S4 RBC32A VP1QX42A WMO0AIRCVMG	1.72E-3	1	1.72E-03 6.40E-04 5.0E-02	7.34E-09
588)	S4 RBC32B VP1QX42B WMO0AIRCVMG	1.72E-3	1	1.72E-03 6.40E-04 5.0E-02	7.34E-09
589)	T14 AMOD24CPTLB AMODDGAFLTKI FQ1PXC04 RCC1 RCC2		5.340E-02 2.144E-03 5.241E-02 1.3E-2 2.16E-01 4.35E-01	5.34E-02 2.14E-03 5.24E-02 1.30E-02 2.16E-01 4.35E-01	7.33E-09
590)	S2 EMODCS161AINZ W2QXHD0B		2.25E-03 2.626E-03 1.24E-03	2.25E-03 2.63E-03 1.24E-03	7.33E-09
591)	S2 EMODCS161BIDZ W2QXHDA		2.25E-03 2.626E-03 1.24E-03	2.25E-03 2.63E-03 1.24E-03	7.33E-09
592)	T.3 AMOD24DPTLB AMODDGSFLTKI FQ1PXC04		5.660E-02 2.019E-03 5.241E-02 1.3E-2	5.66E-02 2.02E-03 5.24E-02 1.30E-02	7.32E-09

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MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	B.R. PROB.	MOD./CS. PROB.
RDC1	FAILURE TO RECOVER DC POWER (SHORT TERM)		2.16E-01	2.16E-01	
RDC2	FAILURE TO RECOVER DC POWER (35 MIN)		4.35E-01	4.35E-01	
593) T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	7.27E-09
PMODSRVFTOV	<module> 1/2 SRVS FAIL TO OPEN UPON DEMAND		7.98E-03	7.98E-03	
RT	FAILURE OF REACTOR TRIP SYSTEM		1.00E-05	1.00E-05	
594) T1	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	7.24E-09
AMOD24CFTLB	<module> FAILURE OF BUS 24C FAST TRANSFER LOGIC		2.144E-03	2.14E-03	
AMODDGAFLTJI	<module> D/G 15G-12U FAULTS		5.241E-02	5.24E-02	
FP9QX09B	APW MD PUMP 9B IS O.O.S. DUE TO MAINT.	3.83E-3	1	3.83E-03	
FQ1PXP4	OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS.		5.43E-03	5.43E-03	
595) T14	LOSS OF DC BUS 201B		5.340E-02	5.34E-02	7.24E-09
PMODMDADELCA	<module> MD PUMP TRAIN A FAILS TO DELIVER		6.771E-03	6.77E-03	
FQ1QX1P4	SD APW PUMP P4 IS O.O.S. FOR MAINT.	1.18E-2	1	1.18E-02	
QMODDAMPRAIS	<module> DAMPERS FAIL OR HPSI PUMP B CIRCUITRY FAILS (TRAIN A)		1.807E-02	1.81E-02	
RDC1	FAILURE TO RECOVER DC POWER (SHORT TERM)		2.16E-01	2.16E-01	
RDC2	FAILURE TO RECOVER DC POWER (35 MIN)		4.35E-01	4.35E-01	
596) T11	LOSS OF VITAL AC PANELS VA10 & VA30		1.250E-02	1.25E-02	7.18E-09
AMOD24DLNP3KI	<module> FAILURE OF BUS 24C LNP LOGIC		4.638E-03	4.64E-03	
PMODMDADELCA	<module> MD PUMP TRAIN A FAILS TO DELIVER		6.771E-03	6.77E-03	
PMODSDPDELJ	<module> SD PUMP FAILS TO DEL APW TO HEADERS		1.830E-02	1.83E-02	
597) T5B	LOSS OF BOTH DC BUSES (BUS 201B FIRST?)		1.310E-06	1.31E-06	7.11E-09
FQ1PXP4	OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS.		5.43E-03	5.43E-03	
598) S2	SMALL LOCA (PIPE RUPTURE)		2.25E-03	2.25E-03	7.09E-09
CADCV	COGNITIVE ERROR TO RECOVER DC SWGR ROOM VENTILATION		1.0E-02	1.00E-02	
CAESASREC	OP. REC., MANUAL INIT. OF ESAS EQIP. FOLLOWING LOSS OF SWGR RM. VR		5.00E-02	5.00E-02	
YMODRANDMAGPI	<module> DC SWGR A CHK, SW OR FAN RANDOM FAILURES		7.948E-02	7.95E-02	
YMODRANDMBGPI	<module> DC SWGR B CHK, SW OR FAN RANDOM FAILURES		7.929E-02	7.93E-02	
599) T13	LOSS OF DC BUS 201A		5.660E-02	5.66E-02	7.08E-09
FP9QX09B	APW MD PUMP 9B IS O.O.S. DUE TO MAINT.	3.83E-3	1	3.83E-03	
FQ1PXP4	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
QMODFAN15BIT	<module> ESPRS FAN, AOV 2RB-68.1B OR CIRCUITRY FAILS		2.670E-02	2.67E-02	
RDC1	FAILURE TO RECOVER DC POWER (SHORT TERM)		2.16E-01	2.16E-01	
