NMC
Committed to Nuclear Excellence

Point Beach Nuclear Plant
Operated by Nuclear Management Company, LLC

August 31, 2004

NRC 2004-0084
10 CFR 54

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Point Beach Nuclear Plant, Units 1 and 2
Dockets 50-266 and 50-301
License Nos. DPR-24 and DPR-27

Response to Request for Additional Information
Regarding the Point Beach Nuclear Plant License Renewal Application
(TAC Nos. MC2099 and MC2100)

By letter dated February 25, 2004 (NRC 2004-0016), Nuclear Management Company, LLC, NMC, submitted the Point Beach Nuclear Plant (PBNP) Units 1 and 2 License Renewal Application (LRA). On July 2, 2004, the Nuclear Regulatory Commission (NRC) requested additional information regarding Severe Accident Mitigation Alternatives (SAMA) for the PBNP LRA. The NMC responses to the staff's questions are provided in Enclosure 1.

Should you have any questions concerning this submittal, please contact Mr. James E. Knorr at (920) 755-6863.

Summary of Commitments

There are no new commitments made as part of this response.

I declare under penalty of perjury that the forgoing is true and correct. Executed on August 31, 2004.

Dennis L. Koehl
Site Vice-President, Point Beach Nuclear Plant
Nuclear Management Company, LLC

Enclosure
Attachment

A093

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Project Manager, Point Beach Nuclear Plant, USNRC
Resident Inspector, Point Beach Nuclear Plant, USNRC
PSCW

ENCLOSURE 1

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION REGARDING THE ANALYSIS OF SEVERE ACCIDENT MITIGATION ALTERNATIVES (SAMA) FOR THE POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2 (PBNP) LICENSE RENEWAL APPLICATION

The following is provided in response to the Nuclear Regulatory Commission (NRC) request for additional information (RAI) regarding the Point Beach Nuclear Plant (PBNP) License Renewal Application (LRA). The NRC staff questions are restated below with the NMC response following.

NRC Question:

1. The Severe Accident Mitigation Alternatives (SAMA) analysis was based on the most recent version of the PBNP Probabilistic Risk Assessment (PRA) for internal events (i.e., 2001 Level 1 model and March 2003 Level 3 model), which is an update of the individual plant examination (IPE) submittal transmitted to the U.S. Nuclear Regulatory Commission (NRC) in June 1993.

   Provide the following information regarding this PRA model:

   a. A description of the PRA work (Levels 1, 2, and 3) that has been completed since the IPE, and the results of the internal and external peer reviews of the work. This should include:

      i. A discussion of the various Level 1, 2, and 3 analyses completed for PBNP, including the dates and version identification.

NMC Response:

The history of the PRA development at PBNP is provided in Section F.2.2 of the Environmental Report. The PRA model used in the performance of the SAMA evaluation consists of:

Level 1 The most current Level 1 model of PBNP, Revision 3.02.

Level 2 The IPE Level 2 model (Point Beach Individual Plant Examination, Wisconsin Electric Power Co., date June 30, 1993).

Level 3 The March 2002 Level 3 model.

NRC Question:

ii. A description and the results of the internal and external peer reviews of the analyses that have been performed since the IPE. This should include a description of the internal and external peer reviews of the MELCOR Accident Consequence Code System (MACCS2) and MAAP analyses.

NMC Response:

Environmental Report Section F.2.2, in a paragraph entitled "WOG Peer Review," describes the peer review of the PBNP Levels 1 and 2 models.

The final WOG PRA Peer Review report for PBNP listed three Significance Level A observations and thirty Significance Level B observations along with five strengths. As discussed in section F.2.2 of the Environmental Report, the three Significance Level A observations dealt with a general lack of best-estimate or plant-specific thermal-hydraulic bases for system success criteria, the method used to determine the length of time that initial CST volume will last for various transients, and a lack of bases for both the time required and the time available to complete operator actions in the human reliability analysis.

The thirty Significance Level B observations can be sorted into several general categories. Eleven observations dealt with documentation of modeling processes and with the model quantification documentation. Five observations each were recorded for specific initiating event frequency issues and for specific human error probability issues. Comments on specific system model details accounted for three observations. Of the remaining six observations, one was on the PRA model maintenance and update guidance, two were on Level 2 issues, and three were on broader issues dealing with system models.

During 2003, a plant specific best-estimate basis for system success criteria was developed for each success branch on the event trees using the Modular Accident Analysis Program version 4.05 (MAAP4). The only change in event tree structure that resulted from this reanalysis was the elimination of the requirement for accumulators during a medium LOCA when SI is successful. This series of MAAP4 runs also provided the basis for the time available to perform operator actions in a completely updated human reliability analysis (HRA). The HRA was updated using the most recent methodology and was documented using the EPRI HRA calculator tool which guides the analyst through the process and ensures consistency in methodology. The time for operators to complete major actions was determined from the observation of a series of simulator exercises. As a part of this comprehensive HRA update, a

more rigorous method of searching for and dealing with dependencies among operator actions was also implemented.

Nine of the Significance Level B observations were also addressed during 2003. Two initiating event frequency issues were resolved. These dealt with the frequencies for LOOP and steam line break outside of containment. Three observations were resolved by providing the plant-specific thermal hydraulic analysis basis for system success criteria and HRA timing. One specific system modeling issue for AFW valve failures was addressed, and the detailed method for identifying operator action dependencies resolved another observation. The remaining two were documentation issues.

With the resolution of all three Significance Level A and nine of the thirty Significance Level B Peer Review observations, the PRA model results display a somewhat different risk profile than the model version used for the SAMA analysis. The majority of the changes can be traced to the updated HRA rather than to system model changes. The overall Core Damage Frequency (CDF) increased by about 10%, from 3.6E-05/yr to 4.2E-05/yr. When looking at the CDF contribution by initiator, the most significant change is the reduction in importance of the SGTR event and the increase in importance of the LOOP and loss of DC events. The SGTR event is less important because the revised human error probability for the operator action to depressurize the primary system was significantly lower. The LOOP and loss of DC bus initiating events are more important in the revised model because operator actions to restore power to battery chargers, to utilize 480 VAC bus crossties, and a dependent action to restore power to CCW and charging pumps all have higher human error probabilities.

Twelve Significance Level B observations that are not related to documentation remain to be addressed. Three of these observations are on very low probability events (ISLOCA and ATWS), so their resolution is unlikely to affect the SAMA analysis results. It is possible that resolution of the remaining nine observations could result in further changes to the risk profile, although this is not expected to be the case. The Point Beach guidance for PRA model maintenance and update requires that the PRA results be re-evaluated for new vulnerabilities that might become apparent after a model change is completed. The criteria used for this evaluation are similar to those used for many plant IPEs and refer to the guidance contained in NEI/NUMARC 91-04, "Severe Accident Issue Closure Guidelines." If a new vulnerability is identified, the Point Beach guidance states that it should be entered into the corrective action process. This process will ensure that any new vulnerabilities identified as a result of resolution of the remaining observations are dealt with appropriately.

SCIENTECH, LLC, performed the PBNP Level 3 SAMA analysis, using MACCS2. In accordance with SCIENTECH internal procedures, a person other than the analysis author performed an independent review of the analysis.

NRC Question:

iii. An assessment of the impact of the weaknesses/areas for improvement identified in any of the peer reviews on the SAMA identification and evaluation process.

NMC Response:

The WOG PRA Peer Review findings primarily dealt with the human reliability analysis (HRA) and with assuring that the success criteria had documented bases. Both of these areas have been addressed at PBNP in responding to the observations. The re-establishment of the bases for the success criteria also had an impact on the HRA via timing of human actions. Therefore, the PRA results were impacted via the HRA update changing human error probabilities. The risk profiles of the results of the PRA before and after the implementation of the revised HRA are shown below.

		Revision 3.02			Revision 3.13		
Initiator	**Description**	**Frequency**	**CDF**	**Percent**	**Frequency**	**CDF**	**Percent**
INIT-A	Large LOCA	5.00E-06	1.39E-07	0.389%	5.00E-06	4.24E-08	0.103%
INIT-EXC	Excessive LOCA (RPV Rupture)	9.90E-07	9.90E-07	2.760%	9.90E-07	9.90E-07	2.400%
INIT-ISL	Interfacing Systems LOCA	1.10E-07	1.10E-07	0.307%	1.10E-07	1.10E-07	0.267%
INIT-R	Steam Generator Tube Rupture	6.90E-03	8.75E-06	24.400%	6.90E-03	5.03E-06	12.200%
INIT-S1	Medium LOCA	1.10E-04	1.80E-06	5.023%	1.10E-04	7.01E-07	1.701%
INIT-S2	Small LOCA	3.20E-03	3.77E-07	1.052%	3.20E-03	1.98E-07	0.480%
INIT-SBO	Station Blackout	7.10E-03	4.41E-07	1.230%	7.10E-03	9.68E-08	0.235%
INIT-T1	Loss of Offsite Power	7.10E-03	4.13E-06	11.520%	7.10E-03	1.07E-05	25.970%
INIT-T2	Trip Without Condenser Available	1.90E-01	6.41E-06	17.880%	1.90E-01	5.68E-06	13.780%
INIT-T3	Trip With Condenser Available	6.60E-01	6.69E-07	1.865%	6.60E-01	6.16E-07	1.493%
INIT-TCC	Loss of CCW	3.65E+02	4.37E-06	12.200%	3.65E+02	3.07E-06	7.455%
INIT-TD1	Loss of DC Train A (Bus D01)	3.65E+02	2.76E-07	0.769%	3.65E+02	5.12E-06	12.410%
INIT-TD2	Loss of DC Train B (Bus D02)	3.65E+02	6.73E-08	0.188%	3.65E+02	1.39E-06	3.381%
INIT-TFB	Steam/Feed Break Inside Cont.	4.30E-03	2.76E-06	7.696%	4.30E-03	1.93E-06	4.673%
INIT-TIA	Loss of Instrument Air	3.65E+02	2.27E-07	0.633%	3.65E+02	1.04E-06	2.513%
INIT-TSB	Steam break Outside Cont.	9.90E-03	1.90E-06	5.307%	9.90E-03	2.23E-06	5.397%
INIT-TSW	Loss of Service Water	3.65E+02	2.43E-06	6.775%	3.65E+02	2.29E-06	5.544%
	Total		3.59E-05			4.12E-05	

The most significant changes to the risk profile were driven by changes to operator actions to (1) depressurize the primary during steam generator tube rupture events, (2) cross-tie 480VAC bus power during LOSP events and (3) manually restore power to the battery chargers following LOSP events. Decreases in the human error probability (HEP) for item 1 have resulted in a decrease in the CDF due to SGTR. Increases in the HEPs for items 2 and 3 have resulted in the increase in the CDF due to LOSP and Loss of DC power. From the perspective of SAMA identification and evaluation the increases in the CDF due to LOSP and Loss of DC are of particular interest.

The analysis process implemented in identifying and evaluating SAMAs for PBNP involved screening from consideration all those potential SAMAs that were not applicable to PBNP due to plant design and all those that had been implemented or the intent of which had been met at PBNP. Therefore, the change in the risk profile would not have had any impact on the set of SAMAs screened from requiring cost-benefit analyses. It is possible, however, that the operator action to cross-tie 480VAC power between buses 1B03 and 1B04 would have been found to be among the important human actions and included in the set of SAMAs suggested by the PRA results.

The contribution of LOSP to the total CDF was used in the cost-benefit evaluation of only two specific SAMAs (63 and 66). The use of the contribution of LOSP to CDF was applied very conservatively to these SAMAs which both deal with loss of AC power to the battery chargers (SBO conditions) and ultimately with loss of DC power. Since both of these SAMAs were found to not be cost-beneficial using this bounding analysis case, it was not necessary to refine this analysis further. However, given the increase in the importance of LOSP after the HRA update, it is reasonable to assume that this modeling approach may not eliminate these SAMAs from further consideration and it would, therefore, be necessary to examine an alternate modeling approach. Since both of these SAMAs deal with the plant's response to SBO, the next approach would be to examine the benefit by assuming that the risk associated with SBO was eliminated by either of the two SAMAs. Since this is a small subset of LOSP and, in fact, decreased with the update of the HRA, it is reasonable to assume that these SAMAs would also be eliminated from further consideration under the updated model.

The other SAMA evaluation that would be significantly expected to be impacted by the HEP revision is that for SAMA 180. This SAMA deals with improving the capability for restoring power to the battery chargers following LOSP. The HEP for manually restoring power was directly impacted by the HRA update and its value increased. The benefit for SAMA 180 was originally estimated by examining the change in risk due to making this action perfect; i.e., it was modeled by setting the HEP to 0. For the revised HRA, the larger HEP for this action would be expected to be more important and the result of a similar

evaluation would result in a higher benefit, requiring a more refined approach for evaluating this SAMA. It is expected that an automated system would not be cost-beneficial; the evaluation would, however, involve assumptions concerning design of an automatic system.

Other impacts on the SAMA evaluation due to the plant's responses to the WOG Peer Review findings related to the decrease in importance of the SGTR events would be expected to only increase the cost-benefit ratios of the SAMAs due to reduced CDF due to SGTR.

NRC Question:

iv. In Appendix F, Section F.2.2, NMC indicated that the WOG Peer Review stated "...that the PBNP PRA could be used effectively to support applications involving risk significance determinations supported by deterministic analyses once the items noted in the report are addressed." Later in the same discussion, after stating that issues other than documentation have not been addressed, NMC concluded that the issues "....are not expected to result in model changes that will significantly affect the overall results or conclusions of the SAMA evaluations." Reconcile the NMC conclusion with the WOG statement.

NMC Response:

The quoted statement from the WOG PRA Peer Review Report is standard wording for a grade of contingent 3. A grade of 3 means the model can effectively support applications involving risk significance determinations, and the contingency statement is added when there are some significant items that need to be addressed. The response to question 1.a.ii discusses the significant observations made by the PBNP PRA Peer Review team and how the observations affected the model results when they were addressed. The response to question 1.a.iii goes on to discuss how the SAMA analysis might be affected by the modified model results following the resolution of the Peer Review observations and concludes that the SAMA results are not significantly impacted by the model changes. Therefore, the conclusion stated in Section F.2.2 and repeated above is supported.

NRC Question:

v. A list of the changes made between versions, including Level 2 changes, and the CDF and the LERF for each version. Include the changes and their respective contributions to the reduction in the CDF between the IPE analysis and the most recent updated PRA (i.e., 1.15E-4 to 3.65E-5).

NMC Response:

In the table below, the versions of the PRA model for Point Beach are listed, including the changes made with each revision, and the resulting internal events core damage frequency and release frequency.

Point Beach PRA Model Revision Summary

Revision 0 **CDF : 1.15E-04/yr** **FPRF* : 2.43E-05/yr**
(Base model for IPE and IPEEE, data cutoff September 5, 1990)
* FPRF is Fission Product Release Frequency

Revision 1 **CDF : 9.74E-05/yr** **FPRF : (not updated)**
(a.k.a. PRA-93, data cutoff December 31, 1993)

- Added Alternate Shutdown (App. R) Buses B08 and B09
- Instrument Bus Modifications (static transfer switches)
- Full flow test lines added to ECCS
- Initial SI suction changed from BAST to RWST
- Removed failure of AFW if Operator fails to control flow on loss of Instrument Air (valves now left throttled)
- Data updates to reflect overhaul of G05 and replacement of MSIV operators

Revision 2 **CDF : 5.77E-05/yr** **FPRF : (not updated)**
(a.k.a. PRA-96, data cutoff June 30, 1996)

- Plant-specific data re-developed using information from September 6, 1990, through June 30, 1996
- Post-trip success criteria for Service Water was changed from 2 pumps to 3 pumps due to a re-analysis of service water requirements
- Added two new diesel generators, G03 and G04, and associated 4160 V switchgear for Train B power - included capability for alternate feeds from all four Diesel Generators

Revision 3.00 – 10/12/2001 CDF : 4.39E-05/yr LERF : 1.18E-05/yr
(data cutoff December 31, 1999)

- A transition to top logic (all fault tree) structure for primary model
- LERF model developed based on Safety Monitor model
- Added provision for a multitude of alternate electrical feed lineups
- Developed a complete Unit 2 model
- Updated:
  - Initiating Events
  - Event Trees / Top Logic
  - Data Analysis
  - HRA (for AFW HEPs only)
  - Service Water
  - Auxiliary Feedwater
  - ECCS (SI / RHR / Accumulators)
  - Electrical Distribution

Revision 3.01 – 02/28/2002 CDF : 3.78E-05/yr LERF : 1.18E-05/yr

- Implemented modification to motor driven AFW pumps for nitrogen backup supply to mini-recirculation valves

Revision 3.02 – 05/09/2002 CDF : 3.59E-05/yr LERF : 1.17E-05/yr

- Implemented modification to turbine driven AFW pumps for air accumulator backup supply to mini-recirculation valves

NRC Question:

b. A breakdown of the contributions to CDF by initiating event and event type, and of the population dose (person-rem per year within 50 miles) by containment release mode in the following form, or equivalent (given below). Provide a discussion of late containment failure and no containment failure (since it is not apparent that they are not addressed in the SAMA analysis), especially since late failures can significantly contribute to total person-rem.

Containment Release Mode	Population Dose % Contribution
SGTR	
Interfacing Systems LOCAs	
Containment isolation failure	
Early containment failure	
Late containment failure	
No containment failure	

NMC Response:

Initiating Event Name	Contribution to CDF	% Contribution
SGTR	8.75E-06	24.4%
TRANSIENT WITHOUT PCS	6.40E-06	17.8%
LOSS OF COMPONENT COOLING	4.39E-06	12.2%
LOSS OF OFFSITE POWER (DUAL)	4.13E-06	11.5%
STEAM/FEED BREAK INSIDE CONTAINMENT	2.76E-06	7.7%
LOSS OF SERVICE WATER	2.43E-06	6.8%
STEAM LINE BREAK OUTSIDE CONTAINMENT	1.90E-06	5.3%
MEDIUM LOCA (>2 TO 6)	1.80E-06	5.0%
EXCESSIVE LOCA (VESSEL FAILURE)	9.90E-07	2.8%
TRANSIENT WITH PCS	6.84E-07	1.9%
SBO	4.41E-07	1.2%
SMALL LOCA (3/8 TO 2)	3.77E-07	1.1%
LOSS OF BUS D-01	2.76E-07	0.8%
LOSS OF INSTRUMENT AIR	2.27E-07	0.6%
LARGE LOCA (>6)	1.39E-07	0.4%
INTERFACING SYSTEMS LOCA	1.10E-07	0.3%
LOSS OF BUS D-02	6.74E-08	0.2%
Total CDF	3.59E-05	

Event Type	CDF
Late SGTR	7.859E-06
Early SGTR	8.781E-07
Isolation Failure	7.517E-09
ISLOCA	1.1E-07
Internal Other CM Sequences	2.704E-05
Total Internal CDF	3.589E-05

Containment Release Mode	Population Dose (REM)	% Contribution
Late SGTR	1.39E+00	76.2%
Early SGTR	2.04E-01	11.2%
Isolation Failure	8.49E-04	0.05%
ISLOCA	1.53E-01	8.4%
Other CM	7.73E-02	4.2%
Total	1.83E+00	100.0%

The following discussion from Section 4.9 of the PBNP IPE, the documentation of the Level 2 PRA analysis used in this SAMA analysis, addresses the Late Containment failure question:

> "Results of the PBNP back-end analysis revealed that none of the analyzed core damage sequences go to containment failure due to overpressure within 24 hours. Thus, most of the fission products are retained for an extended period of time, allowing settling and impaction mechanisms to reduce the airborne fission product inventory available for release should the containment eventually fail. Only a single MAAP run for CET end state quantification (SFFL) reached the best estimate containment failure pressure of 177 psig within the 48 hour mission time of the Level 2 analysis. In that case containment failure occurred at 46.7 hours. Due to the significant amount of time available for this sequence, and all the other sequences which were tending towards overpressure conditions at the end of the 48 hour mission time, it is felt that significant time will be available to implement additional mitigating action, and these sequences can all be considered a success with accident management." [CET is Containment Event Tree].

Therefore, we have concluded that late containment failures were considered but were found to be so low in probability as to be negligible. Containment leakage was, therefore, the release mechanism considered for all sequences other than SGTR, Isolation Failure and ISLOCA.