RDC2	FAILURE TO RECOVER DC POWER (35 MIN)		4.35E-01	4.35E-01	
600) S1	SMALL SMALL LOCA (INCLUDES RCP SEAL RUPTURE)		4.65E-03	4.65E-03	7.07E-09
OAFAN	OPERATOR ACTION TO RECOVER ESP ROOM VENTILATION (OA AND NI)		0.13	1.30E-01	
QFNPA2BR	CCP OF 2/2 ESPRS FANS FAILURE TO RUN GIVES START		1.17E-5	1.17E-05	
601) S3	MEDIUM LOCA		7.10E-04	7.10E-04	7.04E-09
WAVGX32A	AOV 2-SW-3.2A FAILS TO OPERATE- PTC, MECH. FAIL.	3.15E-3	1	3.15E-03	
WAVGX32B	AOV 2-SW-3.2B FAILS TO OPERATE- PTC, MECH. FAIL.	3.15E-3	1	3.15E-03	
602) T14	LOSS OF DC BUS 201B		5.340E-02	5.34E-02	5.96E-09
PAVGX43B	APW REC. VLV. FN-43B FAILS TO OP. DUE TO MECH. FAIL.	3.15E-3	1	3.15E-03	
PMODHDRV1AG	<module> AO CV 12A OR REG VLV 43A FAILURE		4.404E-04	4.40E-04	
RDC1	FAILURE TO RECOVER DC POWER (SHORT TERM)		2.16E-01	2.16E-01	
RDC2	FAILURE TO RECOVER DC POWER (35 MIN)		4.35E-01	4.35E-01	
603) T1	LOSS OF MAIN FEEDWATER		7.000E-01	7.00E-01	6.92E-09
AMOD24CFTLB	<module> FAILURE OF BUS 24C FAST TRANSFER LOGIC		2.144E-03	2.14E-03	
AMODDGAFLTJI	<module> D/G 15G-12U FAULTS		5.241E-02	5.24E-02	
PMODMDDELCB	<module> MD PUMP 9B FAILS TO DELIVER		6.771E-03	6.77E-03	
FQ1PXP4	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
604) T14	LOSS OF DC BUS 201B		5.340E-02	5.34E-02	6.91E-09

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MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	B.E. PROB.	MOD./CB. PROB.
	DHT0XB1 UNDETECTED DEGRADED BATTERY DB1 (PROB)		2.95E-4	2.95E-04	
	DHT2XB1 FRACTION OF BATTERY DB1 FAILURES THAT WILL STABILIZE CHARGER DC1		.06	5.60E-01	
	PQ1PK0P4 OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS.		5.43E-03	5.43E-03	
	RDC1 FAILURE TO RECOVER DC POWER (SHORT TERM)		2.16E-01	2.16E-01	
	RDC2 FAILURE TO RECOVER DC POWER (35 MIN)		4.35E-01	4.35E-01	
605)	T10 LOSS OF RBCCW		1.06E-4	1.06E-04	6.89E-09
	OATRC OPERATOR ACTION TO TRIP THE RCPs		1.3E-03	1.30E-03	
	RECSC RECOVERY OF RBCCW/SW		5.00E-02	5.00E-02	
606)	T1 GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	6.89E-09
	RMOD402AIFTI <module> RC-402 AUTO OPEN LOGIC FAILS		3.170E-03	3.18E-03	
	FTRQX00B TRAIN B IS O.O.S., RC-405 IS CLOSED AND POWER REMOVED		6.99E-02	6.99E-02	
	RT FAILURE OF REACTOR TRIP SYSTEM		1.00E-05	1.00E-05	
607)	T1 GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	6.89E-09
	RMOD404AUP: <module> RC-404 AUTO OPEN LOGIC FAILS		3.170E-03	3.18E-03	
	FTRQX00A TRAIN A IS O.O.S., RC-403 IS CLOSED AND POWER REMOVED		6.99E-02	6.99E-02	
	RT FAILURE OF REACTOR TRIP SYSTEM		1.00E-05	1.00E-05	
638)	S3 MEDIUM LOCA		7.10E-04	7.10E-04	5.85E-09
	HRRLOCAL RECOVERY ACTION: FAIL TO LOCALLY CLOSE RBCCW MOV(s)		.13	1.30E-01	
	REC32E OPERATOR RECOVERY OF CLOSING 2-SW-3.2B AFTER IT HAS FAILED TO CLO		5.0E-02	5.00E-02	
	RMODR00VPIP <module> 2-RB-210 OR 2-RB-8.1B FAIL TO CLOSE		1.112E-02	1.11E-02	
	RMODAIRCVBC <module> A/S CHECK VALVE TO SW-3.2B FAILS		1.334E-01	1.33E-01	
609)	T11 LOSS OF VITAL AC PANELS VA10 & VA30		1.250E-02	1.25E-02	6.83E-09
	RMODCCFVLRCD <MODULE> CCF OF 2/2 DISCH. CVR TO OPEN ON SD AND REMAINING NO APW		4.201E-06	4.20E-06	
	OAMPWREC COGNITIVE ERROR TO RECOVER MAIN FEEDWATER GIVEN LOSS OF VA10 & 20		0.13	1.30E-01	
610)	T1 GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	6.82E-09
	RMOD24DFTLE <module> FAILURE OF BUS 24D TO FAST TRANSFER		2.019E-03	2.02E-03	
	RMODXGBFLTRI <module> D/G 15G-13U FAULTS		5.241E-02	5.24E-02	
	P29QX09A APW MD PUMP 9A IS O.O.S. DUE TO MAINT.	3.83E-3	1	3.83E-03	
	PQ1PK0P4 OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS.		5.43E-03	5.43E-03	
611)	T13 LOSS OF DC BUS 201A		5.660E-02	5.66E-02	6.81E-09
	RMODR00BRLCB <MODULE> MD PUMP 9B FAILS TO DELIVER		6.771E-03	6.77E-03	
	RMODSDR0HLB <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		1.830E-02	1.83E-02	
	RDC1 FAILURE TO RECOVER DC POWER (SHORT TERM)		2.16E-01	2.16E-01	
	RDC2 FAILURE TO RECOVER DC POWER (35 MIN)		4.35E-01	4.35E-01	
	RMOD433PTOT <module> CB PUMP P43B FAILS TO START OR RUN DUE TO MCH OR BREAKER		1.033E-02	1.03E-02	
612)	T11 LOSS OF VITAL AC PANELS VA10 & VA30		1.250E-02	1.25E-02	6.80E-09
	RMODDG3FLTKI <module> D/G 15G-13U FAULTS		5.241E-02	5.24E-02	
	RMODMDADELCA <MODULE> MD PUMP TRAIN A FAILS TO DELIVER		6.771E-03	6.77E-03	
	PO10X074 SD APW PUMP P4 IS O.O.S. FOR MAINT.	1.18E-2	1	1.18E-02	
	O&PAN OPERATOR ACTION TO RECOVER ESP ROOM VENTILATION (OA AND HI)		0.13	1.30E-01	
613)	T11 LOSS OF VITAL AC PANELS VA10 & VA30		1.250E-02	1.25E-02	6.78E-09
	AB2GXCC2 TIE BREAKER 22S3-24C-2 FAILS TO CLOSE	7.96E-4	1	7.96E-04	
	RMODDCBFLTRI <module> D/G 15G-13U FAULTS		5.241E-02	5.24E-02	
	PQ1PKCP4 COGNITIVE ERROR FOR OPE. FAILING TO INIT. SD PUMP		1.3E-2	1.30E-02	
614)	T11 LOSS OF VITAL AC PANELS VA10 & VA30		1.250E-02	1.25E-02	6.78E-09
	AE2GX4A2 4.16KV CIRCUIT BREAKER 2S3-24A-2 FAILS TO OPEN	7.96E-4	1	7.96E-04	
	RMODDG3FLTKI <module> D/G 15G-13U FAULTS		5.241E-02	5.24E-02	
	PQ1PKCP4 COGNITIVE ERROR FOR OPE. FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
615)	T13 LOSS OF DC BUS 201A		5.660E-02	5.66E-02	6.74E-09
	RMODSDR0DELJ <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		1.830E-02	1.83E-02	

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MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	B.E. PROB.	MOD./CS. PROB.
	FP9QX9B	3.83E-3	1	3.83E-03	
	<module>DAMPERS FAIL OR HPSI PUMP B CIRCUITRY FAILS (TRAIN B)		1.807E-02	1.81E-02	
	RDC1		2.16E-01	2.16E-01	
	RDC2		4.35E-01	4.35E-01	
616)	T3A		2.450E-04	2.45E-04	6.723-09
	CONDSGTR		0.0505	5.05E-02	
	FQ1PX0P4		5.43E-03	5.43E-03	
	OANAP1		0.1	1.00E-01	
617)	T14		5.340E-02	5.34E-02	6.68E-09
	FP9QX09A	3.83E-3	1	3.83E-03	
	FP9QX09A		1.3E-2	1.30E-02	
	FQ1PXCP4		2.674E-02	2.67E-02	
	<module>ESFRS PAN, AOV 2RB-68.1A OR CIRCUITRY FAILS		2.16E-01	2.16E-01	
	RDC1		4.35E-01	4.35E-01	
	RDC2		5.340E-02	5.34E-02	6.65E-09
618)	T14		2.144E-03	2.14E-03	
	AMOD24CPTLB		5.241E-02	5.24E-02	
	<module> FAILURE OF BUS 24C FAST TRANSFER LOGIC		1	1.18E-02	
	AMODDGAFLTFI		2.16E-01	2.16E-01	
	FQ1QXCP4	1.18E-2	4.35E-01	4.35E-01	
	RDC1		5.660E-02	5.66E-02	6.64E-09
	RDC2		2.019E-03	2.02E-03	
619)	T13		5.241E-02	5.24E-02	
	AMOD24DPTLB		1	1.18E-02	
	<module> FAILURE OF BUS 24D TO FAST TRANSFER		2.16E-01	2.16E-01	
	AMODDGBPLTKI		4.35E-01	4.35E-01	
	FQ1QXCP4	1.18E-2	2.200E-03	2.20E-03	6.59E-09
	RDC1		2.995E-05	3.00E-05	