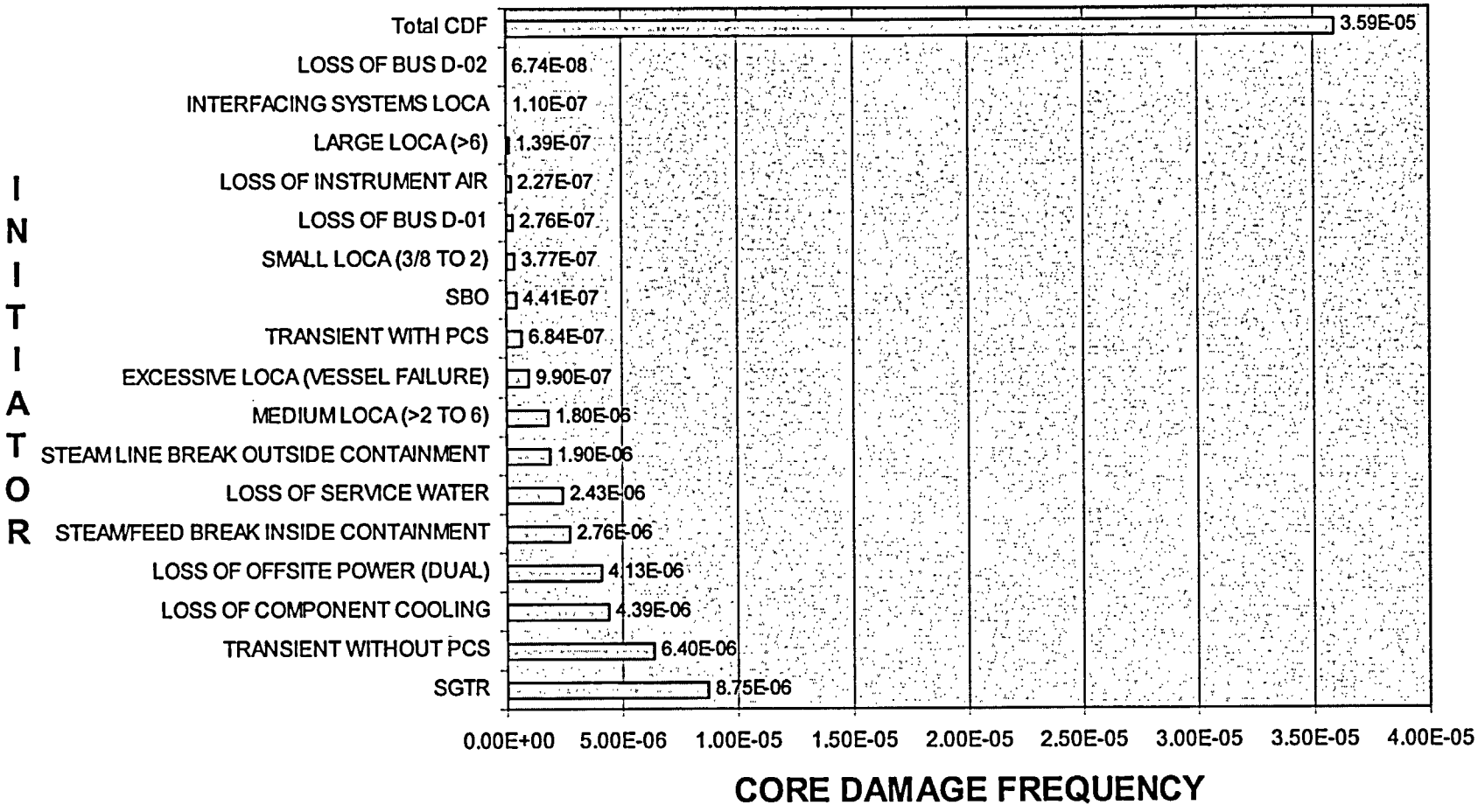
NRC Question:

c. A table/graph of the dominant contributors to the CDF from the most recent PRA similar to Figure 1.4-1 in the IPE. Also, provide the Tables of Basic Event Unavailability with Basic Event Identifiers and Importance Rankings (similar to Tables 3.3-1 and 3.4-2 in the IPE) from the most recent PRA.

NMC Response:

Graph and tables are provided on following pages.

PBNP CORE DAMAGE FREQUENCY BY INITIATOR



Baseline Model Basic Event Listing

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==============================================================================
WinNUPRA 3.0 Production  Licensed to: Ed Krantz          Last saved: 07/21/2004
File: C:\Models\PBNP0502\Data\TopLogic.BED
==============================================================================
BASIC EVENT ID   POINT EST.  TYPE DESCRIPTION
==============================================================================
120-BKR-CO-1Y116 7.611E-006   4   BLOCK 16 P38A BREAKER 1Y-01-16 1C-105 FROM 1DY0
120-BKR-CO-1Y1M1 7.611E-006   4   120VAC BKR 1Y-01-M11-43/Y-01 TO 1Y-01 FAILS OPEN
120-BKR-CO-1Y2M1 7.611E-006   4   120VAC BKR 1Y-02-M11-43/Y-02 TO 1Y-02 FAILS OPEN
120-BKR-CO-1Y3M1 7.611E-006   4   120VAC BKR 1Y-03-M11-43/Y-03 TO 1Y-03 FAILS OPEN
120-BKR-CO-2Y1M1 7.611E-006   4   120VAC BKR 2Y-01-M12-43/Y-01 TO 2Y-01 FAILS OPEN
120-BKR-CO-2Y214 7.611E-006   4   BLOCK 20 P38B BREAKER 2Y-02-14
120-BKR-CO-2Y2M1 7.611E-006   4   120VAC BKR 2Y-02-M12-43/Y-02 TO 2Y-02 FAILS OPEN
120-BKR-CO-LD103 7.611E-006   4   BREAKER LD-10-03 FAILS TO REMAIN CLOSED
120-BKR-CO-Y1501 7.611E-006   4   120 VAC BKR Y-15-010Y-15 TO 1DY-03 NCFO
120-BKR-CO-Y1505 7.611E-006   4   120 VAC BKR Y-15-050Y-15 TO 0DY-0C NCFO
120-BKR-CO-Y1507 7.611E-006   4   120VAC BKR 0Y-15-070Y-15 TO 0Y-16 NCFO
120-BKR-CO-Y1601 7.611E-006   4   120 VAC BKR Y-16-010Y-16 TO 1DY-01 NCFO
120-BKR-CO-Y1602 7.611E-006   4   120 VAC BKR Y-16-020Y-16 TO 1DY-02 NCFO
120-BKR-CO-Y1603 7.611E-006   4   120 VAC BKR Y-16-030Y-16 TO 2DY-01 NCFO
120-BKR-CO-Y1604 7.611E-006   4   120 VAC BKR Y-16-040Y-16 TO 2DY-02 NCFO
120-BKR-CO-Y1605 7.611E-006   4   120 VAC BKR Y-16-050Y-16 TO 0DY-0A NCFO
120-BKR-CO-Y1606 7.611E-006   4   120 VAC BKR Y-16-060Y-16 TO 0DY-0B NCFO
120-BKR-CO0Y2031 7.611E-006   4   120VAC BKR 0Y-203-10Y-203 TO 1Y-03-M1 NCFO
120-BKR-CO1Y2032 7.611E-006   4   120VAC BKR 1Y-203-21Y-203 TO 1Y-03-M1 NCFO
120-BS--LP---Y15 2.400E-006   4   120 VAC INSTRUMENT PANEL Y-15 FAILS
120-BS--LP---Y16 2.400E-006   4   120 VAC INSTRUMENT PANEL 0Y-16 FAILS
120-BS--LP--1Y01 2.400E-006   4   120 VAC INSTRUMENT BUS 1Y-01 FAILS (RED CHANNEL)
120-BS--LP--1Y02 2.400E-006   4   120 VAC INSTRUMENT BUS 1Y-02 FAILS (BLUE CHANNEL)
120-BS--LP--1Y03 2.400E-006   4   120 VAC INSTRUMENT BUS 1Y-03 FAILS (WHITE CHANNEL)
120-BS--LP--2Y01 2.400E-006   4   120 VAC INSTRUMENT BUS 2Y-01 FAILS (RED CHANNEL)
120-BS--LP--2Y02 2.400E-006   4   120 VAC INSTRUMENT BUS 2Y-02 FAILS (BLUE CHANNEL)
120-BS--LP--Y203 2.400E-006   4   120 VAC PANEL 0Y-203 FAILS (WHITE CHANNEL)
120-BS--LP-01Y06 2.400E-006   4   120V INSTRUMENT AC BUS 1Y06 FAILURE
120-BS--LP-02Y06 2.400E-006   4   120V INSTRUMENT AC BUS 2Y-06 FAILURE
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120-BS--LP-0LD10	2.400E-006	4	LIGHTING DISTR. PANEL LD-10 FAILURE
120-BS--LP-1Y203	2.400E-006	4	120 VAC PANEL 1Y-203 FAILS (WHITE CHANNEL)
120-BS--LP-OELP3	2.400E-006	4	EMERGENCY LIGHTING PANEL SLELP-3 FAILURE
120-BS--TM---Y15	5.710E-003	3	120 VAC PANEL Y-15 UNAVAILABLE DUE TO TEST OR MAINTENANCE
120-BS--TM---Y16	5.710E-003	3	120 VAC PANEL Y-16 UNAVAILABLE DUE TO TEST OR MAINTENANCE
120-INV-LP--DY0A	5.638E-004	4	SPARE RED CHANNEL INVERTER DY-0A LOSS OF POWER
120-INV-LP--DY0B	5.638E-004	4	SPARE BLUE CHANNEL INVERTER 0DY-0B LOSS OF POWER
120-INV-LP--DY0C	5.638E-004	4	SPARE WHITE CHANNELINVERTER DY-0C LOSS OF POWER
120-INV-LP-1DY01	5.638E-004	4	RED CHANNEL INVERTER 1DY-01 LOSS OF POWER
120-INV-LP-1DY02	5.638E-004	4	BLUE CHANNEL INVERTER 1DY-02 LOSS OF POWER
120-INV-LP-1DY03	5.638E-004	4	WHITE CHANNEL INVERTER 1DY-03 LOSS OF POWER
120-INV-LP-2DY01	5.638E-004	4	RED CHANNEL INVERTER 2DY-01 LOSS OF POWER
120-INV-LP-2DY02	5.638E-004	4	BLUE CHANNEL INVERTER 2DY-02 LOSS OF POWER
120-INV-TM--DY0A	1.630E-002	3	INVERTER DY-0A UNAVAILABLE DUE TO TEST OR MAINTENANCE
120-INV-TM--DY0B	1.630E-002	3	INVERTER DY-0B UNAVAILABLE DUE TO TEST OR MAINTENANCE
120-INV-TM--DY0C	1.630E-002	3	INVERTER DY-0C UNAVAILABLE DUE TO TEST OR MAINTENANCE
120-INV-TM-1DY01	1.030E-002	3	INVERTER 1DY-01 UNAVAILABLE DUE TO TEST OR MAINTENANCE
120-INV-TM-1DY02	1.030E-002	3	INVERTER 1DY-02 UNAVAILABLE DUE TO TEST OR MAINTENANCE
120-INV-TM-1DY03	1.030E-002	3	INVERTER 1DY-03 UNAVAILABLE DUE TO TEST OR MAINTENANCE
120-INV-TM-2DY01	1.030E-002	3	INVERTER 2DY-01 UNAVAILABLE DUE TO TEST OR MAINTENANCE
120-INV-TM-2DY02	1.030E-002	3	INVERTER 2DY-02 UNAVAILABLE DUE TO TEST OR MAINTENANCE
120-PNL-LP-1C105	2.400E-006	4	BLOCK 16 CABINET FAILURE 1C-105
120-PNL-LP-2C105	2.400E-006	4	BLOCK 20 P38B CABINET FAILURE 2C-105
120-STS-CO--DY0A	2.400E-005	4	DY-0A INTERNAL STATIC TRANSFER SWITCH NCFO
120-STS-CO--DY0B	2.400E-005	4	0DY-0B INTERNAL STATIC TRANSFER SWITCH NCFO
120-STS-CO--DY0C	2.400E-005	4	0-83/DY-0C EXTERNALSTATIC TRANSFER SWITCH NCFO
120-STS-CO-1DY01	2.400E-005	4	1DY-01 INTERNAL STATIC TRANS SWITCHNCFO
120-STS-CO-1DY02	2.400E-005	4	1DY-02 INTERNAL STATIC TRANS SWITCHNCFO
120-STS-CO-1DY03	2.400E-005	4	1-83/DY-03 EXTERNALSTATIC TRANS SWITCHNCFO
120-STS-CO-2DY01	2.400E-005	4	2DY-01 INTERNAL STATIC TRANS SWITCHNCFO
120-STS-CO-2DY02	2.400E-005	4	2DY-02 INTERNAL STATIC TRANS SWITCHNCFO
120-STS-FT--DY0A	1.000E-005	3	0DY-0A INT STATIC TRANSFER SWITCH FAILS TO TRANSFER
120-STS-FT--DY0B	1.000E-005	3	0DY-0B INT STATIC TRANSFER SWITCH FAILS TO TRANSFER
120-STS-FT--DY0C	1.000E-005	3	0-83/DY-0C EXTERNALSTATIC TRANS SWITCHFAILS TO TRANSFER
120-STS-FT-1DY01	1.000E-005	3	1DY-01 INTERNAL STATIC TRANS SWITCHFAILS TO TRANSFER
120-STS-FT-1DY02	1.000E-005	3	1DY-02 INTERNAL STATIC TRANS SWITCHFAILS TO TRANSFER
120-STS-FT-1DY03	1.000E-005	3	1-83/DY-03 EXTERNALSTATIC TRANS SWITCHFAILS TO TRANSFER

120-STS-FT-2DY01	1.000E-005	3	2DY-01 INTERNAL STATIC TRANS SWITCHFAILS TO TRANSFER
120-STS-FT-2DY02	1.000E-005	3	2DY-02 INTERNAL STATIC TRANS SWITCHFAILS TO TRANSFER
120-SW--FT143Y01	1.000E-005	3	1Y-01 TRANSFER SWITCH 1-43/Y-01 FAILS TO TRANSFER
120-SW--FT143Y02	1.000E-005	3	1Y-02 TRANSFER SWITCH 1-43/Y-02 FAILS TO TRANSFER
120-SW--FT143Y03	1.000E-005	3	1Y-03 TRANSFER SWITCH 1-43/Y-03 FAILS TO TRANSFER
120-SW--FT243Y01	1.000E-005	3	2Y-01 TRANSFER SWITCH 2-43/Y-01 FAILS TO TRANSFER
120-SW--FT243Y02	1.000E-005	3	2Y-02 TRANSFER SWITCH 2-43/Y-02 FAILS TO TRANSFER
1201BKR-CO-1Y116	3.171E-007	4	BLOCK 16 P38A BREAKER 1Y-01-16 1C-105 FROM 1DY0
1201BKR-CO-2Y214	3.171E-007	4	BLOCK 20 P38B BREAKER 2Y-02-14
1201PNL-LP-1C105	1.000E-007	4	BLOCK 16 CABINET FAILURE 1C-105
1201PNL-LP-2C105	1.000E-007	4	BLOCK 20 P38B CABINET FAILURE 2C-105
125-BAT-TM---D05	1.730E-002	3	125 VDC BATTERY D-05 TEST OR MAINTENANCE
125-BAT-TM---D06	1.730E-002	3	125 VDC BATTERY D-06 TEST OR MAINTENANCE
125-BAT-TM--D105	1.730E-002	3	125 VDC BATTERY D-105 TEST OR MAINTENANCE
125-BAT-TM--D106	1.730E-002	3	125 VDC BATTERY D-106 TEST OR MAINTENANCE
125-BAT-TM--D305	1.730E-002	3	125 VDC BATTERY D-305 TEST OR MAINTENANCE
125-BKR-CO--3012	7.611E-006	4	BREAKER D72-3012 BETWEEN D-09 AND D-301
125-BKR-CO-72108	7.611E-006	4	BKR 72-108 DC PANELD01 TO D11 FAILS OPEN
125-BKR-CO-72109	7.611E-006	4	BKR 72-1109 1A-05 NORMAL POWER FAILS OPEN
125-BKR-CO-72117	7.611E-006	4	BKR 72-1117 1B-03 NORMAL POWER FAILS OPEN
125-BKR-CO-72132	7.611E-006	4	BKR 72-1312 2A06 NORMAL CONTROL POWER FAILS OPEN
125-BKR-CO-72208	7.611E-006	4	BKR 72-208 DC PANELD02 TO D13 FAILS OPEN
125-BKR-CO-72302	7.611E-006	4	BKR 72-3102 2B03 CONTROL POWER FAILS OPEN
125-BKR-CO-72307	7.611E-006	4	BKR 72-307 DC PANELD31 TO BUS D03 FAILS OPEN
125-BKR-CO-72311	7.611E-006	4	BKR 72-1311 1A06 CONTROL POWER FAILS OPEN
125-BKR-CO-72314	7.611E-006	4	BKR 72-3104 NORMAL CONTROL POWER FAILS OPEN
125-BKR-CO-72407	7.611E-006	4	BKR 72-407 FROM BUS D04 TO PANEL D41 FAILS
125-BKR-CO-72412	7.611E-006	4	CIRCUIT BREAKER 72-4102 FAILS OPEN
125-BKR-CO-72413	7.611E-006	4	CIRCUIT BREAKER 72-4101 FAILS OPEN
125-BKR-CO-D01-6	7.611E-006	4	BKR D01-6 DC PANEL D01 TO D12 FAILS OPEN
125-BKR-CO-D01-7	7.611E-006	4	BKR D01-7 FAILS OPEN
125-BKR-CO-D01-8	7.611E-006	4	BKR D01-8 DC PANEL D01 TO D11 FAILS OPEN
125-BKR-CO-D02-6	7.611E-006	4	BKR D02-6 DC PANEL D02 TO D14 FAILS OPEN
125-BKR-CO-D02-7	7.611E-006	4	BKR D02-7 FAILS OPEN
125-BKR-CO-D02-8	7.611E-006	4	BKR D02-8 DC PANEL D02 TO D13 FAILS OPEN
125-BKR-CO-D03-2	7.611E-006	4	CIRCUIT BREAKER D03-2 FAILS OPEN
125-BKR-CO-D03-7	7.611E-006	4	BKR D03-7 FAILS OPEN

125-BKR-CO-D11-9	7.611E-006	4	BKR D11-9 1A-05 NORM CONT. PWR FAILS OPEN
125-BKR-CO-D1122	7.611E-006	4	BKR D11-22 PWR FROMD-11 TO D-16 FAILS OPEN
125-BKR-CO-D1129	7.611E-006	4	BKR D11-29 NORM D-11 TO D-17 FAILS OPEN
125-BKR-CO-D1211	7.611E-006	4	BKR D12-11 G01 START CKT 1 NORM FAILS OPEN
125-BKR-CO-D1311	7.611E-006	4	BKR D13-11 1A06 CONT PWR NORM FAILS OPEN
125-BKR-CO-D1329	7.611E-006	4	BKR D13-29 D-13 TO D-21 FAILS OPEN
125-BKR-CO-D1330	7.611E-006	4	BKR D13-30 D-13 TO D-19 FAILS OPEN
125-BKR-CO-D1332	7.611E-006	4	BKR D13-32 D-13 TO D-18 FAILS OPEN
125-BKR-CO-D1411	7.611E-006	4	BKR D14-11 G02 START CKT 1 NORM FAILS OPEN
125-BKR-CO-D1603	7.611E-006	4	BKR D16-3 TURB GEN LOCK CKT U1 FAILS OPEN
125-BKR-CO-D1620	7.611E-006	4	BKR D16-20 G02 START CKT 2 FAILS OPEN
125-BKR-CO-D1703	7.611E-006	4	BKR D17-3 SAFE BUS A C01 FAILS OPEN
125-BKR-CO-D1705	7.611E-006	4	BKR D17-5 SAFE BUS A 1C03 FAILS OPEN
125-BKR-CO-D1712	7.611E-006	4	BKR D17-12 SAFE RACKS 1C156&1C157 FAILS OPEN
125-BKR-CO-D1804	7.611E-006	4	BKR D18-04 TG BACKUP LOCK CKT U1 FAILSOPEN
125-BKR-CO-D1820	7.611E-006	4	BKR D18-20 DG G01 START CKT 2 FAILS OPEN
125-BKR-CO-D1903	7.611E-006	4	BKR D19-03 SAFEGUARDS BUS B C01 FAILS OPEN
125-BKR-CO-D1905	7.611E-006	4	BKR D19-05 SAFEGUARD BUS B 1C03 FAILS OPEN
125-BKR-CO-D2104	7.611E-006	4	BKR D21-04 PROTECT RACK 1C166+167 FAILS OPEN
125-BKR-CO-D3011	7.611E-006	4	125 VDC BREAKER D72-3011 BETWEEN D-01 AND D-301
125-BKR-CO-D3013	3.171E-007	4	125 VDC BREAKER D72-3013 BETWEEN D-02 AND D-301
125-BKR-CO-D3111	7.611E-006	4	CIRCUIT BREAKER D31-11 FAILS OPEN
125-BKR-OO-D3011	5.727E-004	3	125 VDC BREAKER D72-3011 BETWEEN D-01 AND D-301
125-BKR-OO-D3013	5.727E-004	3	125 VDC BREAKER D72-3013 BETWEEN D-02 AND D-301
125-BS--LP---D01	2.400E-006	4	125 VDC BUS D-01 FAILS
125-BS--LP---D02	2.400E-006	4	125 VDC BUS D-02 FAILS
125-BS--LP---D03	2.400E-006	4	125 VDC BUS D03 FAILS
125-BS--LP---D04	2.400E-006	4	125 VDC BUS D-04 FAILS
125-BS--LP---D09	2.400E-006	4	125 VDC DIST. PANELD-09 FAILS
125-BS--LP---D11	2.400E-006	4	125 VDC DIST PANEL D-11 FAILS
125-BS--LP---D12	2.400E-006	4	125 VDC DIST PANEL D-12 FAILS
125-BS--LP---D13	2.400E-006	4	125 VDC DIST PANEL D-13 FAILS
125-BS--LP---D14	2.400E-006	4	125 VDC DIST PANEL D-14 FAILS
125-BS--LP---D16	2.400E-006	4	125V DC DISTRIBUTION PANEL D16 FAILURE
125-BS--LP---D17	2.400E-006	4	125V DC DISTRIBUTION PANEL D17 FAILURE
125-BS--LP---D18	2.400E-006	4	125V DC DISTRIBUTION PANEL D18 FAILURE
125-BS--LP---D19	2.400E-006	4	125V DC DISTRIBUTION PANEL D19 FAILS