	RDC2		0.99941	9.99E-01	
620)	T1		0.1	1.00E-01	
	PHODCCPHDRG		2.25E-03	2.25E-03	6.57E-09
	M3		2.25E-03	2.25E-03	
	QABAF1		2.626E-03	2.63E-03	
621)	S2	8.58E-8	2.25E-03	2.25E-03	6.57E-09
	ECVAX15A		2.626E-03	2.63E-03	
	<module> MOV CS-16.1B FAILS TO OPEN		2.25E-03	2.25E-03	6.57E-09
622)	S2	8.58E-8	2.626E-03	2.63E-03	
	ECVAX15B		2.626E-03	2.63E-03	
	<module> MOV CF-16.1A FAILS TO OPEN		7.000E-01	7.00E-01	6.53E-09
623)	T2		2.95E-4	2.95E-04	
	DBTOXD01		.66	8.60E-01	
	DBT2XD01		6.771E-03	6.77E-03	
	FRACDNDDBRLC3		5.43E-03	5.43E-03	
	FQ1PX0P4		7.000E-01	7.00E-01	6.52E-09
624)	T2		7.000E-01	7.00E-01	
	AMOD24DPTLB		2.019E-03	2.02E-03	
	<module> FAILURE OF BUS 24D TO FAST TRANSFER		5.241E-02	5.24E-02	
	AMODDGBPLTKI		6.771E-03	6.77E-03	
	FRACDNDDBRLCA		1.3E-2	1.30E-02	
	FQ1PXCP4		4.65E-03	4.65E-03	6.51E-09
625)	S1		0.13	1.30E-01	
	OAFAN		3.15E-3	3.15E-03	
	RAVQX6EA		3.42E-3	3.42E-03	
	RAVQX6FB		1	1	

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MODULE/EVENT NAME	DESCRIPTION	EATR	EXPOSURE	B.E. PROB.	MOD./CR. PROB.
626) S1	SMALL SMALL LOCA (INCLUDES RCP SEAL RUPTURE)		4.65E-03	4.65E-03	6.51E-09
OAFAN	OPERATOR ACTION TO RECOVER ESP ROOM VENTILATION (CA AND HI)		0.13	1.30E-01	
3AVGX68B	RBCW/RSFRS MOV 2RB-63.1B FAILS TO OPERATE	3.25E-3		3.15E-03	
3AVGX68A	RBCW/RSFRS MOV 2RB-68.1A JOS FOR MAINT.	3.42E-3		3.42E-03	
627) S1	SMALL SMALL LOCA (INCLUDES RCP SEAL RUPTURE)		4.65E-03	4.65E-03	6.45E-09
PAVX43B	APW RBG. VLV. PW-43A FAILS TO OP. DUE TO MECH. FAIL.	3.15E-3		3.15E-03	
FMODHDRVLAG	<MODULE> AO CV 11A OR RBG VLV 43A FAILURE		4.404E-04	4.40E-04	
628) S3	MEDIUM LOCA		7.10E-04	7.10E-04	6.44E-09
ELTRX3NO	CC FAILURE (NON-FREEZING) OF 3 OF 4 RWST LEVEL SENSORS		5.070E-06	9.07E-06	
629) T1	GENERAL PLANT TRANSIENT		5.100E+00	3.10E+00	6.44E-09
AB2GXCC2	TIE BREAKER 22S3-24C-2 FAILS TO CLOSE	7.96E-4	1	7.96E-04	
AMODDGAFLRUI	<module> D/G 15G-12U FAULTS		5.241E-02	5.24E-02	
FP9QX09B	APW MD PUMP 9B IS O.O.S. DUE TO MAINT.	3.83E-3	1	3.83E-03	
FQ1PXC4	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP		1.3E-2	1.30E-02	
630) T1	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	6.44E-09
AB2GXCD2	TIE BREAKER 22S3-24D-2 FAILS TO CLOSE	7.96E-4	1	7.96E-04	
AMODDGBFLTKI	<module> D/G 15G-13U FAULTS		5.241E-02	5.24E-02	
FP9QX09A	APW MD PUMP 9A IS O.O.S. DUE TO MAINT.	3.83E-3	1	3.83E-03	
FQ1PXC4	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
631) T1	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	6.44E-09
AB2GX4B2	4.16KV CIRCUIT BREAKER 2S3-24B-2 FAILS TO OPEN	7.96E-4	1	7.96E-04	
AMODDGBFLTKI	<module> D/G 15G-13U FAULTS		5.241E-02	5.24E-02	
FP9QX09A	APW MD PUMP 9A IS O.O.S. DUE TO MAINT.	3.83E-3	1	3.83E-03	
FQ1PXC4	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
632) T1	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	6.44E-09
AB2GX4A2	4.16KV CIRCUIT BREAKER 2S3-24A-2 FAILS TO OPEN	7.96E-4	1	7.96E-04	
AMODDGAFLRUI	<module> D/G 15G-12U FAULTS		5.241E-02	5.24E-02	
FP9QX09B	APW MD PUMP 9B IS O.O.S. DUE TO MAINT.	3.83E-3	1	3.83E-03	
FQ1PXC4	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
633) T14	LOSS OF DC BUS 201B		5.340E-02	5.34E-02	5.42E-09