125-BS--LP---D21	2.400E-006	4	125V DC DISTRIBUTION PANEL D21 FAILURE
125-BS--LP---D26	2.400E-006	4	125 VDC DIST PANEL D-26 FAILS
125-BS--LP---D27	2.400E-006	4	125 VDC DIST PANEL D-27 FAILS
125-BS--LP---D28	2.400E-006	4	125 VDC DIST PANEL D-28 FAILS
125-BS--LP---D31	2.400E-006	4	125 VDC DIST PANEL D-31 FAILS
125-BS--LP---D40	2.400E-006	4	125 VDC DIST PANEL D-40 FAILS
125-BS--LP---D41	2.400E-006	4	125 VDC DIST PANEL D-41 FAILS
125-BS--LP---D49	2.400E-006	4	125 VDC DIST PANEL D-49 FAILS
125-BS--LP---D50	2.400E-006	4	125 VDC DIST PANEL D-50 FAILS
125-BS--LP---D51	2.400E-006	4	125 VDC DIST PANEL D-51 FAILS
125-BS--LP---D52	2.400E-006	4	125 VDC DIST PANEL D-52 FAILS
125-BS--LP---D53	2.400E-006	4	125 VDC DIST PANEL D-53 FAILS
125-BS--LP--D109	2.400E-006	4	125 VDC DIST. PANELD-109 FAILS
125-BS--LP--D301	2.400E-006	4	125 VDC DIST. PANELD-301 FAILS
125-BS--LP--D302	2.400E-006	4	125 VDC DIST. PANELD-302 FAILS
125-BS--LP-00D16	2.400E-006	4	125V DC DISTRIBUTION PANEL D16 FAILURE
125-FU--SO-156F3	5.180E-007	4	FUSE F3 IN CABINET 1C156 FAILS
125-FU--SO-156F4	5.180E-007	4	FUSE F4 IN CABINET 1C156 FAILS
125-FU--SO-166F3	5.180E-007	4	FUSE F3 IN CABINET 1C166 FAILS
125-FU--SO-166F4	5.180E-007	4	FUSE F4 IN CABINET 1C166 FAILS
125-FU--SO0101F1	3.108E-006	4	125 VDC FUSE (+) D72-01-01 BETWEEN D-05 AND D-01
125-FU--SO0101F2	3.108E-006	4	125 VDC FUSE (-) D72-01-01 BETWEEN D-05 AND D-01
125-FU--SO0103F1	3.108E-006	4	125 VDC FUSE (+) D72-01-03 BETWEEN D-01 AND D-26
125-FU--SO0103F2	3.108E-006	4	125 VDC FUSE (-) D72-01-03 BETWEEN D-01 AND D-26
125-FU--SO0106F1	3.108E-006	4	125 VDC FUSE (+) D72-01-06 BETWEEN D-01 AND D-12
125-FU--SO0106F2	3.108E-006	4	125 VDC FUSE (-) D72-01-06 BETWEEN D-01 AND D-12
125-FU--SO0107F1	3.108E-006	4	125 VDC FUSE (+) D72-01-07 BETWEEN D-07 AND D-01
125-FU--SO0107F2	3.108E-006	4	125 VDC FUSE (-) D72-01-07 BETWEEN D-07 AND D-01
125-FU--SO0108F1	3.108E-006	4	125 VDC FUSE (+) D72-01-08 BETWEEN D-01 AND D-11
125-FU--SO0108F2	3.108E-006	4	125 VDC FUSE (-) D72-01-08 BETWEEN D-01 AND D-11
125-FU--SO0201F1	3.108E-006	4	125 VDC FUSE (+) D72-02-01 BETWEEN D-08 AND D-06
125-FU--SO0201F2	3.108E-006	4	125 VDC FUSE (-) D72-02-01 BETWEEN D-08 AND D-06
125-FU--SO0203F1	3.108E-006	4	125 VDC FUSE (+) D72-02-03 BETWEEN D-02 AND D-27
125-FU--SO0203F2	3.108E-006	4	125 VDC FUSE (-) D72-02-03 BETWEEN D-02 AND D-27
125-FU--SO0206F1	3.108E-006	4	125 VDC FUSE (+) D72-02-06 BETWEEN D-02 AND D-14
125-FU--SO0206F2	3.108E-006	4	125 VDC FUSE (-) D72-02-06 BETWEEN D-02 AND D-14
125-FU--SO0207F1	3.108E-006	4	125 VDC FUSE (+) D72-02-07 BETWEEN D-08 AND D-02

125-FU--SO0207F2	3.108E-006	4	125 VDC FUSE (-) D72-02-07 BETWEEN D-08 AND D-02
125-FU--SO0208F1	3.108E-006	4	125 VDC FUSE (+) D72-02-08 BETWEEN D-02 AND D-13
125-FU--SO0208F2	3.108E-006	4	125 VDC FUSE (-) D72-02-08 BETWEEN D-02 AND D-13
125-FU--SO0301F1	3.108E-006	4	125 VDC FUSE (+)
125-FU--SO0301F2	3.108E-006	4	125 VDC FUSE (-)
125-FU--SO0302F1	3.108E-006	4	125 VDC FUSE (+) D72-03-02 BETWEEN D-107 AND D-03
125-FU--SO0302F2	3.108E-006	4	125 VDC FUSE (-) D72-03-02 BETWEEN D-107 AND D-03
125-FU--SO0303F1	3.108E-006	4	125 VDC FUSE (+) D72-03-03 BETWEEN D-107 AND D-105
125-FU--SO0303F2	3.108E-006	4	125 VDC FUSE (-) D72-03-03 BETWEEN D-107 AND D-105
125-FU--SO0304F1	3.108E-006	4	125 VDC FUSE (+) D72-03-04 BETWEEN D-302 AND D-03
125-FU--SO0304F2	3.108E-006	4	125 VDC FUSE (-) D72-03-04 BETWEEN D-302 AND D-03
125-FU--SO0306F1	3.108E-006	4	125 VDC FUSE (+) D72-03-06 BETWEEN D-03/DY-03 (WHITE)
125-FU--SO0306F2	3.108E-006	4	125 VDC FUSE (-) D72-03-06 BETWEEN D-03/DY-03 (WHITE)
125-FU--SO0307F1	3.108E-006	4	125 VDC FUSE (+) D72-03-07 BETWEEN D-03 AND D-31
125-FU--SO0307F2	3.108E-006	4	125 VDC FUSE (-) D72-03-07 BETWEEN D-03 AND D-31
125-FU--SO0308F1	3.108E-006	4	125 VDC FUSE (+) D72-03-08 BETWEEN D-03 / DY0C (WHITE)
125-FU--SO0308F2	3.108E-006	4	125 VDC FUSE (-) D72-03-08 BETWEEN D-03 / DY0C (WHITE)
125-FU--SO0402F1	3.108E-006	4	125 VDC FUSE (+) D72-04-02 BETWEEN D-108 AND D-04
125-FU--SO0402F2	3.108E-006	4	125 VDC FUSE (-) D72-04-02 BETWEEN D-108 AND D-04
125-FU--SO0403F1	3.108E-006	4	125 VDC FUSE (+) D72-04-03-F1 BTWN D302 AND D04
125-FU--SO0403F2	3.108E-006	4	125 VDC FUSE (-) D72-04-03-F2 BTWN D302 AND D04
125-FU--SO0404F1	3.108E-006	4	125 VDC FUSE (+) D72-04-04 BETWEEN D-108 AND D-106
125-FU--SO0404F2	3.108E-006	4	125 VDC FUSE (-) D72-04-04 BETWEEN D-108 AND D-106
125-FU--SO0406F1	3.108E-006	4	125 VDC FUSE (+) D72-04-06 BETWEEN D-04 AND D-28
125-FU--SO0406F2	3.108E-006	4	125 VDC FUSE (-) D72-04-06 BETWEEN D-04 AND D-28
125-FU--SO0408F1	3.108E-006	4	125 VDC FUSE (+) D72-04-08 BETWEEN D-04 AND D-41
125-FU--SO0408F2	3.108E-006	4	125 VDC FUSE (-) D72-04-08 BETWEEN D-04 AND D-41
125-FU--SO1101F1	3.108E-006	4	125 VDC FUSE (+) D72-11-01 BETWEEN D-11/DY-01 (RED)
125-FU--SO1101F2	3.108E-006	4	125 VDC FUSE (-) D72-11-01 BETWEEN D-11/DY-01 (RED)
125-FU--SO1103F1	3.108E-006	4	125 VDC FUSE (+) D72-11-03 BETWEEN D-11 AND 1A-01
125-FU--SO1103F2	3.108E-006	4	125 VDC FUSE (-) D72-11-03 BETWEEN D-11 AND 1A-01
125-FU--SO1104F1	3.108E-006	4	125 VDC FUSE (+) D72-11-04 BETWEEN D-11 AND 1A-02
125-FU--SO1104F2	3.108E-006	4	125 VDC FUSE (-) D72-11-04 BETWEEN D-11 AND 1A-02
125-FU--SO1105F1	3.108E-006	4	125 VDC FUSE (+) D72-11-05 BETWEEN D-11 AND 1A-03
125-FU--SO1105F2	3.108E-006	4	125 VDC FUSE (-) D72-11-05 BETWEEN D-11 AND 1A-03
125-FU--SO1106F1	3.108E-006	4	125 VDC FUSE (+) D72-11-06 BETWEEN D-11 AND 1A-04
125-FU--SO1106F2	3.108E-006	4	125 VDC FUSE (-) D72-11-06 BETWEEN D-11 AND 1A-04

125-FU--SO1107F1	3.108E-006	4	125 VDC FUSE (+) D72-11-07 BETWEEN D-11 AND 1A-05
125-FU--SO1107F2	3.108E-006	4	125 VDC FUSE (-) D72-11-07 BETWEEN D-11 AND 1A-05
125-FU--SO1109F1	3.108E-006	4	125 VDC FUSE (+) D72-11-09 BETWEEN D-11 AND 1B-01
125-FU--SO1109F2	3.108E-006	4	125 VDC FUSE (-) D72-11-09 BETWEEN D-11 AND 1B-01
125-FU--SO1110F1	3.108E-006	4	125 VDC FUSE (+) D72-11-10 BETWEEN D-11 AND 1B-02
125-FU--SO1110F2	3.108E-006	4	125 VDC FUSE (-) D72-11-10 BETWEEN D-11 AND 1B-02
125-FU--SO1111F1	3.108E-006	4	125 VDC FUSE (+) D72-11-11 BETWEEN D-11 AND 1B-03
125-FU--SO1111F2	3.108E-006	4	125 VDC FUSE (-) D72-11-11 BETWEEN D-11 AND 1B-03
125-FU--SO1201F1	3.108E-006	4	125 VDC FUSE (+) D72-12-01 BETWEEN D-12/2DY-01 (RED)
125-FU--SO1201F2	3.108E-006	4	125 VDC FUSE (-) D72-12-01 BETWEEN D-12/2DY-01 (RED)
125-FU--SO1203F1	3.108E-006	4	125 VDC FUSE (+) D72-12-03 BETWEEN D-12 AND 2A-01
125-FU--SO1203F2	3.108E-006	4	125 VDC FUSE (-) D72-12-03 BETWEEN D-12 AND 2A-01
125-FU--SO1204F1	3.108E-006	4	125 VDC FUSE (+) D72-12-04 BETWEEN D-12 AND 2A-02
125-FU--SO1204F2	3.108E-006	4	125 VDC FUSE (-) D72-12-04 BETWEEN D-12 AND 2A-02
125-FU--SO1205F1	3.108E-006	4	125 VDC FUSE (+) D72-12-05 BETWEEN D-12 AND 2A-03
125-FU--SO1205F2	3.108E-006	4	125 VDC FUSE (-) D72-12-05 BETWEEN D-12 AND 2A-03
125-FU--SO1206F1	3.108E-006	4	125 VDC FUSE (+) D72-12-06 BETWEEN D-12 AND 2A-04
125-FU--SO1206F2	3.108E-006	4	125 VDC FUSE (-) D72-12-06 BETWEEN D-12 AND 2A-04
125-FU--SO1208F1	3.108E-006	4	125 VDC FUSE (+) D72-12-08 BETWEEN D-12 AND 2A-05
125-FU--SO1208F2	3.108E-006	4	125 VDC FUSE (-) D72-12-08 BETWEEN D-12 AND 2A-05
125-FU--SO1209F1	3.108E-006	4	125 VDC FUSE (+) D72-12-09 BETWEEN D-12 AND 2B-01
125-FU--SO1209F2	3.108E-006	4	125 VDC FUSE (-) D72-12-09 BETWEEN D-12 AND 2B-01
125-FU--SO1210F1	3.108E-006	4	125 VDC FUSE (+) D72-12-10 BETWEEN D-12 AND 2B-02
125-FU--SO1210F2	3.108E-006	4	125 VDC FUSE (-) D72-12-10 BETWEEN D-12 AND 2B-02
125-FU--SO1211F1	3.108E-006	4	125 VDC FUSE (+) D72-12-11 BETWEEN D-12 AND 2B-03
125-FU--SO1211F2	3.108E-006	4	125 VDC FUSE (-) D72-12-11 BETWEEN D-12 AND 2B-03
125-FU--SO1212F1	3.108E-006	4	125 VDC FUSE (+) D72-12-12 BETWEEN D-12 AND 2B-04
125-FU--SO1212F2	3.108E-006	4	125 VDC FUSE (-) D72-12-12 BETWEEN D-12 AND 2B-04
125-FU--SO1301F1	3.108E-006	4	125 VDC FUSE (+) D72-13-01 BETWEEN D-13/2DY-02 (BLUE)
125-FU--SO1301F2	3.108E-006	4	125 VDC FUSE (-) D72-13-01 BETWEEN D-13/2DY-02 (BLUE)
125-FU--SO1303F1	3.108E-006	4	125 VDC FUSE (+) D72-13-03 BETWEEN D-13 AND 2A-02
125-FU--SO1303F2	3.108E-006	4	125 VDC FUSE (-) D72-13-03 BETWEEN D-13 AND 2A-02
125-FU--SO1304F1	3.108E-006	4	125 VDC FUSE (+) D72-13-04 BETWEEN D-13 AND 2A-01
125-FU--SO1304F2	3.108E-006	4	125 VDC FUSE (-) D72-13-04 BETWEEN D-13 AND 2A-01
125-FU--SO1305F1	3.108E-006	4	125 VDC FUSE (+) D72-13-05 BETWEEN D-13 AND 2A-04
125-FU--SO1305F2	3.108E-006	4	125 VDC FUSE (-) D72-13-05 BETWEEN D-13 AND 2A-04
125-FU--SO1306F1	3.108E-006	4	125 VDC FUSE (+) D72-13-06 BETWEEN D-13 AND 2A-03

125-FU--SO1306F2	3.108E-006	4	125 VDC FUSE (-) D72-13-06 BETWEEN D-13 AND 2A-03
125-FU--SO1309F1	3.108E-006	4	125 VDC FUSE (+) D72-13-09 BETWEEN D-13 AND 2B-02
125-FU--SO1309F2	3.108E-006	4	125 VDC FUSE (-) D72-13-09 BETWEEN D-13 AND 2B-02
125-FU--SO1310F1	3.108E-006	4	125 VDC FUSE (+) D72-13-10 BETWEEN D-13 AND 2B-01
125-FU--SO1310F2	3.108E-006	4	125 VDC FUSE (-) D72-13-10 BETWEEN D-13 AND 2B-01
125-FU--SO1311F1	3.108E-006	4	125 VDC FUSE (+) D72-13-11 BETWEEN D-13 AND 2B-04
125-FU--SO1311F2	3.108E-006	4	125 VDC FUSE (-) D72-13-11 BETWEEN D-13 AND 2B-04
125-FU--SO1401F1	3.108E-006	4	125 VDC FUSE (+) D72-14-01 BETWEEN D-14 / DY0B (BLUE)
125-FU--SO1401F2	3.108E-006	4	125 VDC FUSE (-) D72-14-01 BETWEEN D-14 / DY0B (BLUE)
125-FU--SO1402F1	3.108E-006	4	125 VDC FUSE (+) D72-14-02 BETWEEN D-14 AND D-40
125-FU--SO1402F2	3.108E-006	4	125 VDC FUSE (-) D72-14-02 BETWEEN D-14 AND D-40
125-FU--SO2601F1	3.108E-006	4	125 VDC FUSE (+) D72-26-01 BETWEEN D-26 AND DY0A (RED)
125-FU--SO2601F2	3.108E-006	4	125 VDC FUSE (-) D72-26-01 BETWEEN D-26 AND DY0A (RED)
125-FU--SO2607F1	3.108E-006	4	125 VDC FUSE (+) D72-26-07 BETWEEN D-26 AND G-01 CP
125-FU--SO2607F2	3.108E-006	4	125 VDC FUSE (-) D72-26-07 BETWEEN D-26 AND G-01 CP
125-FU--SO2610F1	3.108E-006	4	125 VDC FUSE (+) D72-26-10 BETWEEN D-26 AND G-01 FF
125-FU--SO2610F2	3.108E-006	4	125 VDC FUSE (-) D72-26-10 BETWEEN D-26 AND G-01 FF
125-FU--SO2701F1	3.108E-006	4	125 VDC FUSE (+) D72-27-01 BETWEEN D-27/DY-02 (BLUE)
125-FU--SO2701F2	3.108E-006	4	125 VDC FUSE (-) D72-27-01 BETWEEN D-27/DY-02 (BLUE)
125-FU--SO2703F1	3.108E-006	4	125 VDC FUSE (+) D72-27-03 BETWEEN D-27 AND 1A-02
125-FU--SO2703F2	3.108E-006	4	125 VDC FUSE (-) D72-27-03 BETWEEN D-27 AND 1A-02
125-FU--SO2704F1	3.108E-006	4	125 VDC FUSE (+) D72-27-04 BETWEEN D-27 AND 1A-01
125-FU--SO2704F2	3.108E-006	4	125 VDC FUSE (-) D72-27-04 BETWEEN D-27 AND 1A-01
125-FU--SO2705F1	3.108E-006	4	125 VDC FUSE (+) D72-27-05 BETWEEN D-27 AND 1A-04
125-FU--SO2705F2	3.108E-006	4	125 VDC FUSE (-) D72-27-05 BETWEEN D-27 AND 1A-04
125-FU--SO2706F1	3.108E-006	4	125 VDC FUSE (+) D72-27-06 BETWEEN D-27 AND 1A-03
125-FU--SO2706F2	3.108E-006	4	125 VDC FUSE (-) D72-27-06 BETWEEN D-27 AND 1A-03
125-FU--SO2708F1	3.108E-006	4	125 VDC FUSE (+) D72-27-08 BETWEEN D-27 AND 1A-05
125-FU--SO2708F2	3.108E-006	4	125 VDC FUSE (-) D72-27-08 BETWEEN D-27 AND 1A-05
125-FU--SO2709F1	3.108E-006	4	125 VDC FUSE (+) D72-27-09 BETWEEN D-27 AND 1B-02
125-FU--SO2709F2	3.108E-006	4	125 VDC FUSE (-) D72-27-09 BETWEEN D-27 AND 1B-02
125-FU--SO2710F1	3.108E-006	4	125 VDC FUSE (+) D72-27-10 BETWEEN D-27 AND 1B-01
125-FU--SO2710F2	3.108E-006	4	125 VDC FUSE (-) D72-27-10 BETWEEN D-27 AND 1B-01
125-FU--SO2711F1	3.108E-006	4	125 VDC FUSE (+) D72-27-11 BETWEEN D-27 AND 1B-04
125-FU--SO2711F2	3.108E-006	4	125 VDC FUSE (-) D72-27-11 BETWEEN D-27 AND 1B-04
125-FU--SO2712F1	3.108E-006	4	125 VDC FUSE (+) D72-27-12 BETWEEN D-27 AND 1B-03
125-FU--SO2712F2	3.108E-006	4	125 VDC FUSE (-) D72-27-12 BETWEEN D-27 AND 1B-03

125-FU--SO2801F1	3.108E-006	4	125 VDC FUSE (+) D72-28-01 BETWEEN D-28 AND G-03 CP
125-FU--SO2801F2	3.108E-006	4	125 VDC FUSE (-) D72-28-01 BETWEEN D-28 AND G-03 CP
125-FU--SO2803F1	3.108E-006	4	125 VDC FUSE (+) D72-28-03 BETWEEN D-28 AND G-03 FF
125-FU--SO2803F2	3.108E-006	4	125 VDC FUSE (-) D72-28-03 BETWEEN D-28 AND G-03 FF
125-FU--SO2804F1	3.108E-006	4	125 VDC FUSE (+) D72-2804 BETWEEN D-28 AND 1A-06
125-FU--SO2804F2	3.108E-006	4	125 VDC FUSE (-) D72-2804 BETWEEN D-28 AND 1A-06
125-FU--SO2813F1	3.108E-006	4	125 VDC FUSE (+) D72-28-13 BETWEEN D-28 AND D-40
125-FU--SO2813F2	3.108E-006	4	125 VDC FUSE (-) D72-28-13 BETWEEN D-28 AND D-40
125-FU--SO3011F1	3.108E-006	4	125 VDC FUSE (+)
125-FU--SO3011F2	3.108E-006	4	125 VDC FUSE (-)
125-FU--SO3013F1	3.108E-006	4	125 VDC FUSE (+)
125-FU--SO3013F2	3.108E-006	4	125 VDC FUSE (-)
125-FU--SO3022F1	3.108E-006	4	125 VDC FUSE (+) D72-302-02 BETWEEN D-302 AND D-03
125-FU--SO3022F2	3.108E-006	4	125 VDC FUSE (-) D72-302-02 BETWEEN D-302 AND D-03
125-FU--SO3023F1	3.108E-006	4	125 VDC FUSE (+) D72-302-03-F1 BTWN D302 AND D04
125-FU--SO3023F2	3.108E-006	4	125 VDC FUSE (-) D72-302-03-F2 BTWN D302 AND D04
125-FU--SO3102A1	3.108E-006	4	125 VDC FUSE (+) D72-31-02 BETWEEN D-31 AND D-50
125-FU--SO3102A2	3.108E-006	4	125 VDC FUSE (-) D72-31-02 BETWEEN D-31 AND D-50
125-FU--SO3102B1	3.108E-006	4	125 VDC FUSE (+) D-3102B BETWEEN D-50 AND D-51
125-FU--SO3102B2	3.108E-006	4	125 VDC FUSE (-) D-3102B BETWEEN D-50 AND D-51
125-FU--SO3102C1	3.108E-006	4	125 VDC FUSE (+) D3102C BETWEEN D-50 AND D-52
125-FU--SO3102C2	3.108E-006	4	125 VDC FUSE (-) D3102C BETWEEN D-50 AND D-52
125-FU--SO3102D1	3.108E-006	4	125 VDC FUSE (+) D-3012D BETWEEN D-50 AND D-53
125-FU--SO3102D2	3.108E-006	4	125 VDC FUSE (-) D-3102D BETWEEN D-50 AND D-53
125-FU--SO3103F1	3.108E-006	4	125 VDC FUSE (+) D72-31-03 BETWEEN D-31 AND B-09
125-FU--SO3103F2	3.108E-006	4	125 VDC FUSE (-) D72-31-03 BETWEEN D-31 AND B-09
125-FU--SO3104F1	3.108E-006	4	125 VDC FUSE (+) D72-31-04 BETWEEN D-31 AND B-08
125-FU--SO3104F2	3.108E-006	4	125 VDC FUSE (-) D72-31-04 BETWEEN D-31 AND B-08
125-FU--SO3108F1	3.108E-006	4	125 VDC FUSE (+) D72-31-08 BETWEEN D-31 AND G-02 CP
125-FU--SO3108F2	3.108E-006	4	125 VDC FUSE (-) D72-31-08 BETWEEN D-31 AND G-02 CP
125-FU--SO3109F1	3.108E-006	4	125 VDC FUSE (+) D72-31-09 BETWEEN D-31 AND 2A-05
125-FU--SO3109F2	3.108E-006	4	125 VDC FUSE (-) D72-31-09 BETWEEN D-31 AND 2A-05
125-FU--SO3110F1	3.108E-006	4	125 VDC FUSE (+) D72-31-10 BETWEEN D-31 AND G-02 FF
125-FU--SO3110F2	3.108E-006	4	125 VDC FUSE (-) D72-31-10 BETWEEN D-31 AND G-02 FF
125-FU--SO3112F1	3.108E-006	4	125 VDC FUSE (+) D72-31-12 BETWEEN D-31 AND 2B-03
125-FU--SO3112F2	3.108E-006	4	125 VDC FUSE (-) D72-31-12 BETWEEN D-31 AND 2B-03
125-FU--SO4001F1	3.108E-006	4	125 VDC FUSE (+) D72-40-01 BETWEEN D-40 AND G-04 CP

125-FU--SO4001F2	3.108E-006	4	125 VDC FUSE (-) D72-40-01 BETWEEN D-40 AND G-04 CP
125-FU--SO4003F1	3.108E-006	4	125 VDC FUSE (+) D72-40-03 BETWEEN D-40 AND G-04 FF
125-FU--SO4003F2	3.108E-006	4	125 VDC FUSE (-) D72-40-03 BETWEEN D-40 AND G-04 FF
125-FU--SO4004F1	3.108E-006	4	125 VDC FUSE (+) D72-4004 BETWEEN D-40 AND 2A-06
125-FU--SO4004F2	3.108E-006	4	125 VDC FUSE (-) D72-4004 BETWEEN D-40 AND 2A-06
125-FU--SO4013F1	3.108E-006	4	125 VDC FUSE (+) D72-40-13 BETWEEN D-40 TO D-28
125-FU--SO4013F2	3.108E-006	4	125 VDC FUSE (-) D72-40-13 BETWEEN D-40 AND D-28
125-FU--SO4102A1	3.108E-006	4	125 VDC FUSE (+) D72-41-02 BETWEEN D-41 AND D-49
125-FU--SO4102A2	3.108E-006	4	125 VDC FUSE (-) D72-41-02 BETWEEN D-41 AND D-49
125-FU--SO4102B1	3.108E-006	4	125 VDC FUSE (+) D-4102B BETWEEN D-49 AND D-51
125-FU--SO4102B2	3.108E-006	4	125 VDC FUSE (-) D-4102B BETWEEN D-49 AND D-51
125-FU--SO4102C1	3.108E-006	4	125 VDC FUSE (+) D4102C BETWEEN D-49 AND D-52
125-FU--SO4102C2	3.108E-006	4	125 VDC FUSE (-) D4012C BETWEEN D-49 AND D-52
125-FU--SO4102D1	3.108E-006	4	125 VDC FUSE (+) D-4102D BETWEEN D-49 AND D-53
125-FU--SO4102D2	3.108E-006	4	125 VDC FUSE (-) D-4102D BETWEEN D-49 AND D-53
125-FU--SO4103F1	3.108E-006	4	125 VDC FUSE (+) D72-41-03 BETWEEN D-41 AND B-09
125-FU--SO4103F2	3.108E-006	4	125 VDC FUSE (-) D72-41-03 BETWEEN D-41 AND B-09
125-FU--SO4104F1	3.108E-006	4	125 VDC FUSE (+) D72-41-04 BETWEEN D-41 AND B-08
125-FU--SO4104F2	3.108E-006	4	125 VDC FUSE (-) D72-41-04 BETWEEN D-41 AND B-08
125-FU--SO4112F1	3.108E-006	4	125 VDC FUSE (+) D72-41-12 BETWEEN D-41 AND 1B-04
125-FU--SO4112F2	3.108E-006	4	125 VDC FUSE (-) D72-41-12 BETWEEN D-41 AND 1B-04
125-FU--SO5106F1	3.108E-006	4	125 VDC FUSE (+) D-5106 BETWEEN D-51 AND H-01
125-FU--SO5106F2	3.108E-006	4	125 VDC FUSE (-) D-5106 BETWEEN D-51 AND H-01
125-FU--SO5206F1	3.108E-006	4	125 VDC FUSE (+) D-5206 BETWEEN D-52 AND H-02
125-FU--SO5206F2	3.108E-006	4	125 VDC FUSE (-) D-5206 BETWEEN D-52 AND H-02
125-FU--SO5306F1	3.108E-006	4	125 VDC FUSE (+) D-5306 BETWEEN D-53 AND H-03
125-FU--SO5306F2	3.108E-006	4	125 VDC FUSE (-) D-5306 BETWEEN D-53 AND H-03
125-HEP--D04-D28	3.500E-002	3	OPERATOR FAILS TO TRANSFER PWR FROM D04 TO D28
125-HEP--D04-D40	3.500E-002	3	OPERATOR FAILS TO TRANSFER PWR FROM D-04 TO D-40
125-HEP--D49-D51	3.500E-002	3	OPERATOR FAILS TO TRANSFER PWR FROM D-49 TO D-51
125-HEP--D49-D52	3.500E-002	3	OPERATOR FAILS TO TRANSFER PWR FROM D-49 TO D-52
125-HEP--D49-D53	3.500E-002	3	OPERATOR FAILS TO TRANSFER POWER FROMD-49 TO D-53
125-HEP--D50-D51	3.500E-002	3	OPERATOR FAILS TO TRANSFER PWR FROM D50 TO D-51
125-HEP--D50-D52	3.500E-002	3	OPERATOR FAILS TO TRANSFER PWR FROM D-50 TO D-52
125-HEP--D50-D53	3.500E-002	3	OPERATOR FAILS TO TRANSFER POWER FROMD50 TO D-53
125-HEP-1B32D302	3.500E-002	3	OPERATOR FAILS TO ALIGN BUS 1B-32 TO D-302
125-HEP-1B49D301	3.500E-002	3	OPERATOR FAILURE TOALIGN 1B49 TO D301

125-HEP-2B39D301	3.500E-002	3	OPERATOR FAILURE TOALIGN 2B-39 TO D-301
125-HEP-2B42D302	3.500E-002	3	OPERATOR FAILS TO ALIGN 2B42 TO D-302
125-HEP-B81-D302	3.500E-002	3	OPERATOR FAILS TO ALIGN BUS B-81 TO D-302
125-HEP-D05--D01	3.500E-002	3	OPERATOR FAILURE TO ALIGN D-05 TO D-01
125-HEP-D06--D02	3.500E-002	3	OPERATOR FAILURE TO ALIGN D-06 TO D-02
125-HEP-D105-D03	3.500E-002	3	OPERATOR FAILURE TO ALIGN D-105 TO D-03
125-HEP-D106-D04	3.500E-002	3	OPERATOR FAILURE TO ALIGN D-106 TO D-04
125-HEP-D14-D40	3.500E-002	3	FAILURE OF OPERATORTO ALIGN D-14 TO BUS D-40
125-HEP-D28-D40	3.500E-002	3	FAILURE OF OPERATORTO ALIGN D-28 TO BUS D-40
125-HEP-D305-D01	1.000E-003	3	OPERATOR FAILS TO ALLIGN D-305 TO BUS D-01
125-HEP-D305-D02	1.000E-003	3	OPERATOR FAILS TO ALIGN D-305 TO BUS D-02
125-HEP-D305-D03	1.000E-003	3	OPERATOR FAILS TO ALIGN D-305 TO BUS D-03
125-HEP-D305-D04	1.000E-003	3	OPERATOR FAILS TO ALIGN D-305 TO BUS D-04
125-HEP-EOP10-08	4.200E-003	3	NO BATTERY CHARGER AFTER UV + POWER RECOVERY
125-INV-CM-D0708	1.980E-006	3	CCF OF BATTERY CHARGERS D07 - D08
125-INV-CM-D0709	1.980E-006	3	COMMON MODE FAILUREBATTERY CHARGERS D07 AND D09
125-INV-CM-D0789	5.520E-007	3	COMMON MODE FAILUREBATTERY CHARGERS D07/ D08/ D09
125-INV-CM-D0809	1.980E-006	3	COMMON MODE FAILUREBATTERY CHARGERS D08 AND D09
125-INV-CMD10708	1.980E-006	3	COMMON MODE FAILUREBATTERY CHARGERS D-107 AND D-108
125-INV-CMD10709	1.980E-006	3	COMMON MODE FAILUREBATTERY CHARGERS D-107 AND D-109
125-INV-CMD10789	5.520E-007	3	COMMON MODE FAILUREBATTERY CHARGERS D-107/ D-108/ D-109
125-INV-CMD10809	1.980E-006	3	COMMON MODE FAILUREBATTERY CHARGERS D-108 AND D-109
125-INV-LP--0D07	2.205E-004	4	BATTERY CHARGER D07LOSS OF POWER
125-INV-LP--0D08	2.205E-004	4	BATTERY CHARGER D08LOSS OF POWER
125-INV-LP--D107	2.205E-004	4	BATTERY CHARGER D-107 LOSS OF POWER
125-INV-LP--D108	2.205E-004	4	BATTERY CHARGER D-108 LOSS OF POWER
125-INV-LP-00D07	2.205E-004	4	BATTERY CHARGER D07FAILS
125-INV-LP-00D08	2.205E-004	4	BATTERY CHARGER D08FAILS
125-INV-LP-00D17	2.205E-004	4	BATTERY CHARGER D107 FAILS
125-SW--CO--D51A	0.000E+000	4	KNIFE SWITCH D-51A FAILS OPEN
125-SW--CO--D52A	0.000E+000	4	KNIFE SWITCH D-52A FAILS OPEN
125-SW--CO--D53A	0.000E+000	4	KNIFE SWITCH D-53A FAILS OPEN
125-SWG-LP--B500	2.400E-006	4	125 SWITCHGEAR B500 FAILS
1251BAT-CM---1-2	6.700E-009	3	D-05 D-06
1251BAT-CM---1-5	6.700E-009	3	D-05 D-305
1251BAT-CM---2-5	6.700E-009	3	D-06 D-305
1251BAT-CM---3-4	1.690E-008	3	D-105 D-106

1251BAT-CM-1-2-5	8.390E-009	3	D-05 D-06 D-305
1251BAT-LP---D05	1.716E-006	4	125 VDC BATTERY D-05 LOSS OF POWER
1251BAT-LP---D06	1.716E-006	4	125 VDC BATTERY D-06 LOSS OF POWER
1251BAT-LP--D105	1.716E-006	4	125 VDC BATTERY D-105 LOSS OF POWER
1251BAT-LP--D106	1.716E-006	4	125 VDC BATTERY D-106 LOSS OF POWER
1251BAT-LP--D501	1.716E-006	4	125 VDC BATTERY D-501 FOR G-05
1251BKR-CO-D3011	3.171E-007	4	125 VDC BREAKER D72-3011 BETWEEN D-01 AND D-301
1251BKR-CO-D3013	3.171E-007	4	125 VDC BREAKER D72-3013 BETWEEN D-02 AND D-301
1251BKR-OO-D3011	5.727E-004	3	125 VDC BREAKER D72-3011 BETWEEN D-01 AND D-301
1251BKR-OO-D3013	5.727E-004	3	125 VDC BREAKER D72-3013 BETWEEN D-02 AND D-301
1251BS--LP---D01	1.000E-007	4	125 VDC BUS D-01 FAILS 1 HOUR MISSION TIME
1251BS--LP---D02	1.000E-007	4	125 VDC BUS D-02 FAILS 1 HOUR MISSION TIME
1251BS--LP---D04	1.000E-007	4	125 VDC BUS D-04 FAILS
1251BS--LP---D11	1.000E-007	4	125 VDC DIST PANEL D-11 FAILS
1251BS--LP---D12	1.000E-007	4	125 VDC DIST PANEL D-12 FAILS
1251BS--LP---D13	1.000E-007	4	125 VDC DIST PANEL D-13 FAILS
1251BS--LP---D14	1.000E-007	4	125 VDC DIST PANEL D-14 FAILS
1251BS--LP---D27	1.000E-007	4	125 VDC DIST PANEL D-27 FAILS
1251BS--LP---D28	1.000E-007	4	125 VDC DIST PANEL D-28 FAILS
1251BS--LP---D31	1.000E-007	4	125 VDC DIST PANEL D-31 FAILS
1251BS--LP---D40	1.000E-007	4	125 VDC DIST PANEL D-40 FAILS
1251BS--LP---D41	1.000E-007	4	125 VDC DIST PANEL D-41 FAILS
1251BS--LP--D305	1.000E-007	4	125 VDC BUS BATTERY D305 LOSS OF POWER
1251BS--LP-00D03	1.000E-007	4	125 VDC BUS D-03 FAILS 1 HOUR MISSION TIME
1251BS--LP-0D305	1.000E-007	4	125 VDC BUS BATTERY D305 LOSS OF POWER
1251FU--SO0101F1	1.295E-007	4	125 VDC FUSE (+) D72-01-01 BTWN D-05 AND D-01
1251FU--SO0101F2	1.295E-007	4	125 VDC FUSE (-) D72-01-01 BETWEEN D-05 AND D-01
1251FU--SO0106F1	1.295E-007	4	125 VDC FUSE (+) D72-01-06 BETWEEN D-01 AND D-12
1251FU--SO0106F2	1.295E-007	4	125 VDC FUSE (-) D72-01-06 BETWEEN D-01 AND D-12
1251FU--SO0108F1	1.295E-007	4	125 VDC FUSE (+) D72-01-08 BETWEEN D-01 AND D-11
1251FU--SO0108F2	1.295E-007	4	125 VDC FUSE (-) D72-01-08 BETWEEN D-01 AND D-11
1251FU--SO0201F1	1.295E-007	4	125 VDC FUSE (+) D72-02-01 BTWN D-06 AND D-02
1251FU--SO0201F2	1.295E-007	4	125 VDC FUSE (-) D72-02-01 BETWEEN D-08 AND D-06
1251FU--SO0203F1	1.295E-007	4	125 VDC FUSE (+) D72-02-03 BETWEEN D-02 AND D-27
1251FU--SO0203F2	1.295E-007	4	125 VDC FUSE (-) D72-02-03 BETWEEN D-02 AND D-27
1251FU--SO0206F1	1.295E-007	4	125 VDC FUSE (+) D72-02-06 BETWEEN D-02 AND D-14
1251FU--SO0206F2	1.295E-007	4	125 VDC FUSE (-) D72-02-06 BETWEEN D-02 AND D-14

1251FU--SO0208F1	1.295E-007	4	125 VDC FUSE (+) D72-02-08 BETWEEN D-02 AND D-13
1251FU--SO0208F2	1.295E-007	4	125 VDC FUSE (-) D72-02-08 BETWEEN D-02 AND D-13
1251FU--SO0303F1	1.295E-007	4	125 VDC FUSE (+) D72-03-03 BETWEEN D-105 AND D-03
1251FU--SO0303F2	1.295E-007	4	125 VDC FUSE (-) D72-03-03 BETWEEN D-107 AND D-105
1251FU--SO0304F1	1.295E-007	4	125 VDC FUSE (+) D72-03-04 BETWEEN D-302 AND D-03
1251FU--SO0304F2	1.295E-007	4	125 VDC FUSE (-) D72-03-04 BETWEEN D-302 AND D-03
1251FU--SO0307F1	1.295E-007	4	125 VDC FUSE (+) D72-03-07 BETWEEN D-03 AND D-31
1251FU--SO0307F2	1.295E-007	4	125 VDC FUSE (-) D72-03-07 BETWEEN D-03 AND D-31
1251FU--SO0403F1	1.295E-007	4	125 VDC FUSE (+) D72-04-03-F1 BTWN D302 AND D04
1251FU--SO0403F2	1.295E-007	4	125 VDC FUSE (-) D72-04-03-F2 BTWN D302 AND D04
1251FU--SO0404F1	1.295E-007	4	125 VDC FUSE (+) D72-04-04 BETWEEN D-106 AND D-04
1251FU--SO0404F2	1.295E-007	4	125 VDC FUSE (-) D72-04-04 BETWEEN D-108 AND D-106
1251FU--SO0406F1	1.295E-007	4	125 VDC FUSE (+) D72-04-06 BETWEEN D-04 TO D-28
1251FU--SO0406F2	1.295E-007	4	125 VDC FUSE (-) D72-04-06 BETWEEN D-04 AND D-28
1251FU--SO0408F1	1.295E-007	4	125 VDC FUSE (+) D72-04-08 BETWEEN D-04 AND D-41
1251FU--SO0408F2	1.295E-007	4	125 VDC FUSE (-) D72-04-08 BETWEEN D-04 AND D-41
1251FU--SO1402F1	1.295E-007	4	125 VDC FUSE (+) D72-14-02 BETWEEN D-14 AND D-40
1251FU--SO1402F2	1.295E-007	4	125 VDC FUSE (-) D72-14-18 BETWEEN D-14 AND D-40
1251FU--SO2813F1	1.295E-007	4	125 VDC FUSE (+) D72-28-13 BETWEEN D-28 AND D-40
1251FU--SO2813F2	1.295E-007	4	125 VDC FUSE (-) D72-28-13 BETWEEN D-28 AND D-40
1251FU--SO3015F1	1.295E-007	4	125 VDC FUSE (+) D72-3015 BTWN D-05 AND D-01
1251FU--SO3015F2	1.295E-007	4	125 VDC FUSE (-) D72-3015 BTWN D-05 AND D-01
1251FU--SO3016F1	1.295E-007	4	125 VDC FUSE (+) D72-3016 BTWN D-305 AND D-302
1251FU--SO3016F2	1.295E-007	4	125 VDC FUSE (-) D72-3016 BTWN D-305 AND D-302
1251FU--SO3021F1	1.295E-007	4	125 VDC FUSE (+) D72-302-01 BTWN D-305 AND D-302
1251FU--SO3021F2	1.295E-007	4	125 VDC FUSE (-) D72-302-01 BTWN D-305 AND D-302
1251FU--SO3022F1	1.295E-007	4	125 VDC FUSE (+) D72-302-02 BTWN D-305 AND D-302
1251FU--SO3022F2	1.295E-007	4	125 VDC FUSE (-) D72-302-02 BTWN D-305 AND D-302
1251FU--SO4013F1	1.295E-007	4	125 VDC FUSE (+) D72-40-13 BETWEEN D-40 TO D-28
1251FU--SO4013F2	1.295E-007	4	125 VDC FUSE (-) D72-40-13 BETWEEN D-40 AND D-28
138-BKR-CO-H5205	7.611E-006	4	13.8 KV BKR 0H52-05BETWEEN 1X-03 AND 0H-02
138-BKR-CO-H5206	7.611E-006	4	13.8 KV BKR 0H52-06BETWEEN 2X-03 AND 0H-03
138-BKR-CO-H5210	7.611E-006	4	13.8 KV BKR 0H52-10BETWEEN G-05 AND 0H-01
138-BKR-CO-H5211	7.611E-006	4	13.8K V BREAKER H52-11 FROM BUS H01 TO B-08
138-BKR-CO-H5220	7.611E-006	4	13.8 KV BKR 0H52-20BETWEEN 1X-03 AND 0H-02
138-BKR-CO-H5221	7.611E-006	4	BREAKER H52-21 BETWEEN H-02 AND H-01
138-BKR-CO-H5222	7.611E-006	4	13.8 KV BKR H52-22 BETWEEN H-02 AND 1X-04