FMODMADRLCA	<MODULE> MD PUMP TRAIN A FAILS TO DELIVER		6.771E-03	6.77E-03	
FMODSEPDHLD	<MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		1.830E-02	1.83E-02	
RDC1	FAILURE TO RECOVER DC POWER (SHORT TERM)		2.16E-01	2.16E-01	
RDC2	FAILURE TO RECOVER DC POWER (35 MIN)		4.35E-01	4.35E-01	
SMOD43AFTOE	<module> CS PUMP P43A FAILS TO START OR RUN DUE TO MECH OR BREAKER		1.033E-02	1.03E-02	
634) T1	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	6.42E-09
ATRTXUB5	TRANSFORMER 24C1-X FAULT (UB5)	2.88E-6	24	6.91E-05	
FMODCCPHDRG	<MODULE> CCPs OF THE COMMON INJECTION HEADER VALVES		2.995E-05	3.00E-05	
635) T1	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	6.42E-09
ATRTXUB6	TRANSFORMER 24D7-X FAULT (UB6)	2.88E-6	24	6.91E-05	
FMODCCPHDRG	<MODULE> CCPs OF THE COMMON INJECTION HEADER VALVES		2.995E-05	3.00E-05	
636) S1	SMALL SMALL LOCA (INCLUDES RCP SEAL RUPTURE)		4.65E-03	4.65E-03	6.39E-09
FMODPMPCCPCD	<MODULE> CCPs OF THE MD PUMP TRAIN COMPONENTS FAIL APW		7.510E-05	7.51E-05	
FMODSDPELD	<MODULE> SD PUMP FAILS TO DEL APW TO HEADERS		1.830E-02	1.83E-02	
627) T2	LOSS OF MAIN FEEDWATER		7.000E-01	7.00E-01	6.39E-09
FMOD404PTOIV	<module> RC-404 FAILS TO OPEN		1.306E-02	1.31E-02	
FRQX00A	TRAIN A IS O.O.S., RC-403 IS CLOSED AND POWER REMOVED		6.99E-02	6.99E-02	
RT	FAILURE OF REACTOR TRIP SYSTEM		1.00E-05	1.00E-05	
638) T2	LOSS OF MAIN FEEDWATER		7.000E-01	7.00E-01	6.39E-09
FMOD402PTOIV	<module> RC-402 FAILS TO OPEN		1.306E-02	1.31E-02	

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MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	B.E. PROB.	MOD./CS. PROE.
	TRAIN B IS O.O.S., RC-405 IS CLOSED AND POWER REMOVED		6.99E-02	6.99E-02	
	FAILURE OF REACTOR TRIP SYSTEM		1.00E-05	1.00E-05	
639) T1	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	6.38E-09
	RECOVERY ACTION: FAIL TO LOCALLY CLOSE RBCCW AOV(s)		.13	1.30E-01	
	<module> FAILURE OF P41A D/E TC PUMP, CHECK VALVES OR BREAKER		4.779E-03	4.78E-03	
	GIVEN A PRECURSOR, PORVs OR SAFETIES LIFT AND REMAIN OPEN		8.1	1.00E-01	
	CODE SAFETY RC-201 FAILS TO CLOSE DUE TO MECH. FAILURE	2.98E-3	1	2.98E-03	
	<module> 2-RB-210 OR 2-RB-8.1B FAIL TO CLOSE		1.112E-02	1.11E-02	
640) T1	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	6.38E-09
	RECOVERY ACTION: FAIL TO LOCALLY CLOSE RBCCW AOV(s)		.13	1.30E-01	
	<module> FAILURE OF P41A D/E TC PUMP, CHECK VALVES OR BREAKER		4.779E-03	4.78E-03	
	GIVEN A PRECURSOR, PORVs OR SAFETIES LIFT AND REMAIN OPEN		8.1	1.00E-01	
	CODE SAFETY RC-200 FAILS TO CLOSE DUE TO MECH. FAILURE	2.98E-3	1	2.98E-03	
	<module> 2-RB-210 OR 2-RB-8.1B FAIL TO CLOSE		1.112E-02	1.11E-02	
641) T1	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	6.37E-09
	<module> MOV CS-16.1A FAILS TO OPEN		2.626E-03	2.63E-03	
	<module> MOV CS-16.1B FAILS TO OPEN		2.626E-03	2.63E-03	
	GIVEN A PRECURSOR, PORVs OR SAFETIES LIFT AND REMAIN OPEN		0.1	1.00E-01	
	CODE SAFETY RC-201 FAILS TO CLOSE DUE TO MECH. FAILURE	2.98E-3	1	2.98E-03	
642) T1	GENERAL PLANT TRANSIENT		3.100E+00	3.10E+00	6.37E-09
	<module> MOV CS-16.1A FAILS TO OPEN		2.626E-03	2.63E-03	
	<module> MOV CS-16.1B FAILS TO OPEN		2.626E-03	2.63E-03	