138-BKR-CO-H5230	7.611E-006	4	13.8 KV BKR 0H52-30BETWEEN 2X-03 AND 0H-03
138-BKR-CO-H5231	7.611E-006	4	BREAKER H52-31 BETWEEN H-03 AND H-01
138-BKR-CO-H5232	7.611E-006	4	13.8 KV BKR H52-32 BETWEEN H-03 AND 2X-04
138-BKR-COH52G05	7.611E-006	4	13.8 KV BKR H52-G05BETWEEN G-05 AND 0H-01
138-BKR-OO-H5221	5.727E-004	3	BREAKER H52-21 BETWEEN H-02 AND H-01
138-BKR-OO-H5231	5.727E-004	3	BREAKER H52-31 BETWEEN H-03 AND H-01
138-BKR-OOH52-10	5.727E-004	3	13.8 KV BKR H52-10 BETWEEN G-05 AND 0H-01
138-BKR-OOH52G05	5.727E-004	3	13.8 KV BKR H52-G05BETWEEN G-05 AND 0H-01
138-BS--LP---H01	2.400E-006	4	13.8 KV BUS H-01 FAILS
138-BS--LP---H02	2.400E-006	4	13.8 KV SWITCHGEAR -H-02 FAILS
138-BS--LP---H03	2.400E-006	4	13.8 KV BUS H-03 FAILS
138-BS--LP--1H04	2.400E-006	4	13.8 KV BUS 2H-04 FAILS
138-BS--LP--1H05	2.400E-006	4	13.8 KV BUS 1H-05 BETWEEN 1X-03 AND BUS H-02
138-BS--LP--2H04	2.400E-006	4	13.8 KV BUS 2H-04 FAILS
138-BS--LP--2H06	2.400E-006	4	13.8 KV BUS 2H-06 BETWEEN 2X-03 AND BUS H-03
138-BS--TM---H01	0.000E+000	3	BUS H-01 TEST OR MAINTENANCE
138-BS--TM---H02	0.000E+000	3	13.8 KV BUS UNAVAIL. DUE TO TEST OR MAINTENANCE
138-BS--TM---H03	3.560E-003	3	13.8 KV BUS UNAVAIL. DUE TO TEST OR MAINTENANCE
138-BS--TM--1H04	0.000E+000	3	4160 VAC BUS 1H-04 UNAVAILABLE DUE TO TEST OR MAINTENANCE
138-BS--TM--2H04	0.000E+000	3	4160 VAC BUS 2H-04 UNAVAILABLE DUE TO TEST OR MAINTENANCE
138-GT--FR---G05	1.649E-002	4	GAS TURBINE G-05 FEEDING H-01
138-GT--FS---G05	5.560E-002	3	GAS TURBINE G-05 FEEDING H-01
138-GT--TM---G05	5.180E-002	3	GAS TURBINE G-05 FEEDING H-01
138-HEP-H21-CLSE	5.500E-003	3	OPERATOR FAILURE TOCLOSE BREAKER H52-21 ONTO LINE
138-HEP-H31-CLSE	5.300E-003	3	OPERATOR FAILURE TOCLOSE BREAKER H52-31 ONTO LINE
138-HEP-STARTG05	1.300E-001	3	OPERATOR FAILS TO START GAS TURBINE G-05
138-X---LP---X08	1.942E-005	4	TRANSFORMER X-08 FAILS
138-X---LP--1X03	1.942E-005	4	345 TO 13.8 KV HIGH VOLTAGE SAT
138-X---LP--2X03	1.942E-005	4	345 TO 13.8 KV HIGH VOLTAGE SAT
19K-TG--LP-1TG01	6.106E-002	4	UNIT 1 TURBINE GENERATOR TRIPS DURING 24 HR PERIOD
19K-TG--LP-2TG01	6.106E-002	4	UNIT 2 TURBINE GENERATOR TRIPS DURING 24 HR PERIOD
19K-X---LP--1X02	1.942E-005	4	UNIT AUXILIARY TRANSFORMER 1X-02 FAILS
19K-X---LP--2X02	1.942E-005	4	UNIT AUXILIARY TRANSFORMER 2X-02 FAILS
24HR-1YR-DIVIDER	2.740E-003	3	DEVIDES BE BY 365 TO ACCOUNT FOR 365 MULT IN INIT
345-BKR-CO-52122	7.611E-006	4	UNIT 1 MAIN GENERATOR BREAKER 1F52-122 NCFO
345-BKR-CO-52142	7.611E-006	4	UNIT 2 MAIN GENERATOR BREAKER 2F52-142 NCFO
345-GRD-LP--LOSP	1.420E-003	4	LOSS OF OFFSITE POWER AFTER PLANT TRIP

345-SW--CO89122B	0.000E+000	4	UNIT 1 TG DISCONNECT SWITCH 1F89-122B NCFO
345-SW--CO89142B	0.000E+000	4	UNIT 2 TG DISCONNECT SWITCH 2F89-142B NCFO
345-X---LP--1X01	1.942E-005	4	MAIN STEP UP TRANSFORMER 1X-01 FAILS
345-X---LP--2X01	1.942E-005	4	MAIN STEP UP TRANSFORMER 2X-01 FAILS
416-BKR-CC1A5257	5.727E-004	3	BREAKER 1A52-57 FAILS TO OPEN TO SHED LOADS
416-BKR-CC1A5277	5.727E-004	3	1A52-77 FAILS TO OPEN TO SHED LOADS BTWN 1A06-1A04
416-BKR-CC2A5276	5.727E-004	3	BREAKER 2A52-76 FAILS TO OPEN TO SHED LOADS
416-BKR-CC2A5296	5.727E-004	3	BREAKER 2A52-96 FAILS TO OPEN TO SHED LOADS
416-BKR-CMCC5776	2.210E-005	3	BREAKERS 1A52-57 (1A-03/1A-05) AND 2A52-76 (2A-3/2A-5)
416-BKR-CMCC7796	2.210E-005	3	BREAKERS 1A52-77 2A52-96
416-BKR-CMOO--12	3.940E-006	3	2A52-73 (2A-05) 2A52-67 (2A-05)
416-BKR-CMOO--34	3.940E-006	3	2A52-87 (2A-06) 2A52-93 (2A-06)
416-BKR-CMOO-2-2	3.940E-006	3	BREAKERS 1A52-66 AND 2A52-67 TO 1A-05 AND 2A-05
416-BKR-CMOO-21-	3.940E-006	3	BREAKERS 1A52-66 AND 2A52-73 TO 1A-05 AND 2A-05
416-BKR-CMOO-212	2.970E-006	3	BREAKERS 1 A52-66 (1A-05) 2A52-73 2A52 -67 (2A-05)
416-BKR-CMOO-4-4	3.940E-006	3	1A52-86 (1A-06) 2A52-93 (2A-06)
416-BKR-CMOO-43-	3.940E-006	3	1A52-86 (1A-06) 2A52-87 (2A-06)
416-BKR-CMOO-434	2.970E-006	3	1A52-86 (1A-06) 2A52-87 (2A-06) 2A52-93 (2A-06)
416-BKR-CMOO1--2	3.940E-006	3	1A52-60 (1A-05) 2A52-67 (2A-05)
416-BKR-CMOO1-1-	3.940E-006	3	1A52-60 (1A-05) 2A52-73 (2A-05)
416-BKR-CMOO1-12	2.970E-006	3	1A52-60 (1A-05) 2A52-73 (2A-05) 2A52-67 (2A-05)
416-BKR-CMOO12--	3.940E-006	3	1A52-60 (1A05) 1A52-66 (1A-05)
416-BKR-CMOO12-2	2.970E-006	3	1A52-60 (1A-05) 1A52-66 (1A-05) 1A52-67 (2A-05)
416-BKR-CMOO121-	2.970E-006	3	1A52-60 (1A-05) 1A52-66 (1A-05) 2A52-73 (2A-05)
416-BKR-CMOO1212	8.980E-006	3	1A52-60/66 (1A-05) 2A52-73 (2A-05) 2A52-67 (2A-05)
416-BKR-CMOO3--4	3.940E-006	3	1A52-80 (1A-06) 2A52-93 (2A-06)
416-BKR-CMOO3-3-	3.940E-006	3	1A52-80 (1A-06) 2A52-87 (2A-06)
416-BKR-CMOO3-34	2.970E-006	3	1A52-80 (1A-06) 2A52-87 (2A-06) 2A52-93 (2A-06)
416-BKR-CMOO34--	3.940E-006	3	1A52-80 (1A-06) 1A52-86 (1A-06)
416-BKR-CMOO34-4	2.970E-006	3	1A52-80 (1A-06) 1A52-86 (1A-06) 2A52-93 (2A-06)
416-BKR-CMOO343-	2.970E-006	3	1A52-80 (1A-06) 1A52-86 (1A-06) 2A52-87 (2A-06)
416-BKR-CMOO3434	8.980E-006	3	1A52-80/86 (1A-06) 2A52-87/93 (2A-06)
416-BKR-CMOO3755	2.210E-005	3	CM FAILURE TO CLOSEOF 4KV BKRS 1A52-37AND 1A52--55
416-BKR-CMOO4448	2.210E-005	3	2A52-44 (2A03-2A01)2A52-48 (2A04-2A02)
416-BKR-CO-1A558	7.611E-006	4	4160 V BREAKER 1A52-58 TRANSFERS OPEN
416-BKR-CO-1A581	2.537E-006	4	CIRCUIT BREAKER 1A52-81 FAILS OPEN
416-BKR-CO-2A575	7.611E-006	4	4160 V BREAKER 2A52-75 TRANSFERS OPEN

416-BKR-CO-2A592	7.611E-006	4	4160 V BREAKER 2A52-92 TRANSFERS OPEN
416-BKR-CO-A5215	7.611E-006	4	BREAKER 1A52-15 FAILS TO REMAIN CLOSED
416-BKR-CO-A5248	7.611E-006	4	BREAKER 2A52-48 BETWEEN 2A-04 AND 2A-02
416-BKR-CO-A5258	7.611E-006	4	4160 VAC BKR A5258 1A05 TO 1X13 (1B03)NCFO
416-BKR-CO-A5264	7.611E-006	4	4160 VAC BKR A5264 1A06 TO 1X14 (1B04)NCFO
416-BKR-CO-A5269	7.611E-006	4	4160 VAC BKR A5269 2A06 TO 2X14 (2B04)NCFO
416-BKR-CO-A5275	7.611E-006	4	4160 VAC BKR A5275 2A05 TO 2X13 (2B03)NCFO
416-BKR-CO1A5201	7.611E-006	4	BREAKER 1A52-01 BETWEEN 1A-01 AND 1X-02
416-BKR-CO1A5217	7.611E-006	4	BREAKER 1A52-17 TO 1A-02 FROM 1X-02 FAILS OPEN
416-BKR-CO1A5236	7.611E-006	4	BREAKER 1A52-36 BETWEEN 1X-04 AND 1A-03
416-BKR-CO1A5237	7.611E-006	4	BREAKER 1A52-37 BETWEEN 1A-03 AND 1A-01
416-BKR-CO1A5240	7.611E-006	4	BREAKER 1A52-40 BETWEEN 2A-03 AND 1A-03 CROSSTIE
416-BKR-CO1A5252	7.611E-006	4	BREAKER 1A52-52 CROSSTIE BTWN 2A-04 AND 1A-04
416-BKR-CO1A5254	7.611E-006	4	BREAKER 1A52-54 BETWEEN 1A-04 AND 1A-06
416-BKR-CO1A5255	7.611E-006	4	BREAKER 1A52-55 BETWEEN 1A-04 AND 1A-02
416-BKR-CO1A5256	7.611E-006	4	BREAKER 1A52-56 BETWEEN 1X-04 AND 1A-04
416-BKR-CO1A5257	7.611E-006	4	BREAKER 1A52-57 BETWEEN 1A-03 AND 1A-05
416-BKR-CO1A5258	7.611E-006	4	4.16 KV BKR 1A52-58FROM BUS 1A-05 TO TRANSFORMER 1X-13
416-BKR-CO1A5260	7.611E-006	4	BREAKER 1A52-60 BETWEEN G-01 TO 1A-05
416-BKR-CO1A5266	7.611E-006	4	BREAKER 1A52-66 BETWEEN G-02 AND 1A-05
416-BKR-CO1A5277	7.611E-006	4	BREAKER 1A52-77 BETWEEN 1A-04 AND 1A-06
416-BKR-CO1A5280	7.611E-006	4	BREAKER 1A52-80 BTWN G-03 AND 1A-06
416-BKR-CO1A5281	7.611E-006	4	CIRCUIT BREAKER 1A52-81 FAILS OPEN
416-BKR-CO1A5284	7.611E-006	4	4.16 KV BKR 1A52-84FROM BUS 1A-06 TO TRANSFORMER 1X-14
416-BKR-CO1A5286	7.611E-006	4	BREAKER 1A52-86 BTWN G-04 AND 1A-06
416-BKR-CO2A5225	7.611E-006	4	4.16 KV BKR 2A52-25FROM BUS 2A-01 TO TRANSFORMER 2X-11
416-BKR-CO2A5226	7.611E-006	4	BREAKER 2A52-26 TO 2A-01 FROM 2X-02 FAILS OPEN
416-BKR-CO2A5227	7.611E-006	4	BREAKER 2A52-27 FROM 2X-02 TO 2A-02
416-BKR-CO2A5228	7.611E-006	4	4.16 KV BKR 2A52-28FROM BUS 2A-02 TO TRANSFORMER 2X-12
416-BKR-CO2A5244	7.611E-006	4	BREAKER 2A52-44 BETWEEN 2A-03 AND 2A-01
416-BKR-CO2A5245	7.611E-006	4	2A52-45 BETWEEN 2X-04 AND 2A-03
416-BKR-CO2A5247	7.611E-006	4	BREAKER 2A52-47 FROM 2X-04 TO 2A-04
416-BKR-CO2A5249	7.611E-006	4	BREAKER 2A52-49 FROM 2A-04 TO 2A-06
416-BKR-CO2A5267	7.611E-006	4	BREAKER 2A52-67 G-02 TO 2A-05
416-BKR-CO2A5273	7.611E-006	4	BREAKER 2A52-73 G-01 TO 2A-05
416-BKR-CO2A5275	7.611E-006	4	4.16 KV BKR 2A52-75FROM BUS 2A-05 TO TRANSFORMER 2X-13
416-BKR-CO2A5276	7.611E-006	4	BREAKER 2A52-76 FROM 2A-03 TO 2A-05

416-BKR-CO2A5287	7.611E-006	4	BREAKER A52-87 FROM G-03 TO 2A-06
416-BKR-CO2A5289	7.611E-006	4	4.16 KV BKR 2A52-89FROM BUS 2A-06 TO TRANSFORMER 2X-14
416-BKR-CO2A5292	7.611E-006	4	CIRCUIT BREAKER 2A52-92 BTWN 2A06 AND 2X06
416-BKR-CO2A5293	7.611E-006	4	BREAKER 2A52-93 FROM G-04 TO 2A-06
416-BKR-CO2A5296	7.611E-006	4	BREAKER 2A52-96 FROM 2A-04 TO 2A-06
416-BKR-OO-A5260	5.727E-004	3	4160 VAC BKR A52-60G-01 TO 1A-05 NOFO
416-BKR-OO-A5266	5.727E-004	3	BREAKER 1A52-66 BETWEEN G-02 AND 1A-05
416-BKR-OO-A5267	5.727E-004	3	4160 VAC BKR A52-67G-02 TO 2A-05 NOFO
416-BKR-OO-A5273	5.727E-004	3	4160 VAC BKR A52-73G-01 TO 2A-05 NOFO
416-BKR-OO-A5287	5.727E-004	3	4160 VAC BKR A52-87G-03 TO 2A-06 NOFO
416-BKR-OO-A5293	5.727E-004	3	4160 VAC BKR A52-93G-04 TO 2A-06 NOFO
416-BKR-OO1A5236	5.727E-004	3	BREAKER 1A52-36 BETWEEN 1X-04 AND 1A-03
416-BKR-OO1A5237	5.727E-004	3	BREAKER 1A52-37 1A-03 TO 1A-01 FAILS TO CLOSE
416-BKR-OO1A5240	5.727E-004	3	BREAKER 1A52-40 BETWEEN 2A-03 AND 1A-03 CROSSTIE
416-BKR-OO1A5252	5.727E-004	3	BREAKER 1A52-52 CROSSTIE BTWN 2A-04 AND 1A-04
416-BKR-OO1A5255	5.727E-004	3	BREAKER 1A52-55 BETWEEN 1A-04 AND 1A-02
416-BKR-OO1A5256	5.727E-004	3	BREAKER 1A52-56 BETWEEN 1X-04 AND 1A-04
416-BKR-OO1A5258	5.727E-004	3	4.16 KV BKR 1A52-58FROM BUS 1A-05 TO TRANSFORMER 1X-13
416-BKR-OO1A5280	5.727E-004	3	1A52-80 FROM G-03 TO 1A-06 NOFO
416-BKR-OO1A5284	5.727E-004	3	4.16 KV BKR 1A52-84FROM BUS 1A-06 TO TRANSFORMER 1X-14
416-BKR-OO1A5286	5.727E-004	3	1A52-86 FROM G-04 TO 1A-06
416-BKR-OO2A5225	5.727E-004	3	4 KV BKR 2A52-25 FROM 2X11 TO BUS 2B-01
416-BKR-OO2A5228	5.727E-004	3	4.16 KV BKR 2A52-28FROM BUS 2A-02 TO TRANSFORMER 2X-12
416-BKR-OO2A5244	5.727E-004	3	2A52-44 BETWEEN 2A-03 AND 2A-01
416-BKR-OO2A5245	5.727E-004	3	2A52-45 BETWEEN 2X-04 AND 2A-03
416-BKR-OO2A5247	5.727E-004	3	BREAKER 2A52-47 FROM 2X-04 TO 2A-04
416-BKR-OO2A5248	5.727E-004	3	BREAKER 2A52-48 BETWEEN 2A-04 AND 2A-02
416-BKR-OO2A5275	5.727E-004	3	4.16 KV BKR 2A52-75FROM BUS 2A-05 TO TRANSFORMER 2X-13
416-BKR-OO2A5289	5.727E-004	3	4.16 KV BKR 2A52-89FROM BUS 2A-06 TO TRANSFORMER 2X-14
416-BS--LP--1A01	2.400E-006	4	4160 VAC BUS 1A-01 FAILS
416-BS--LP--1A02	2.400E-006	4	4160 VAC BUS 1A-02 FAILS
416-BS--LP--1A03	2.400E-006	4	4160 VAC BUS 1A-03 FAILS
416-BS--LP--1A04	2.400E-006	4	4160 VAC BUS 1A-04 FAILS
416-BS--LP--1A05	2.400E-006	4	4160 VAC BUS 1A-05 FAILS
416-BS--LP--1A06	2.400E-006	4	4160 VAC BUS 1A-06 FAILS
416-BS--LP--2A01	2.400E-006	4	4160 VAC BUS 2A-01 FAILS
416-BS--LP--2A02	2.400E-006	4	4160 VAC SWGR 2A-022A-02 FAILS

416-BS--LP--2A03	2.400E-006	4	4160 VAC BUS 2A-03 FAILS
416-BS--LP--2A04	2.400E-006	4	4160 VAC BUS 2A-04 FAILS
416-BS--LP--2A05	2.400E-006	4	4160 VAC BUS 2A-05 FAILS
416-BS--LP--2A06	2.400E-006	4	4160 VAC BUS 2A-06 FAILS
416-BS--TM--1A01	0.000E+000	3	4160 VAC BUS 1A-01 UNAVAILABLE DUE TO TEST OR MAINTENANCE
416-BS--TM--1A02	0.000E+000	3	4160 VAC BUS 1A-02 UNAVAILABLE DUE TO TEST OR MAINTENANCE
416-BS--TM--1A03	0.000E+000	3	4160 VAC BUS 1A-03 UNAVAILABLE DUE TO TEST OR MAINTENANCE
416-BS--TM--1A04	0.000E+000	3	4160 VAC BUS 1A-04 UNAVAILABLE DUE TO TEST OR MAINTENANCE
416-BS--TM--1A05	0.000E+000	3	4160 VAC BUS 1A-05 UNAVAILABLE DUE TO TEST OR MAINTENANCE
416-BS--TM--1A06	0.000E+000	3	4160 VAC BUS 1A-06 UNAVAILABLE DUE TO TEST OR MAINTENANCE
416-BS--TM--2A01	6.610E-003	3	4160 VAC BUS 2A-01 UNAVAILABLE DUE TO TEST OR MAINTENANCE
416-BS--TM--2A02	6.610E-003	3	4160 VAC BUS 2A-02 UNAVAILABLE DUE TO TEST OR MAINTENANCE
416-BS--TM--2A03	0.000E+000	3	4160 VAC BUS 2A-03 UNAVAILABLE DUE TO TEST OR MAINTENANCE
416-BS--TM--2A04	0.000E+000	3	4160 VAC BUS 2A-04 UNAVAILABLE DUE TO TEST OR MAINTENANCE
416-BS--TM--2A05	0.000E+000	3	4160 VAC BUS 2A-05 UNAVAILABLE DUE TO TEST OR MAINTENANCE
416-BS--TM--2A06	0.000E+000	3	4160 VAC BUS 2A-06 UNAVAILABLE DUE TO TEST OR MAINTENANCE
416-HEP-1A032A03	1.000E-003	3	OPERATOR FAILS TO TRANSFER POWER FROM 1A-03 TO 2A-03
416-HEP-1A042A04	1.000E-003	3	OPERATOR FAILS TO TRANSFER POWER FROM 1A-04 TO 2A-04
416-HEP-1X041A03	1.000E-003	3	OPERATOR FAILS TO TRANSFER POWER FROM 1X-04 TO 1A-03
416-HEP-1X041A04	1.000E-003	3	OPERATOR FAILS TO TRANSFER POWER FROM 1X04 TO 1A04
416-HEP-2A031A03	1.000E-003	3	OPERATOR FAILS TO TRANSFER POWER FROM 2A-03 TO 1A-03
416-HEP-2A041A04	1.000E-003	3	OPERATOR FAILS TO TRANSFER POWER FROM 2A-04 TO 1A-04
416-HEP-2X042A03	1.000E-003	3	OPERATOR FAILS TO TRANSFER POWER FROM 2X-04 TO 2A-03
416-HEP-2X042A04	1.000E-003	3	OPERATOR FAILS TO TRANSFER POWER FROM 2X-04 TO 2A-04
416-HEP-G01-1A05	3.900E-003	3	OPERATOR FAILS TO ALIGN G-01 TO 1A-05U1 ECA-0.0 STEP 9
416-HEP-G02-1A05	3.900E-003	3	OPERATOR FAILS TO ALIGN G-02 TO 1A-05U1 ECA-0.0 STEP 10
416-HEP-G03-1A06	3.900E-003	3	OPERATOR FAILS TO ALIGN G-03 TO 1A-06U1 ECA-0.0 STEP 12
416-HEP-G04-1A06	3.900E-003	3	OPERATOR FAILS TO ALIGN G-04 TO 1A-06U1 ECA-0.0 STEP 13
416-X---LP--1X04	1.942E-005	4	TRANSFORMER BETWEENH-02 AND 1A-03 / 1A-04
416-X---LP--1X06	1.942E-005	4	TRANSFORMER 1X06 FAILS BTWN 1A-06 AND 1B-40
416-X---LP--1X12	1.942E-005	4	4160V-480V AC TRANSORMER 1X-12 FAILURE
416-X---LP--1X13	1.942E-005	4	TRANSFORMER 1X13 FAILS DUE TO LOSS OF POWER
416-X---LP--1X14	1.942E-005	4	TRANSFORMER 1X14 FAILS DUE TO LOSS OF POWER
416-X---LP--2X04	1.942E-005	4	TRANSFORMER BETWEENH-03 AND 2A-03 / 2A-04
416-X---LP--2X06	1.942E-005	4	TRANSFORMER 2X06 FAILS BTWN 2A-06 AND 2B-40
416-X---LP--2X11	1.942E-005	4	TRANSFORMER 2X11 FAILS DUE TO LOSS OF POWER
416-X---LP--2X12	1.942E-005	4	TRANSFORMER 2X12 FAILS DUE TO LOSS OF POWER

416-X---LP--2X13	1.942E-005	4	TRANSFORMER 2X13 FAILS DUE TO LOSS OF POWER
416-X---LP--2X14	1.942E-005	4	TRANSFORMER 2X14 FAILS DUE TO LOSS OF POWER
416-X---LP-01X13	1.942E-005	4	TRANSFORMER 1X13 FAILS TO 1B03
480-BKR-CO-1B14B	7.611E-006	4	480 V BREAKER 1B52-14B TRANSFERS OPEN
480-BKR-CO-1B16B	7.611E-006	4	480 V BREAKER 1B-16B TRANSFERS OPEN
480-BKR-CO-1B31M	7.611E-006	4	480 V BREAKER 1B52-301M TRANSFERS OPEN
480-BKR-CO-1B32D	7.611E-006	4	480 V BREAKER 1B52-302D TRANSFERS OPEN
480-BKR-CO-1B32F	7.611E-006	4	480 V BREAKER 1B52-3212F TRANSFERS OPEN
480-BKR-CO-1D45D	2.537E-006	4	CIRCUT BREAKER 1B52-405D TRANSFERSOPEN
480-BKR-CO-2B31M	7.611E-006	4	480 V BREAKER 2B52-301M TRANSFERS OPEN
480-BKR-CO-2B32D	7.611E-006	4	480 V BREAKER 2B52-302D TRANSFERS OPEN
480-BKR-CO-2B32F	7.611E-006	4	480 V BREAKER 2B52-3212F TRANSFERS OPEN
480-BKR-CO-2B38B	7.611E-006	4	480 V BREAKER 2B52-14B TRANSFERS OPEN
480-BKR-CO-2B40B	7.611E-006	4	480 V BREAKER 2B52-16B TRANSFERS OPEN
480-BKR-CO-2B45D	2.537E-006	4	CIRCUIT BREAKER 2B52-405D TRANSFERSOPEN
480-BKR-CO-3212H	7.611E-006	4	480 VAC BREAKER 1B52-3212H BTWN 1B32 AND D-109
480-BKR-CO-329FL	7.611E-006	4	BREAKER 1B52-329FL FAILS TO REMAIN CLOSED
480-BKR-CO-4212B	7.611E-006	4	480 VAC BREAKER BTWN 2B-42 AND D-109
480-BKR-CO-429DR	7.611E-006	4	BREAKER 2B52-429DR FAILS TO REMAIN CLOSED
480-BKR-CO-5211B	7.611E-006	4	480 V BKR 1B52-11B BTWN BUS 1B-03 AND MCC 1B-32
480-BKR-CO-5213C	7.611E-006	4	BKR 1B52-13C 1B03 TO 1B39 FAILS OPEN
480-BKR-CO-5214B	7.611E-006	4	480 V BKR 1B52-14B BTWN BUS 1B-03 AND MCC 1B-32
480-BKR-CO-5216B	7.611E-006	4	BKR 1B52-16B 1X13 TO 1B03 FAILS OPEN
480-BKR-CO-5217B	7.611E-006	4	BKR 1B52-17B 1X14 TO 1B04 FAILS OPEN
480-BKR-CO-5225B	7.611E-006	4	BKR 2B52-25B 2X14 TO 2B04 FAILS OPEN
480-BKR-CO-5231A	7.611E-006	4	BKR 2B52-31A 2B04 TO 2B49 FAILS OPEN
480-BKR-CO-5232C	7.611E-006	4	BKR 2B52-32C 2B04 TO 2B42 FAILS OPEN
480-BKR-CO-5235C	7.611E-006	4	480 VAC BKR 2B52-35C FROM 2B-03TO MCC 2B-32
480-BKR-CO-5236C	7.611E-006	4	480 V BKR 2B52-36C BTWN BUS 2B-03 AND MCC 2B-39
480-BKR-CO-5238B	7.611E-006	4	480 VAC BKR 2B52-38B FROM 2B-03TO MCC 2B-32
480-BKR-CO-52391	7.611E-006	4	BKR 1B52-391 1B39 TO D07 FAILS OPEN
480-BKR-CO-52394	7.611E-006	4	480 VAC BREAKER 2B52-394 BETWEEN 2B-39 AND D-107
480-BKR-CO-5240B	7.611E-006	4	BKR 2B52-40B 2X13 TO 2B03 FAILS OPEN
480-BKR-CO-52491	7.611E-006	4	480 VAC BREAKER 2B52-491 BETWEEN 2B-49 AND D-08
480-BKR-CO-52494	7.611E-006	4	480 VAC BREAKER 1B52-494 BETWEEN 1B-39 AND D-108
480-BKR-CO-5253B	7.611E-006	4	480 V BREAKER B52-53B FROM X-08 TO B-08
480-BKR-CO-5256B	7.611E-006	4	480 V BREAKER B52-56B FROM B-08 TO B-09

480-BKR-CO-5257C	7.611E-006	4	480 VAC BKR B52-57C0B-09 TO 0PP-54 NCFO
480-BKR-CO-B525B	7.611E-006	4	BREAKER 1B52-5B (1X12 TO 1B02) FAILS OPEN
480-BKR-CO-B527D	7.611E-006	4	BREAKER 1B52-7D FAILS TO REMAIN CLOSED
480-BKR-CO15211B	7.611E-006	4	480 VAC BKR 1B52-11B FROM 1B-03TO MCC 1B-32
480-BKR-CO15213C	7.611E-006	4	480 V BKR 1B52-13C BTWN BUS 1B-03 AND MCC 1B-39
480-BKR-CO15214B	7.611E-006	4	480 VAC BKR 1B52-14B FROM 1B-03TO MCC 1B-32
480-BKR-CO15216B	7.611E-006	4	480 VAC BKR 1B52-16B FROM 1X13 TO BUS 1B-03
480-BKR-CO15216C	7.611E-006	4	480 V BREAKER 1B52-16C FROM 1B03TO 1B-04
480-BKR-CO15217B	7.611E-006	4	480 VAC BKR 1B52-17B FROM 1X14 TO BUS 1B-04
480-BKR-CO15221C	7.611E-006	4	480 V BKR 1B52-21C BTWN BUS 1B-04 AND MCC B-43
480-BKR-CO15223A	7.611E-006	4	480 V BKR 1B52-23A BTWN BUS 1B-04 AND MCC 1B-42
480-BKR-CO15223C	7.611E-006	4	480 V BKR 1B52-23C BTWN BUS 1B-04 AND MCC 1B-42
480-BKR-CO15224C	7.611E-006	4	480 V BKR 1B52-24C BTWN BUS 1B-04 AND MCC 1B-49
480-BKR-CO152491	7.611E-006	4	BREAKER 1B52-491 BETWEEN BUS 1B-49 AND D-09
480-BKR-CO152494	7.611E-006	4	BREAKER 1B52-494 FROM 1B49 TO D108 FAILS OPEN
480-BKR-CO25225B	7.611E-006	4	480 VAC BKR 2B52-25B FROM 2X14 TO BUS 2B-04
480-BKR-CO25226C	7.611E-006	4	480 V BREAKER 2B52-26C FROM 2B-04 TO 2B-02
480-BKR-CO25231A	7.611E-006	4	480 V BKR 2B52-31A BTWN BUS 2B-04 AND MCC 2B-49
480-BKR-CO25231B	7.611E-006	4	480 V BKR 2B52-31B BTWN BUS 2B-04 AND MCC 2B-42
480-BKR-CO25232C	7.611E-006	4	480 V BKR 2B52-32C BTWN BUS 2B-04 AND MCC 2B-42
480-BKR-CO25235C	7.611E-006	4	480 VAC BKR 2B52-35C FROM 2B-03TO MCC 2B-32
480-BKR-CO25237C	7.611E-006	4	480 V BKR 2B52-37C BTWN BUS 2B-03 AND MCC B-33
480-BKR-CO25238B	7.611E-006	4	480 VAC BKR 2B52-38B FROM 2B-03TO MCC 2B-32
480-BKR-CO252391	7.611E-006	4	BREAKER 2B52-391 BETWEEN BUS 2B-39 AND D-09
480-BKR-CO252394	7.611E-006	4	BREAKER 2B52-394 FROM 2B39 TO D107 FAILS OPEN
480-BKR-CO25239C	7.611E-006	4	480 V BREAKER 2B52-39C FROM 2B-03 TO 2B-01
480-BKR-CO25240B	7.611E-006	4	480 VAC BKR 2B52-40B FROM 2X13 TO BUS 2B-03
480-BKR-CO25240C	7.611E-006	4	480 V BREAKER 2B52-40C FROM 2B-04 TO 2B-03
480-BKR-CO25241C	7.611E-006	4	480 V BKR 2B52-41C BTWN BUS 2B-02 AND MCC 2B-43
480-BKR-CO25244B	7.611E-006	4	480 VAC BKR 2B52-44B FROM 2X12 TO BUS 2B-02
480-BKR-CO25245B	7.611E-006	4	480 VAC BKR 2B52-45B FROM 2X11 TO BUS 2B-01
480-BKR-CO25248C	7.611E-006	4	480 V BKR 2B52-48C BTWN BUS 2B-01 AND MCC 2B-43
480-BKR-CO252491	7.611E-006	4	BREAKER 2B52-491 FROM 2B49 TO D02 FAILS OPEN
480-BKR-CO52811M	7.611E-006	4	480 VAC BREAKER B52-811M BTWN B-81 AND D-109
480-BKR-COB5255D	7.611E-006	4	480 V BKR B52-55D BTWN BUS B-08 AND MCC B-81
480-BKR-COPP5402	7.611E-006	4	480 V BKR 0PP-54-020PP-54 TO 0XY-08 NCFO
480-BKR-OO-3212H	5.727E-004	3	480 VAC BREAKER 1B52-3212H BTWN 1B32 AND D-109

480-BKR-OO-4212B	5.727E-004	3	480 VAC BREAKER 2B52-4212B BTWN 2B42 AND D-109
480-BKR-0015216B	5.727E-004	3	480 VAC BKR 1B52-16B FROM 1X13 TO BUS 1B-03
480-BKR-0015216C	5.727E-004	3	480 V BREAKER 1B52-16C FROM 1B03TO 1B-04
480-BKR-0015217B	5.727E-004	3	480 VAC BKR 1B52-17B FROM 1X14 TO BUS 1B-04
480-BKR-00152391	5.727E-004	3	480 VAC BREAKER 1B52-391 BETWEEN 1B-39 AND D-07
480-BKR-00152491	5.727E-004	3	480 VAC BREAKER 1B52-491 BETWEEN 1B-49 AND D-09
480-BKR-00152494	5.727E-004	3	480 VAC BREAKER 1B52-494 BETWEEN 1B-39 AND D-108
480-BKR-0024212B	5.727E-004	3	480 VAC BREAKER 2B52-4212B BTWN 2B42 AND D-109
480-BKR-0025225B	5.727E-004	3	480 VAC BKR 2B52-25B FROM 2X14 TO BUS 2B-04
480-BKR-0025226C	5.727E-004	3	480 V BREAKER 2B52-26C FROM 2B-04 TO 2B-02
480-BKR-00252391	5.727E-004	3	BREAKER 2B52-391 BETWEEN BUS 2B-39 AND D-09
480-BKR-00252394	5.727E-004	3	480 VAC BREAKER 2B52-394 BETWEEN 2B-39 AND D-107
480-BKR-0025239C	5.727E-004	3	480 V BREAKER 2B52-39C FROM 2B-03 TO 2B-01
480-BKR-0025240B	5.727E-004	3	480 VAC BKR 2B52-40B FROM 2X13 TO BUS 2B-03
480-BKR-0025240C	5.727E-004	3	480 V BREAKER 2B52-40C FROM 2B-04 TO 2B-03
480-BKR-0025241C	5.727E-004	3	480 V BKR 2B52-41C BTWN BUS 2B-02 AND MCC 2B-43
480-BKR-0025244B	5.727E-004	3	480 VAC BKR 2B52-44B FROM 2X12 TO BUS 2B-02
480-BKR-0025245B	5.727E-004	3	480 VAC BKR 2B52-45B FROM 2X11 TO BUS 2B-01
480-BKR-0025248C	5.727E-004	3	480 V BKR 2B52-48C BTWN BUS 2B-01 AND MCC 2B-43
480-BKR-00252491	5.727E-004	3	480 VAC BREAKER 2B52-491 BETWEEN 2B-49 AND D-08
480-BKR-002A5225	5.727E-004	3	480 VAC BKR 2A52-25 FROM 2X11 TO BUS 2B-01
480-BKR-0052811M	5.727E-004	3	480 VAC BREAKER B52-811M BTWN B-81 AND D-109
480-BS--LP---B08	2.400E-006	4	480 VAC BUS B-08 LOSS OF POWER
480-BS--LP---B09	2.400E-006	4	480 VAC BUS B-09 LOSS OF POWER
480-BS--LP---P54	2.400E-006	4	480 VAC POWER PANELOPP-54 FAILS
480-BS--LP--1B02	2.400E-006	4	480V AC BUS 1B-02 FAILURE
480-BS--LP--1B03	2.400E-006	4	480 VAC BUS 1B-03 LOSS OF POWER
480-BS--LP--1B04	2.400E-006	4	480 VAC BUS 1B-04 LOSS OF POWER
480-BS--LP--2B01	2.400E-006	4	480 VAC BUS 2B-01 LOSS OF POWER
480-BS--LP--2B02	2.400E-006	4	480 VAC BUS 2B-02 LOSS OF POWER
480-BS--LP--2B03	2.400E-006	4	480 VAC BUS 2B-03 LOSS OF POWER
480-BS--LP--2B04	2.400E-006	4	480 VAC BUS 2B-04 LOSS OF POWER
480-BS--TM---B08	2.380E-003	3	480 VAC BUS 0B-08 UNAVAILABLE DUE TO TEST OR MAINTENANCE
480-BS--TM---B09	2.380E-003	3	480 VAC BUS 0B-09 UNAVAILABLE DUE TO TEST OR MAINTENANCE
480-BS--TM--1B03	0.000E+000	3	480 VAC BUS 1B-03 UNAVAILABLE DUE TO TEST OR MAINTENANCE
480-BS--TM--1B04	0.000E+000	3	480 VAC BUS 1B-04 UNAVAILABLE DUE TO TEST OR MAINTENANCE
480-BS--TM--2B01	0.000E+000	3	480 VAC BUS 2B-01 UNAVAILABLE DUE TO TEST OR MAINTENANCE

480-BS--TM--2B02	0.000E+000	3	480 VAC BUS 2B-02 UNAVAILABLE DUE TO TEST OR MAINTENANCE
480-BS--TM--2B03	6.980E-003	3	480 VAC BUS 2B-03 UNAVAILABLE DUE TO TEST OR MAINTENANCE
480-BS--TM--2B04	6.980E-003	3	480 VAC BUS 2B-04 UNAVAILABLE DUE TO TEST OR MAINTENANCE
480-HEP-1A051B03	1.000E-003	3	OPERATOR FAILURE TOTRANSFER POWER FROM1A-05 TO 1B-03
480-HEP-1A061B04	1.000E-003	3	OPERATOR FAILURE TOTRANSFER POWER FROM1A06-1B04
480-HEP-1B031B04	1.000E-003	3	OPERATOR FAILURE TOTRANSFER POWER FROM1B-03 TO 1B-04
480-HEP-1B041B03	1.000E-003	3	OPERATOR FAILURE TOTRANSFER POWER FROM1B-04 TO 1B-03
480-HEP-2A012B01	1.000E-003	3	OPERATOR FAILURE TOTRANSFER POWER FROM2A-01 TO 2B-01
480-HEP-2A022B02	1.000E-003	3	OPERATOR FAILURE TOTRANSFER POWER FROM2A-02 TO 2B-02
480-HEP-2A052B03	1.000E-003	3	OPERATOR FAILURE TOTRANSFER POWER FROM2A-05 TO 2B-03
480-HEP-2A062B04	1.000E-003	3	OPERATOR FAILURE TOTRANSFER POWER FROM2A-06 TO 2B-04
480-HEP-2B012B43	1.000E-003	3	OPERATOR FAILURE TOTRANSFER POWER FROM2B-01 TO 2B-43
480-HEP-2B022B43	1.000E-003	3	OPERATOR FAILURE TOTRANSFER POWER FROM2B-02 TO 2B43
480-HEP-2B032B01	1.000E-003	3	OPERATOR FAILURE TOTRANSFER POWER FROM2B-03 TO 2B-01
480-HEP-2B032B04	1.000E-003	3	OPERATOR FAILURE TOTRANSFER POWER FROM2B-03 TO 2B-04
480-HEP-2B042B02	1.000E-003	3	OPERATOR FAILURE TOTRANSFER POWER FROM2B-04 TO 2B-02
480-HEP-2B042B03	1.000E-003	3	OPERATOR FAILURE TOTRANSFER POWER FROM2B-04 TO 2B-03
480-MCC-LP---B33	2.400E-006	4	LOSS OF POWER FROM 480 VAC MCC B-33
480-MCC-LP---B43	2.400E-006	4	LOSS OF POWER FROM 480 VAC MCC B-43
480-MCC-LP---B81	2.400E-006	4	LOSS OF POWER FROM 480 VAC MCC B-81
480-MCC-LP--1B32	2.400E-006	4	LOSS OF POWER FROM 480 VAC MCC 1B-32
480-MCC-LP--1B39	2.400E-006	4	LOSS OF POWER FROM 480 VAC MCC 1B-39
480-MCC-LP--1B40	2.400E-006	4	480 V AC MCC 1B40 FAILS DURING OPERATION
480-MCC-LP--1B41	2.400E-006	4	480V MOTOR CONTROL CENTER 1B-41 FAILURE
480-MCC-LP--1B42	2.400E-006	4	LOSS OF POWER FROM 480 VAC MCC 1B-42
480-MCC-LP--1B49	2.400E-006	4	LOSS OF POWER FROM 480 VAC MCC 1B-49
480-MCC-LP--2B32	2.400E-006	4	LOSS OF POWER FROM 480 VAC MCC 2B-32
480-MCC-LP--2B39	2.400E-006	4	LOSS OF POWER FROM 480 VAC MCC 2B-39
480-MCC-LP--2B40	2.400E-006	4	480 V AC MCC 2B40 FAILS DURING OPERATION
480-MCC-LP--2B42	2.400E-006	4	LOSS OF POWER FROM 480 VAC MCC 2B-42
480-MCC-LP--2B43	2.400E-006	4	LOSS OF POWER FROM 480 VAC MCC 2B-43
480-MCC-LP--2B49	2.400E-006	4	LOSS OF POWER FROM 480 VAC MCC 2B-49
480-MCC-LP-02B42	2.400E-006	4	LOSS OF POWER FROM 480 VAC MCC 2B42
480-MCC-LP-1B-30	2.400E-006	4	480 V MCC 1B-30 FAILURE
480-MCC-LP-1B-32	2.400E-006	4	480 V MCC 1B-32 FAILURE
480-MCC-LP-1B-40	2.400E-006	4	480 V MCC 1B-40 FAILURE
480-MCC-LP-2B-30	2.400E-006	4	480 V MCC 2B-30 FAILURE