	GIVEN A PRECURSOR, PORVs OR SAFETIES LIFT AND REMAIN OPEN		0.1	1.00E-01	
	CODE SAFETY RC-200 FAILS TO CLOSE DUE TO MECH. FAILURE	2.98E-3	1	2.98E-03	
643) T3A	STEAM LINE BREAK UPSTREAM OF HRV (S/G #1)		2.450E-04	2.45E-04	5.36E-09
	OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS.		5.43E-03	5.43E-03	
	<module> FAILURE OF P41A DUE TO PUMP, CHECK VALVES OR BREAKER		4.779E-03	4.78E-03	
644) T3A	STEAM LINE BREAK UPSTREAM OF HRV (S/G #1)		2.450E-04	2.45E-04	5.36E-09
	OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS.		5.43E-03	5.43E-03	
	<module> FAILURE OF P41C DUE TO PUMP, CHECK VALVES OR BER		4.779E-03	4.78E-03	
645) T13	LOSS OF DC BUS 201A		5.660E-02	5.66E-02	6.35E-09
	LOSS OF DC CONTROL PANEL DV20 (201B-1V)	3.83E-6	24	9.19E-05	
	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
	FAILURE TO RECOVER DC POWER (SHORT TERM)		2.16E-01	2.16E-01	
	FAILURE TO RECOVER DC POWER (35 MIN)		4.35E-01	4.35E-01	
646) T14	LOSS OF DC BUS 201B		5.340E-02	5.34E-02	6.35E-09
	<MODULE> SD PUMP FAILS TO DEL APN TO HEADERS		1.830E-02	1.83E-02	
	APN MD PUMP 9A IS O.O.S. DUE TO MAIN.	3.83E-3	1	3.83E-03	
	<module> DAMPERS FAIL OR HPSI PUMP B CIRCUITRY FAILS (TRAIN A)		1.807E-02	1.81E-02	
	FAILURE TO RECOVER DC POWER (SHORT TERM)		2.16E-01	2.16E-01	
	FAILURE TO RECOVER DC POWER (35 MIN)		4.35E-01	4.35E-01	
647) S4	LARGE LOCA		6.40E-04	6.40E-04	6.35E-09
	AOV 2-SW-3.2A FAILS TO OPERATE- FTC, MECH. FAIL.	3.15E-3	1	3.15E-03	
	AOV 2-SW-3.2B FAILS TO OPERATE- FTC, MECH. FAIL.	3.15E-3	1	3.15E-03	
648) T14	LOSS OF DC BUS 201B		5.340E-02	5.34E-02	6.35E-09
	TRANSFORMER 24C1-1X FAULT (JB5)	2.48E-6	24	6.91E-05	
	<MODULE> SD PUMP FAILS TO DEL APN TO HEADERS		1.830E-02	1.83E-02	
	FAILURE TO RECOVER DC POWER (SHORT TERM)		2.16E-01	2.16E-01	
	FAILURE TO RECOVER DC POWER (35 MIN)		4.35E-01	4.35E-01	
649) S:	MEDIUM LOCA		7.10E-04	7.10E-04	6.31E-09

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CUTSET REPORT

MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	B.B. PROB.	MOD./CS. PROB.
650) HCVAECCC T2 AMOD24CPTLB AMODDGAP17JI PMODMDRDELCEB PQ1QX0P4	CC FAILURE OF 2 OF 3 CHECK VALVES (2-SI 706A, 06B, 06C & 06D) LOSS OF MAIN FEEDWATER <module> FAILURE OF BUS 24C FAST TRANSFER LOGIC <module> D/G 15G-12U FAULTS <MODULE> MD PUMP 9B FAILS TO DELIVER SD APW PUMP P4 IS O.O.S. FOR MAINT.	8.58E-8	2.07E+02	8.88E-06	6.28E-09
651) S2 RP3FARRP	SMALL LOCA (PIPE RUPTURE) COMMON CAUSE FAILURE OF 2/2 RBCCW PUMPS TO RUN	1.18E-2	1.18E-02	2.25E-03	6.28E-09
652) T2 AMODD3AF17JI AMODD3BFLTKI PQ1PXC04 TINXJ00	LOSS OF MAIN FEEDWATER <module> D/G 15G-12U FAULTS <module> D/G 15G-13U FAULTS COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP. LOSS OF NORMAL POWER	2.98E-6	1.9E-2	7.00E-01	6.223-09
653) S3 WMODCCFPPSW	MEDIUM LOCA <module> COMMON CAUSE FAILURE OF PUMPS AND CVS			7.10E-04	6.21E-09
654) T1 ADGX12U AMOD24CPTLB PMODMDRDELCEB PQ1PXC04	GENERAL PLANT TRANSIENT DIESEL GENERATOR 15G-12U OUT OF SERVICE DUE TO MAINTENANCE <module> FAILURE OF BUS 24C FAST TRANSFER LOGIC <MODULE> MD PUMP 9B FAILS TO DELIVER COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.	1.06E-2	1	3.10E+00	6.20E-09