480-MCC-LP-2B-32	2.400E-006	4	480 V MCC 2B-32 FAILURE
480-MCC-LP-2B-40	2.400E-006	4	480 V MCC 2B-40 FAILURE
480-MCC-TM---B33	0.000E+000	3	480 VAC MCC B-33 UNAVAILABLE DUE TO TEST OR MAINTENANCE
480-MCC-TM---B43	0.000E+000	3	480 VAC MCC B-43 UNAVAILABLE DUE TO TEST OR MAINTENANCE
480-MCC-TM---B81	0.000E+000	3	480 VAC MCC B-81 UNAVAILABLE DUE TO TEST OR MAINTENANCE
480-MCC-TM--1B32	0.000E+000	3	480 VAC MCC 1B-32 UNAVAILABLE DUE TO TEST OR MAINTENANCE
480-MCC-TM--1B39	0.000E+000	3	480 VAC MCC 1B-39 UNAVAILABLE DUE TO TEST OR MAINTENANCE
480-MCC-TM--1B42	0.000E+000	3	480 VAC MCC 1B-42 UNAVAILABLE DUE TO TEST OR MAINTENANCE
480-MCC-TM--1B49	0.000E+000	3	480 VAC MCC 1B-49 UNAVAILABLE DUE TO TEST OR MAINTENANCE
480-MCC-TM--2B32	2.200E-003	3	480 VAC MCC 2B-32 UNAVAILABLE DUE TO TEST OR MAINTENANCE
480-MCC-TM--2B39	2.200E-003	3	480 VAC MCC 2B-39 UNAVAILABLE DUE TO TEST OR MAINTENANCE
480-MCC-TM--2B42	2.200E-003	3	480 VAC MCC 2B-42 UNAVAILABLE DUE TO TEST OR MAINTENANCE
480-MCC-TM--2B43	2.200E-003	3	480 VAC MCC 2B-43 UNAVAILABLE DUE TO TEST OR MAINTENANCE
480-MCC-TM--2B49	2.200E-003	3	480 VAC MCC 2B-49 UNAVAILABLE DUE TO TEST OR MAINTENANCE
480-X---LP--XL10	1.942E-005	4	480V-120V AC TRANSFORMER FAILURE
480-X---LP--XY08	1.942E-005	4	480V-120V AC TRANSFORMER XY-08 FAILS
480-X---LP-1XY06	1.942E-005	4	480V-120V AC TRANSFORMER 1XY06 FAILURE
480-X---LP-2XY06	1.942E-005	4	480V-120V AC TRANSFORMER 2XY06 FAILURE
A-HHI-FAIL-FLAG	1.000E+000	3	FLAG FAILURE OF A RCS INJECTION
A-LHI-FAIL-FLAG	1.000E+000	3	FLAG FAILURE OF A RHR INJECTION
A-LHR-FAIL-FLAG	1.000E+000	3	FLAG FAILURE OF A RHR RECIRCULATION
AC-RECOVERED-1HR	5.900E-001	3	POWER IS RECOVERED WITHIN 1 HOUR
AC-RECOVERED-2HR	7.200E-001	3	POWER IS RECOVERED WITHIN 2 HOURS
AC-RECOVERED-4HR	8.700E-001	3	POWER IS RECOVERED WITHIN 4 HOURS
AC-RECOVERED-5HR	9.100E-001	3	POWER IS RECOVERED WITHIN 5 HOURS
AF--AOV-CC--4007	5.860E-003	3	BLOCK 16 P38A RECIRC VLV FAILS CLOSED
AF--AOV-CC--4012	5.860E-003	3	BLOCK 16 AOV FROM MDP P38A TO UNIT 1 "A" STEAM GENERATOR
AF--AOV-CC--4014	5.860E-003	3	BLOCK 20 P38B RECIRC VLV FAILS CLOSED
AF--AOV-CC--4019	5.860E-003	3	BLOCK 20 AOV FROM PUMP P38B TO "B" STEAM GENERATORS
AF--AOV-CC1-4002	5.860E-003	3	BLOCK 9 1P-29 MIN FLOW RECIRC 1-AF-4002
AF--AOV-CC2-4002	5.860E-003	3	BLOCK 44 2P-29 MIN FLOW RECIRC 2-AF-4002
AF--AOV-CM--1219	1.620E-004	3	BLOCKS 16 AND 20 COMMON MODE 0-AF-4012/4019
AF--AOV-CM--4002	1.620E-004	3	BLOCKS 9 AND 44 MIN FLOW RECIRC 1(2)-AF-4002
AF--AOV-CM-07-14	1.620E-004	3	BLOCKS 16 AND 20 MIN FLOW RECIRC 0-AF-4007/4014
AF--AOV-OC--4007	3.862E-005	4	BLOCK 16 P-38A MIN FLOW RECIRC AIR OPERATED VALVE
AF--AOV-OC--4012	3.862E-005	4	BLOCK 16 AOV FROM MDP P38A TO UNIT 1 "A"STEAM GENERATORS
AF--AOV-OC--4014	3.862E-005	4	BLOCK 20 AOV ON MIN FLOW RECIRC LINE

AF--AOV-OC--4019	3.862E-005	4	BLOCK 20 AOV FROM P38B TO "B" STEAM GENERATORS
AF--AOV-OC1-4002	3.862E-005	4	BLOCK 9 1P-29 MIN FLOW RECIRC 1-AF-4002
AF--AOV-OC2-4002	3.862E-005	4	BLOCK 44 2P-29 MIN FLOW RECIRC 2-AF-4002
AF--CKV-CC---109	5.000E-005	3	BLOCK 16 MDP P38A DISCHARGE CHECK VALVE
AF--CKV-CC---110	5.000E-005	3	BLOCK 20 PUMP P-38B DISCHARGE CHECK VALVE
AF--CKV-CC---112	5.000E-005	3	BLOCK 14 CHECK VALVE TO MDP P38A
AF--CKV-CC---113	5.000E-005	3	BLOCK 18 CHECK VALVE TO MDP P38B
AF--CKV-CC---115	5.000E-005	3	BLOCK 16 P38A MIN FLOW RECIRC 0-AF-115
AF--CKV-CC---116	5.000E-005	3	BLOCK 20 P38B MIN FLOW RECIRC 0-AF-116
AF--CKV-CC---117	5.000E-005	3	BLOCK 35 RECIRC LINE FROM ALL AFW PUMPS TO CSTS.
AF--CKV-CC-1-100	5.000E-005	3	BLOCK 12 CHECK VLV FROM 1P-29 TO "A" STEAM GENERATOR
AF--CKV-CC-1-101	5.000E-005	3	BLOCK 13 CHECK VLV FROM 1P-29 TO "B" STEAM GENERATOR
AF--CKV-CC-1-102	5.000E-005	3	BLOCK 17 CKV VLV FROM P38A TO UNIT 1"A" STEAM GENERATOR
AF--CKV-CC-1-104	5.000E-005	3	BLOCK 21 FROM P38B TO UNIT 1 "B" STEAM GENERATOR
AF--CKV-CC-1-106	5.000E-005	3	BLOCK 10 CKV VLV FROM 1P29 TO "A" STEAM GENERATOR
AF--CKV-CC-1-107	5.000E-005	3	BLOCK 11 CKV VLV FROM 1P-29 TO "B" STEAM GENERATOR
AF--CKV-CC-1-108	5.000E-005	3	BLOCK 9 TDP 1P29 DISCHARGE CHECK VALVE
AF--CKV-CC-1-111	5.000E-005	3	BLOCK 5 CHECK VALVE TO TDP 1P-29
AF--CKV-CC-1-114	5.000E-005	3	BLOCK 9 1P-29 MIN FLOW RECIRC 1-AF-114
AF--CKV-CC-2-100	5.000E-005	3	BLOCK 42 CHECK VLV FROM 2P-29 TO U2 "A" STEAM GENERATOR
AF--CKV-CC-2-101	5.000E-005	3	BLOCK 56 CHECK VLV FROM 2P-29 TO U2 "B" STEAM GENERATOR
AF--CKV-CC-2-103	5.000E-005	3	BLOCK 59 CHECK VLV FROM P38A TO UNIT 2"A" STEAM GENERATOR
AF--CKV-CC-2-105	5.000E-005	3	BLOCK 58 FROM P38B TO UNIT 2 "B" STEAM GENERATOR
AF--CKV-CC-2-106	5.000E-005	3	BLOCK 41 CHECK VLV FROM 2P-29 TO UNIT 2 "A" STEAM GEN.
AF--CKV-CC-2-107	5.000E-005	3	BLOCK 55 CHECK VLV FROM 2P-29 TO UNIT 2 "B" STEAM GEN.
AF--CKV-CC-2-108	5.000E-005	3	BLOCK 44 TDP 2P29 DISCHARGE CHECK VALVE
AF--CKV-CC-2-111	5.000E-005	3	BLOCK 48 CHECK VALVE FROM CST TO TDP 2P-29
AF--CKV-CC-2-114	5.000E-005	3	BLOCK 44 2P-29 MIN FLOW RECIRC 2-AF-114
AF--CKV-CM---108	8.800E-006	3	BLOCKS 9 AND 44 COMMON MODE TDP CKV VLVS1(2)-AF-108
AF--CKV-CM---111	8.800E-006	3	BLOCK 5 AND 48 TDP CKV VLVS 1/2-AF-00111
AF--CKV-CM---114	8.800E-006	3	BLOCKS 9 AND 44 MIN FLOW RECIRC 1(2)-AF-114
AF--CKV-CM--0204	8.800E-006	3	BLOCKS 17 AND 21 1-AF-102 1-AF-104
AF--CKV-CM--0910	8.800E-006	3	BLOCKS 16 AND 20 COMMON MODE 0-AF-109/110
AF--CKV-CM--1213	8.800E-006	3	BLOCKS 14 AND 18 INLET TO MDPS 0-AF-112/113
AF--CKV-CM-131-3	7.030E-005	3	COMMON MODE OO VALVES 131 AND 133
AF--CKV-CM-151-3	7.030E-005	3	COMMON MODE OO VALVES 151 AND 153
AF--CKV-CM-16-26	8.610E-007	3	BLOCKS 10 AND 41 1-AF-106 2-AF-106

AF--CKV-CM-16-27	8.610E-007	3	BLOCKS 10 AND 55 1-AF-106 2-AF-107
AF--CKV-CM-17-16	8.610E-007	3	BLOCKS 11 AND 10 1-AF-107 1-AF-106
AF--CKV-CM-17-26	8.610E-007	3	BLOCKS 11 AND 41 1-AF-107 2-AF-106
AF--CKV-CM-17-27	8.610E-007	3	BLOCKS 11 AND 55 1(2)-AF-107
AF--CKV-CM-20-21	8.800E-006	3	BLOCKS 42 AND 56 COMMON MODE 2-AF-100/101
AF--CKV-CM-26-27	8.610E-007	3	BLOCKS 41 AND 55 2-AF-106 2-AF-107
AF--CKV-CM-2ALL4	4.510E-006	3	BLOCKS10/11/41/55 1(2)-AF-106 1(2)-AF-107
AF--CKV-CM-IAALL	2.200E-005	3	COMMON MODE OO 4 OR MORE OUT OF 8 IA ISOL CHECK VLV
AF--CKV-CM100101	8.800E-006	3	BLOCKS 12 AND 13 COMMON MODE 1-AF-100/101
AF--CKV-CM103105	8.800E-006	3	BLOCK 58 AND 59 COMMON MODE 2-AF-103/105
AF--CKV-CM115116	8.800E-006	3	BLOCKS 16 AND 20 MIN FLOW RECIRC 0-AF-115/116
AF--CKV-CM162627	3.010E-009	3	BLOCKS 10 41 55 1-AF-106 2-AF-106 2-AF-107
AF--CKV-CM171626	3.010E-009	3	BLOCKS 11 10 41 1-AF-107 1-AF-106 2-AF-106
AF--CKV-CM171627	3.010E-009	3	BLOCKS 11 10 55 1-AF-107 1-AF-106 2-AF-107
AF--CKV-CM172627	3.010E-009	3	BLOCKS 11 41 55 1-AF-107 2-AF-106 2-AF-107
AF--CKV-CM1XX1-3	7.030E-005	3	COMMON MODE OO VALVES 1-XX1 AND 1-XX3
AF--CKV-CM2XX1-3	7.030E-005	3	COMMON MODE OO VALVES 2-XX1 AND 2-XX3
AF--CKV-CO-1-106	1.200E-005	4	BLOCK 17 FAILURE FOR BLOCK 10 VALVE 1-AF-106
AF--CKV-CO-1-107	1.200E-005	4	BLOCK 21 FAILURE FOR BLOCK 11 VALVE 1-AF-107
AF--CKV-CO-2-106	1.200E-005	4	BLOCK 59 FAILURES FOR BLOVK 41 VALVE 2-AF-106
AF--CKV-CO-2-107	1.200E-005	4	BLOCK 58 FAILURE FOR BLOCK 55 VALVE 2-AF-107
AF--CKV-OO-00131	1.000E-003	3	IA SUPPLY OUTBOARD CHECK VALVE TO RECIRC VALVE
AF--CKV-OO-00133	1.000E-003	3	IA SUPPLY INBOARD CHECK VALVE TO RECIRC VALVE
AF--CKV-OO-00151	1.000E-003	3	IA SUPPLY OUTBOARD CHECK VALVE TO RECIRC VALVE
AF--CKV-OO-00153	1.000E-003	3	IA SUPPLY INBOARD CHECK VALVE TO RECIRC VALVE
AF--CKV-OO-1-106	1.000E-003	3	BLOCK 17 FAILURE FOR BLOCK 10 VALVE 1-AF-00106
AF--CKV-OO-1-107	1.000E-003	3	BLOCK 21 FAILURE FOR BLOCK 11 VALVE 1-AF-00107
AF--CKV-OO-1-XX1	1.000E-003	3	IA SUPPLY OUTBOARD CHECK VALVE TO RECIRC VALVE
AF--CKV-OO-1-XX3	1.000E-003	3	IA SUPPLY INBOARD CHECK VALVE TO RECIRC VALVE
AF--CKV-OO-2-106	1.000E-003	3	BLOCK 59 FAILURES FOR BLOVK 41 VALVE 2-AF-00106
AF--CKV-OO-2-107	1.000E-003	3	BLOCK 58 FAILURE FOR BLOCK 55 VALVE 2-AF-00107
AF--CKV-OO-2-XX1	1.000E-003	3	IA SUPPLY OUTBOARD CHECK VALVE TO RECIRC VALVE
AF--CKV-OO-2-XX3	1.000E-003	3	IA SUPPLY INBOARD CHECK VALVE TO RECIRC VALVE
AF--HEP-CST-FW--	1.100E-002	3	FIRE WATER TO CST
AF--HEP-CST-LOW-	3.900E-004	3	FAILURE OF OPERATORTO RESPOND TO LOW CST LEVEL ALARM
AF--HEP-CST-SW--	4.600E-003	3	MEX EVENT ZERO
AF--HEP-CST-SWMD	1.500E-002	3	SERVICE WATER TO THE MOTOR-DRIVEN PUMP

AF--HEP-CST-SWTD	9.200E-003	3	SERVICE WATER TO THE TURBINE-DRIVEN PUMP
AF--HEP-MDP-FLOW	4.400E-002	3	FAILURE TO MANUALLYCONTROL MDAFW AFTERA LOSS OF IA
AF--HEP-MINI-GAG	3.400E-003	3	FAILURE TO GAG MINI RECIRC VALVE >1HR INTO EVENT
AF--HEP-RECIRC-1	2.500E-002	3	FAILURE TO MANUALLYCONTROL RECIRC ON TDP 1P-29
AF--HEP-RECIRC-2	2.500E-002	3	FAILURE TO MANUALLYCONTROL RECIRC ON PUMP 2P-29
AF--HEP-RECIRC-A	2.500E-002	3	FAILURE TO MANUALLYCONTROL RECIRC ON MDP P-38A
AF--HEP-RECIRC-B	2.500E-002	3	FAILURE TO MANUALLYCONTROL RECIRC ON MDP P-38B
AF--HEP-RECIRC4F	5.060E-003	3	COMMON FAILURE TO MANUALLY CONT AFW RECIRC
AF--HEP-START-MD	1.640E-003	3	FAILURE TO MANUALLYSTART MDP AFTER AUTO FAILS
AF--HEP-START12T	2.570E-004	3	MEX EVENT CM FOR MANUAL START OF 2 TDAFW
AF--HEP-START1TD	1.640E-003	3	FAILURE OF OP. TO MANUALLY START TDP-1P29
AF--HEP-START2TD	1.640E-003	3	FAILURE OF OP. TO MANUALLY START TDP-2P29
AF--HEP-TDAFISOL	5.750E-003	3	FAILURE TO ISOLATE TDAFW PUMP FROM RUPTURED SG
AF--MDP-CM-R38AB	3.270E-004	3	BLOCKS 16 AND 29 FAIL TO RUN COMMON MDP P-38A/B
AF--MDP-CM-S38AB	6.470E-005	3	BLOCKS 16 AND 20 FAIL TO START COMM.MDP P-38A/B
AF--MDP-FR---38A	1.494E-002	4	BLOCK 16 MDP P-38A
AF--MDP-FR---38B	1.494E-002	4	BLOCK 20 MDP P-38B
AF--MDP-FS---38A	7.990E-004	3	BLOCK 16 MDP P-38A
AF--MDP-FS---38B	7.990E-004	3	BLOCK 20 MDP P-38B
AF--MDP-TM---38A	1.820E-002	3	BLOCK 16 MDP P38A
AF--MDP-TM---38B	1.820E-002	3	BLOCK 20 MDP P38B
AF--MOV-CC1-4006	3.430E-004	3	BLOCK 6 SERVICE WATER FEED MOV TO TDP 1P-29
AF--MOV-CC1-4021	3.430E-004	3	BLOCK 21 FROM P38B TO UNIT 1 "B" STEAM GENERATOR
AF--MOV-CC1-4023	3.430E-004	3	BLOCK 17 MOV FROM P38A TO UNIT 1"A" STEAM GENERATOR
AF--MOV-CC2-4006	3.430E-004	3	BLOCK 46 SERVICE WATER FEED MOV TO TDP 2P-29
AF--MOV-CC2-4020	3.430E-004	3	BLOCK 58 FROM P38B TO UNIT 2 "B" STEAM GENERATOR
AF--MOV-CC2-4022	3.430E-004	3	BLOCK 59 FROM P38A TO UNIT 2 "A" STEAM GENERATOR
AF--MOV-CM--2123	7.310E-006	3	BLOCKS 17 AND 21 COMMON MODE 0-AF-4021/ 4023
AF--MOV-CM--4006	7.310E-006	3	BLOCK 6 AND 46 COMMON MODE 1(2)AF-4006
AF--MOV-CM-22-20	7.310E-006	3	BLOCKS 58 AND 59 COMMON MODE 0-AF-4020/4022
AF--MOV-CO--4020	1.849E-005	4	BLOCK 21 FAILURE FOR BLOCK 58 VAVLE 0-AF-4020
AF--MOV-CO--4021	1.849E-005	4	BLOCK 58 FROM P38B TO UNIT 2 "B" STEAM GENERATOR
AF--MOV-CO--4022	1.849E-005	4	BLOCK 17 FAILURE FOR BLOCK 59 VALVE 0-AF-4022
AF--MOV-CO--4023	1.849E-005	4	BLOCK 59 FROM P38A TO UNIT 2 "A" STEAM GENERATOR
AF--MOV-OC1-4000	5.977E-007	4	BLOCK 11 MOV FROM 1P-29 TO "B" STEAM GENERATOR
AF--MOV-OC1-4001	5.977E-007	4	BLOCK 10 MOV FROM 1P-29 TO "A" STEAM GENERATOR
AF--MOV-OC1-4006	5.977E-007	4	BLOCK 6 SERVICE WATER FEED MOV TO TDP 1P-29