655) T3A FMODSDPDEL0 FMOD483PTOIV PTRQX00A	STEAM LINE BREAK UPSTREAM OF NRV (S/G #1) <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS <module> RC-403 FAILS TO OPEN TRAIN A IS O.O.S., RC-403 IS CLOSED AND POWER REMOVED			2.45E-04	6.19E-09
656) T3A FMODSDPDEL0 FMOD483PTOIV PTRQX00B	STEAM LINE BREAK UPSTREAM OF NRV (S/G #1) <MODULE> SD PUMP FAILS TO DEL APW TO HEADERS <module> RC-405 FAILS TO OPEN TRAIN E IS O.O.S., RC-405 IS CLOSED AND POWER REMOVED			2.45E-04	6.19E-09
657) S4 HIRB1CAL REC32E FMODREAOVFP FMODAIRCVBG	LARGE LOCA RECOVERY ACTION: FAIL TO LOCALLY CLOSE RBCCW MOV(m) OPERATOR RECOVERY OF CLOSING 2-RW-3.2B AFTER IT HAS FAILED TO CLO <module> 2-RB-210 OR 2-RB-0.1B FAIL TO CLOSE <module> A/S CHECK VALVS TO SW-3.2B FAILS			6.40E-04	5.17E-09
658) T3 PMODRDBDELCEB RT	LOSS OF NORMAL POWER INITIATING EVENT <MODULE> MD PUMP 9B FAILS TO DELIVER FAILURE OF REACTOR TRIP SYSTEM			9.10E-02	6.16E-09
659) T8 FMODMDADELCA RT	LOSS OF NORMAL POWER INITIATING EVENT <MODULE> MD PUMP TRAIN A FAILS TO DELIVER FAILURE OF REACTOR TRIP SYSTEM			9.10E-02	6.16E-09
660) T6 PAVGR43B FMODHRVLAG	LOSS OF SERVICE WATER APW REG. VLV. PW-43B FAILS TO OP. DUE TO MECH. FAIL. <MODULE> AO CV 12A OR REG VLV 43A FAILURE	3.15E-3	1	4.44E-03	6.16E-09
661) T-1 AR2GXCC2 AMODDG3FLTKI PQ1QX0P4	LOSS OF VITAL AC PANELS VAI0 & VA30 TRIP BREAKER 22S3-24C-2 FAILS TO CLOSE <module> D/G 15G-13U FAULTS SD APW PUMP P4 IS O.O.S. FOR MAINT.	7.36E-4	1	1.25E-02	6.15E-09
662) T11 AR2GX4A2 AMODDGBFLTKI PQ1QX0P4	LOSS OF VITAL AC PANELS VAI0 & VA30 4.16KV CIRCUIT BREAKER 2S3-24A-2 FAILS TO OPEN <module> D/G 15G-13U FAULTS SD APW PUMP P4 IS O.O.S. FOR MAINT.	1.18E-2	1	7.96E-04	6.15E-09
		7.96E-4	1	5.24E-02	
		1.18E-2	1	1.18E-02	

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CUTSET REPORT

MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	B.E. PROB.	MOD./CS. PROB.
653) T5A	LOSS OF BOTH DC BUSES (BUS 201A FIRST?)		1.130E-06	1.13E-06	5.14E-09
FQ1PXP4	OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS.		5.43E-03	5.43E-03	
654) T8	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	5.10E-09
AMODDGAFLTVI	<module> D/G 15G-12U FAULTS		5.241E-02	5.24E-02	
FMODMDEDLCLB	<MODULE> MD PUMP 9B FAILS TO DELIVER		6.771E-03	6.77E-03	
FMODEPDELD	<MODULE> SD PUMP FAILS TO DEL AFW TO HEADERS		1.830E-02	1.83E-02	
SMOD43BPT07	<module> CS PUMP P43B FAILS TO START OR RUN DUE TO MECH OR BREAKER		1.033E-02	1.03E-02	
665) T9	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	6.10E-09
AMODDGBFLTFI	<module> D/G 15G-13U FAULTS		5.241E-02	5.24E-02	
FMODMADHLCA	<MODULE> MD PUMP TRAIN A FAILS TO DELIVER		6.771E-03	6.77E-03	
FMODSDPDRLC	<MODULE> SD PUMP FAILS TO DEL AFW TO HEADERS		1.830E-02	1.83E-02	
SMOD43APTOE	<module> CS PUMP P43A FAILS TO START OR RUN DUE TO MECH OR BREAKER		1.033E-02	1.03E-02	
666) T5	LOSS OF SERVICE WATER		4.440E-03	4.44E-03	6.10E-09
FMODEMPCPCPD	<MODULE> CCFs OF THE MD PUMP TRAIN COMPONENTS FAIL AFW		7.510E-05	7.51E-05	
FMODSDPELD	<MODULE> SD PUMP FAILS TO DEL AFW TO HEADERS		1.830E-02	1.83E-02	
667) S5	STEAM GENERATOR TUBE RUPTURE		2.20E-02	2.20E-02	6.08E-09
HISGI	MANIPULATIVE ERROR TO CLOSE MSIV(S) GIVEN SGTR		6.71E-3	6.71E-03	
OADCV	COGNITIVE ERROR TO RECOVER DC SWGR ROOM VENTILATION		1.0E-02	1.00E-02	
YMODMAINTBG	<module> CHILLED WATER OR SW COMPONENTS (TRAIN B) C.O.S. FOR MAINT		5.186E-02	5.19E-02	
YMODRANDMAGPI	<module> DC SWGR A CHW, SW OR FAN RANDOM FAILURES		7.948E-02	7.95E-02	
668) S5	STEAM GENERATOR TUBE RUPTURE		2.20E-02	2.20E-02	6.07E-09
HISGI	MANIPULATIVE ERROR TO CLOSE MSIV(S) GIVEN SGTR		6.71E-3	6.71E-03	
OADCV	COGNITIVE ERROR TO RECOVER DC SWGR ROOM VENTILATION		1.0E-02	1.00E-02	
YMODMAINTAG	<module> CHILLED WATER OR SW COMPONENTS (TRAIN A) O.O.S. FOR MAINT		5.186E-02	5.19E-02	
YMODRANDMBCPI	<module> DC SWGR B CHW, SW OR FAN RANDOM FAILURES		7.929E-02	7.93E-02	
669) S4	LARGE LOCA		6.40E-04	6.40E-04	6.05E-09
VHVACMOV	COMMON CAUSE FAILURE OF 3/3 MOVs TO OPEN	2.10E-3	4.500E-03	9.45E-06	
670) S5	STEAM GENERATOR TUBE RUPTURE		2.20E-02	2.20E-02	6.05E-09
HISGI	MANIPULATIVE ERROR TO CLOSE MSIV(S) GIVEN SGTR		6.71E-3	6.71E-03	
OAFAN	OPERATOR ACTION TO RECOVER RSP ROOM VENTILATION (OA AND HI)		0.13	1.30E-01	
QINEA2RS	CCF OF 2/2 ESPRS FANS TO START		3.15E-4	3.15E-04	
671) T13	LOSS OF DC BUS 201A		5.660E-02	5.66E-02	6.01E-09
FP9QX09B	AFW MD PUMP 9B IS O.O.S. DUE TO MAINT.	3.83E-3	1	3.83E-03	
FQ1PXP4	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
RDC1	FAILURE TO RECOVER DC POWER (SHORT TERM)		2.16E-01	2.16E-01	
RDC2	FAILURE TO RECOVER DC POWER (35 MIN)		4.35E-01	4.35E-01	
SQ2QX41B	CONTAINMENT SPRAY PUMP P-43B OUT FOR MAINT.	2.27E-2	1	2.27E-02	
672) T6	LOSS OF SERVICE WATER		4.440E-03	4.44E-03	6.00E-09
FQ1PXOP4	OP FAILS TO PLACE THE SD PUMP TRAIN IN SERVICE-PROC. ERRORS.		5.43E-03	5.43E-03	
IILNK080	LOSS OF NORMAL POWER		2.49E-4	2.49E-04	
673) S1	SMALL SMALL LOCA (INCLUDES RCP SEAL RUPTURE)		4.65E-03	4.65E-03	6.00E-09
OPFAN	OPERATOR ACTION TO RECOVER ESP ROOM VENTILATION (OA AND HI)		0.13	1.30E-01	
RAVGR68A	RBCCW/ESPRS ADV 2NB-68.1A FAILS TO OPERATE	3.15E-3	1	3.15E-03	
RAVGR68B	RBCCW/ESPRS ADV 2NB-68.1B FAILS TO OPERATE	3.15E-3	1	3.15E-03	
674) T14	LOSS OF DC BUS 201B		5.340E-02	5.34E-02	6.00E-09
DESTXV10	LOSS OF DC CONTROL PANEL DV-0 (201A-1V)	3.83E-6	24	9.19E-05	
FQ1PXP4	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	
RDC1	FAILURE TO RECOVER DC POWER (SHORT TERM)		2.16E-01	2.16E-01	
RDC2	FAILURE TO RECOVER DC POWER (35 MIN)		4.35E-01	4.35E-01	
675) T2	LOSS OF MAIN FEEDWATER		7.000E-01	7.00E-01	6.00E-09

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CUTSET REPORT

MODULE/EVENT NAME	DESCRIPTION	RATE	EXPOSURE	S.E. PROB.	MOD./CS. PROB.
7TRTXUB5	TRANSFORMER 24C1-1X FAULT 'UB5)	2.88E-5	24	6.91E-05	
FMODNDRDL/CB	<MODULE> MD PUMP 9B FAILS TO DELIVER		6.771E-03	6.77E-03	
FMODSDPELW	<MODULE> SD PUMP FAILS TO DEL AFW TO HEATERS		1.830E-02	1.83E-02	
676) 18	LOSS OF NORMAL POWER INITIATING EVENT		9.100E-02	9.10E-02	5.97E-09
ACRECS4	RECOVERY OF AC POWER IN 54 MINUTES		4.35E-2	9.09E-03	
ADGQX13U	DIESEL GENERATOR 15G-130 OUT OF SERVICE EUE TO MAINTENANCE	1.86E-2	1	1.06E-02	
MDDDGAPLVI	<module> D/G 15G-12U FAULTS		5.241E-02	5.24E-02	
FQ1PXCP4	COGNITIVE ERROR FOR OPS. FAILING TO INIT. SD PUMP.		1.3E-2	1.30E-02	

5.9E-9