AF--MOV-OC1-4021	5.977E-007	4	BLOCK 21 FROM P38B TO UNIT 1 "B" STEAM GENERATOR
AF--MOV-OC1-4023	5.977E-007	4	BLOCK 17 MOV FROM P38A TO UNIT 1 "A" STEAM GENERATOR
AF--MOV-OC2-4000	5.977E-007	4	BLOCK 55 MOV FROM 2P-29 TO UNIT 2 "B"STEAM GENERATOR
AF--MOV-OC2-4001	5.977E-007	4	BLOCK 41 MOV FROM 2P-29 TO UNIT 2 "A"STEAM GENERATOR
AF--MOV-OC2-4006	5.977E-007	4	BLOCK 46 SERVICE WATER FEED MOV TO TDP 2P-29
AF--MOV-OC2-4020	5.977E-007	4	BLOCK 58 FROM P38B TO UNIT 2 "B" STEAM GENERATOR
AF--MOV-OC2-4022	5.977E-007	4	BLOCK 59 FROM P38A TO UNIT 2 "A" STEAM GENERATOR
AF--MOV-OO1-4000	3.430E-004	3	BLOCK 11 MOV FROM 1P29 TO "B" STEAM GENERATOR
AF--MOV-OO1-4001	3.430E-004	3	BLOCK 10 MOV FROM 1P-29 TO "A" STEAM GENERATOR
AF--MOV-OO2-4000	3.430E-004	3	BLOCK 55 MOV FROM 2P-29 TO UNIT 2 "B"STEAM GENERATOR
AF--MOV-OO2-4001	3.430E-004	3	BLOCK 41 2P29-BSG 2-AF-4001
AF--MOV-TM--4009	0.000E+000	3	BLOCK 15 SERVICE WATER FEED MOV TO MDP P38A
AF--MOV-TM--4016	0.000E+000	3	BLOCK 19 SERVICE WATER FEED MOV TO MDP P38B
AF--MOV-TM1-4000	0.000E+000	3	BLOCK 11 MOV FROM 1P-29 TO "B" STEAM GENERATOR
AF--MOV-TM1-4001	0.000E+000	3	BLOCK 10 MOV FROM 1P-29 TO "A" STEAM GENERATOR
AF--MOV-TM1-4006	0.000E+000	3	BLOCK 6 SERVICE WATER FEED MOV TO TDP 1P-29
AF--MOV-TM1-4021	0.000E+000	3	BLOCK 21 FROM P38B TO UNIT 1 "B" STEAM GENERATOR
AF--MOV-TM1-4023	0.000E+000	3	BLOCK 17 MOV FROM P38A TO UNIT 1 "A" STEAM GENERATOR
AF--MOV-TM2-4000	0.000E+000	3	BLOCK 55 MOV FROM 2P-29 TO UNIT 2 "B"STEAM GENERATOR
AF--MOV-TM2-4001	0.000E+000	3	BLOCK 41 MOV FROM 2P-29 TO UNIT 2 "A"STEAM GENERATOR
AF--MOV-TM2-4006	0.000E+000	3	BLOCK 46 SERVICE WATER FEED MOV TO TDP 2P-29
AF--MOV-TM2-4020	0.000E+000	3	BLOCK 58 FROM P38B TO UNIT 2 "B" STEAM GENERATOR
AF--MOV-TM2-4022	0.000E+000	3	BLOCK 59 FROM P38A TO UNIT 2 "A" STEAM GENERATOR
AF--PC--CM-12-19	1.880E-006	3	BLOCKS 16 AND 20 COMMON MODE PC-4012/4019
AF--PC--NO--4012	8.003E-005	4	BLOCK 16 P38A PC-4012
AF--PC--NO--4019	8.003E-005	4	BLOCK 20 P38B PC-4019
AF--PQ--CM-12-19	6.110E-007	3	BLOCKS 16 AND 20 POWER SUPPLY PQ-4012/4019
AF--PQ--LP--4012	2.602E-005	4	POWER SUPPLY PQ-4012 FAILURE
AF--PQ--LP--4019	2.602E-005	4	BLOCK 20 FOR P38B POWER SUPPLY PQ-4019
AF--PT--CM-12-19	1.160E-006	3	BLOCKS 16 AND 20 COMMON MODE PT-4012/4019
AF--PT--NO--4012	4.916E-005	4	BLOCK 16 MDP P38A PRESSURETRANSMITTERPT-4012
AF--PT--NO--4019	4.916E-005	4	BLOCK 20 P38B PRESSURE TRANSMITTER
AF--PT--SA--4042	2.520E-004	4	BLOCK 16 MDP P38A PRESSURE TRANSMITTER
AF--PT--SA--4043	2.520E-004	4	BLOCK 20 P38B PT 0-PT-4043
AF--PT--SA1-4044	2.520E-004	4	BLOCK 9 TDP 1P29 PRESSURETRANSMITTER1-PT-4044
AF--PT--SA2-4044	2.520E-004	4	BLOCK 44 TDP 2P-29 PRESSURETRANSMITTER2-PT-4044
AF--T---TM--T24A	2.600E-002	3	BLOCK 1 "A" CONDENSATE STORAGE TANK

AF--T---TM--T24B	2.600E-002	3	BLOCK 2 "B" CONDENSATE STORAGE TANK
AF--TDP-CMFR-P29	7.470E-004	3	BLOCKS 9 AND 44 TDPS 1(2)P-29
AF--TDP-CMFS-P29	1.460E-004	3	BLOCKS 9 AND 44 TDP: 1(2)P-29
AF--TDP-FR--1P29	3.211E-002	4	BLOCK 9 TDP 1P29
AF--TDP-FR--2P29	3.211E-002	4	BLOCK 44 TDP 2P29
AF--TDP-FS--1P29	4.310E-003	3	BLOCK 9 TDP 1P29
AF--TDP-FS--2P29	4.310E-003	3	BLOCK 44 TDP 2P29
AF--TDP-TM--1P29	7.760E-003	3	BLOCK 9 TDP 1P29
AF--TDP-TM--2P29	7.760E-003	3	BLOCK 44 2P29
AF--VLV-OC---001	2.989E-006	4	BLOCK 35 RECIRC LINE FROM ALL AFW PUMPS TO CSTS
AF--VLV-OC---002	2.989E-006	4	BLOCK 35 RECIRC LINE FROM ALL AFW PUMPS TO CSTS
AF--VLV-OC---003	2.989E-006	4	BLOCK 1 "A" CST EXIT ISOLATION VALVE
AF--VLV-OC---005	2.989E-006	4	BLOCK 3 "A" CST MAN VLV TO ALL AFW PUMPS
AF--VLV-OC---006	2.989E-006	4	BLOCK 4 "B" CST MAN VLV TO ALL AFW PUMPS
AF--VLV-OC---008	2.989E-006	4	BLOCK 2 "B" CST EXIT ISOLATION VALVE
AF--VLV-OC---009	2.989E-006	4	BLOCK 35 RECIRC LINE FROM ALL AFW PUMPS TO CSTS
AF--VLV-OC---027	2.989E-006	4	BLOCK 16 P38A MIN FLOW RECIRC LINE 1-AF-00027
AF--VLV-OC---039	2.989E-006	4	BLOCK 14 MANUAL ISOLATION VALVE TO MDP P38A
AF--VLV-OC---040	2.989E-006	4	BLOCK 20 P38B MIN FLOW RECIRC LINE 1-AF-00040
AF--VLV-OC---052	2.989E-006	4	BLOCK 18 MANUAL ISOLATION VALVE TO MDP P38B
AF--VLV-OC-1-015	2.989E-006	4	BLOCK 9 MIN FLOW RECIRC LINE 1-AF-00015
AF--VLV-OC-1-018	2.989E-006	4	BLOCK 10 MAN. VLV FROM 1P29 TO "A" STEAM GENERATOR
AF--VLV-OC-1-019	2.989E-006	4	BLOCK 11 MAN. VLV FROM 1P-29 TO "B" STEAM GENERATOR
AF--VLV-OC-1-026	2.989E-006	4	BLOCK 5 MANUAL ISOLATION VALVE TO TDP 1P-29
AF--VLV-OC-1-031	2.989E-006	4	BLOCK 17 GLOBE VLV FROM P38A TO UNIT 1"A" STEAM GENERATOR
AF--VLV-OC-1-044	2.989E-006	4	BLOCK 21 FROM P38B TO UNIT 1 "B" STEAM GENERATOR
AF--VLV-OC-2-032	2.989E-006	4	BLOCK 59 GLOBE VLV FROM P38A TO UNIT 2"A" STEAM GENERATOR
AF--VLV-OC-2-045	2.989E-006	4	BLOCK 58 FROM P38B TO UNIT 2 "B" STEAM GENERATOR
AF--VLV-OC-2-053	2.989E-006	4	BLOCK 44 MIN FLOW RECIRC LINE 2-AF-00053
AF--VLV-OC-2-056	2.989E-006	4	BLOCK 41 MAN. VLV FROM 2P-29 TO U2 "A" STEAM GENERATOR
AF--VLV-OC-2-057	2.989E-006	4	BLOCK 55 MAN. VLV FROM 2P-29 TO U2 "B" STEAM GENERATOR
AF--VLV-OC-2-064	2.989E-006	4	BLOCK 48 MANUAL ISOLATION VALVE TO TDP 2P-29
AF--VLV-RE---002	1.000E-003	3	BLOCK 35 RECIRC LINE FROM ALL AFW PUMPS TO CSTS
AF--VLV-RE---003	1.000E-003	3	BLOCK 1 "A" CST EXIT ISOLATION VALVE
AF--VLV-RE---005	1.000E-003	3	BLOCK 3 "A" CST MAN VLV TO ALL AFW PUMPS
AF--VLV-RE---006	1.000E-003	3	BLOCK 4 "B" CST MAN VLV TO ALL AFW PUMPS
AF--VLV-RE---008	1.000E-003	3	BLOCK 2 "B" CST EXIT ISOLATION VALVE

AF--VLV-RE---009	1.000E-003	3	BLOCK 35 RECIRC LINE FROM ALL AFW PUMPS TO CSTS
AF--VLV-RE-1-018	1.000E-003	3	BLOCK 10 MAN. VLV FROM 1P29 TO "A" STEAM GENERATOR
AF--VLV-RE-1-019	1.000E-003	3	BLOCK 11 MAN. VLV FROM 1P-29 TO "B" STEAM GENERATOR
AF--VLV-RE-2-056	1.000E-003	3	BLOCK 41 MAN. VLV FROM 2P-29 TO U2 "A" STEAM GENERATOR
AF--VLV-RE-2-057	1.000E-003	3	BLOCK 55 MAN VLV FROM 2P-29 TO U2 "B" STEAM GENERATOR
AF-1AOV-OC--4007	1.609E-006	4	BLOCK 16 P-38A MIN FLOW RECIRC AIR OPERATED VALVE
AF-1AOV-OC--4012	1.609E-006	4	BLOCK 16 AOV FROM MDP P38A TO UNIT 1 "A"STEAM GENERATORS
AF-1AOV-OC--4014	1.609E-006	4	BLOCK 20 AOV ON MIN FLOW RECIRC LINE
AF-1AOV-OC--4019	1.609E-006	4	BLOCK 20 AOV FROM P38B TO "B" STEAM GENERATORS
AF-1AOV-OC1-4002	1.609E-006	4	BLOCK 9 1P-29 MIN FLOW RECIRC 1-AF-4002
AF-1AOV-OC2-4002	1.609E-006	4	BLOCK 44 2P-29 MIN FLOW RECIRC 2-AF-4002
AF-1CKV-CO-1-106	5.000E-007	4	BLOCK 17 FAILURE FOR BLOCK 10 VALVE 1-AF-106
AF-1CKV-CO-1-107	5.000E-007	4	BLOCK 21 FAILURE FOR BLOCK 11 VALVE 1-AF-107
AF-1CKV-CO-2-106	5.000E-007	4	BLOCK 59 FAILURES FOR BLOVK 41 VALVE 2-AF-106
AF-1CKV-CO-2-107	5.000E-007	4	BLOCK 58 FAILURE FOR BLOCK 55 VALVE 2-AF-107
AF-1MDP-CM-R38AB	1.370E-005	3	BLOCKS 16 AND 29 FAIL TO RUN COMMON MDP P-38A/B
AF-1MDP-FR---38A	6.268E-004	4	BLOCK 16 MDP P-38A
AF-1MDP-FR---38B	6.268E-004	4	BLOCK 20 MDP P-38B
AF-1MOV-CO--4020	7.704E-007	4	BLOCK 21 FAILURE FOR BLOCK 58 VAVLE 0-AF-4020
AF-1MOV-CO--4021	7.704E-007	4	BLOCK 58 FROM P38B TO UNIT 2 "B" STEAM GENERATOR
AF-1MOV-CO--4022	7.704E-007	4	BLOCK 17 FAILURE FOR BLOCK 59 VALVE 0-AF-4022
AF-1MOV-CO--4023	7.704E-007	4	BLOCK 59 FROM P38A TO UNIT 2 "A" STEAM GENERATOR
AF-1MOV-OC1-4000	2.491E-008	4	BLOCK 11 MOV FROM 1P-29 TO "B" STEAM GENERATOR
AF-1MOV-OC1-4001	2.491E-008	4	BLOCK 10 MOV FROM 1P-29 TO "A" STEAM GENERATOR
AF-1MOV-OC1-4021	2.491E-008	4	BLOCK 21 FROM P38B TO UNIT 1 "B" STEAM GENERATOR
AF-1MOV-OC1-4023	2.491E-008	4	BLOCK 17 MOV FROM P38A TO UNIT 1 "A" STEAM GENERATOR
AF-1MOV-OC2-4000	2.491E-008	4	BLOCK 55 MOV FROM 2P-29 TO UNIT 2 "B"STEAM GENERATOR
AF-1MOV-OC2-4001	2.491E-008	4	BLOCK 41 MOV FROM 2P-29 TO UNIT 2 "A"STEAM GENERATOR
AF-1MOV-OC2-4020	2.491E-008	4	BLOCK 58 FROM P38B TO UNIT 2 "B" STEAM GENERATOR
AF-1MOV-OC2-4022	2.491E-008	4	BLOCK 59 FROM P38A TO UNIT 2 "A" STEAM GENERATOR
AF-1PC--NO--4012	3.335E-006	4	BLOCK 16 P38A PC-4012
AF-1PC--NO--4019	3.335E-006	4	BLOCK 20 P38B PC-4019
AF-1PQ--LP--4012	1.084E-006	4	POWER SUPPLY PQ-4012 FAILURE
AF-1PQ--LP--4019	1.084E-006	4	BLOCK 20 FOR P38B POWER SUPPLY PQ-4019
AF-1PT--NO--4012	2.048E-006	4	BLOCK 16 MDP P38A PRESSURETRANSMITTERPT-4012
AF-1PT--NO--4019	2.048E-006	4	BLOCK 20 P38B PRESSURE TRANSMITTER
AF-1PT--SA--4042	1.050E-005	4	BLOCK 16 MDP P38A PRESSURE TRANSMITTER

AF-1PT--SA--4043	1.050E-005	4	BLOCK 20 P38B PT 0-PT-4043
AF-1PT--SA1-4044	1.050E-005	4	BLOCK 9 TDP 1P29 PRESSURETRANSMITTER1-PT-4044
AF-1PT--SA2-4044	1.050E-005	4	BLOCK 44 TDP 2P-29 PRESSURETRANSMITTER2-PT-4044
AF-1TDP-CMFR-P29	3.110E-005	3	BLOCKS 9 AND 44 TDPS 1(2)P-29
AF-1TDP-FR-01P29	1.359E-003	4	BLOCK 9 TDP 1P29
AF-1TDP-FR-02P29	1.359E-003	4	BLOCK 44 TDP 2P29
AF-1VLV-OC---001	1.245E-007	4	BLOCK 35 RECIRC LINE FROM ALL AFW PUMPS TO CSTS
AF-1VLV-OC---002	1.245E-007	4	BLOCK 35 RECIRC LINE FROM ALL AFW PUMPS TO CSTS
AF-1VLV-OC---003	1.245E-007	4	BLOCK 1 "A" CST EXIT ISOLATION VALVE
AF-1VLV-OC---005	1.245E-007	4	BLOCK 3 "A" CST MAN VLV TO ALL AFW PUMPS
AF-1VLV-OC---006	1.245E-007	4	BLOCK 4 "B" CST MAN VLV TO ALL AFW PUMPS
AF-1VLV-OC---008	1.245E-007	4	BLOCK 2 "B" CST EXIT ISOLATION VALVE
AF-1VLV-OC---009	1.245E-007	4	BLOCK 35 RECIRC LINE FROM ALL AFW PUMPS TO CSTS
AF-1VLV-OC---027	1.245E-007	4	BLOCK 16 P38A MIN FLOW RECIRC LINE 1-AF-00027
AF-1VLV-OC---039	1.245E-007	4	BLOCK 14 MANUAL ISOLATION VALVE TO MDP P38A
AF-1VLV-OC---040	1.245E-007	4	BLOCK 20 P38B MIN FLOW RECIRC LINE 1-AF-00040
AF-1VLV-OC---052	1.245E-007	4	BLOCK 18 MANUAL ISOLATION VALVE TO MDP P38B
AF-1VLV-OC-1-015	1.245E-007	4	BLOCK 9 MIN FLOW RECIRC LINE 1-AF-00015
AF-1VLV-OC-1-018	1.245E-007	4	BLOCK 10 MAN. VLV FROM 1P29 TO "A" STEAM GENERATOR
AF-1VLV-OC-1-019	1.245E-007	4	BLOCK 11 MAN. VLV FROM 1P-29 TO "B" STEAM GENERATOR
AF-1VLV-OC-1-026	1.245E-007	4	BLOCK 5 MANUAL ISOLATION VALVE TO TDP 1P-29
AF-1VLV-OC-1-031	1.245E-007	4	BLOCK 17 GLOBE VLV FROM P38A TO UNIT 1"A" STEAM GENERATOR
AF-1VLV-OC-1-044	1.245E-007	4	BLOCK 21 FROM P38B TO UNIT 1 "B" STEAM GENERATOR
AF-1VLV-OC-2-032	1.245E-007	4	BLOCK 59 GLOBE VLV FROM P38A TO UNIT 2"A" STEAM GENERATOR
AF-1VLV-OC-2-045	1.245E-007	4	BLOCK 58 FROM P38B TO UNIT 2 "B" STEAM GENERATOR
AF-1VLV-OC-2-053	1.245E-007	4	BLOCK 44 MIN FLOW RECIRC LINE 2-AF-00053
AF-1VLV-OC-2-056	1.245E-007	4	BLOCK 41 MAN. VLV FROM 2P-29 TO U2 "A" STEAM GENERATOR
AF-1VLV-OC-2-057	1.245E-007	4	BLOCK 55 MAN. VLV FROM 2P-29 TO U2 "B" STEAM GENERATOR
AF-1VLV-OC-2-064	1.245E-007	4	BLOCK 48 MANUAL ISOLATION VALVE TO TDP 2P-29
AF-1VLV-OC-2-126	1.245E-007	4	BLOCK 44 MANUAL VLVFROM MAIN STEAM VLVS TO TDP 2P-29
ATWS-FLAG	1.000E+000	3	DUMMY EVENT USED TOIDENTIFY ATWS EVENTS
B-HHI-FAIL-FLAG	1.000E+000	3	FLAG FAILURE OF B RCS INJECTION
B-LHI-FAIL-FLAG	1.000E+000	3	FLAG FAILURE OF B RHR INJECTION
B-LHR-FAIL-FLAG	1.000E+000	3	FLAG FAILURE OF B RHR RECIRCULATION
CC--AOV-OC-0761A	3.862E-005	4	FLOW CONTROL VALVE CC-761A TRANSFERS CLOSED
CC--AOV-OC-0761B	3.862E-005	4	FLOW CONTROL VALVE CC-761B TRANSFERS CLOSED
CC--CKV-CC-0724A	5.000E-005	3	P-11A DISCH CHECK VLV CC-724A FAILS TOOPEN

CC--CKV-CC-0724B	5.000E-005	3	P-11B DISCH CHECK VLV CC-724B FAILS TOOPEN
CC--CKV-CC-2724A	5.000E-005	3	
CC--CKV-CC-2724B	5.000E-005	3	CHECK VALVE 2CC-724B FAILS TO OPEN
CC--CKV-OO-0724A	1.000E-003	3	P-11A DICSH CHECK VLV CC-724A FAILS TOCLOSE
CC--CKV-OO-0724B	1.000E-003	3	P-11B DISCH CHECK VLV CC-724B FAILS TOCLOSE
CC--CKV-OO-2724A	1.000E-003	3	CHECK VALVE 2CC-724A FAILS TO CLOSE
CC--CKV-OO-2724B	1.000E-003	3	
CC--HX--PG-0012A	6.301E-006	4	CCW HEAT EXCHANGER HX-12 PLUGGED
CC--HX--PG-0012B	6.301E-006	4	CCW HEAT EXCHANGER HX-12B PLUGGED
CC--HX--RP-0012A	9.454E-007	4	CCW HX-12A SHELL RUPTURE
CC--HX--RP-0012B	9.454E-007	4	
CC--MDP-CM-011AB	3.070E-006	3	P-11A AND P-11B FAIL TO RUN DUE TO COMMON CAU
CC--MDP-FR-0011A	1.308E-004	4	CCW PUMP P-11A FAILS TO RUN
CC--MDP-FR-0011B	1.308E-004	4	CCW PUMP P-11B FAILS TO RUN
CC--MDP-FR-2P11A	1.308E-004	4	CCW PUMP 2P11A FAILS TO RUN
CC--MDP-FR-2P11B	1.308E-004	4	CCW PUMP 2P11B FAILS TO RUN
CC--MDP-FS-0011A	7.500E-004	3	CCW PUMP P-11A FAILS TO START
CC--MDP-FS-0011B	7.500E-004	3	CCW PUMP P-11B FAILS TO START
CC--MDP-FS-2-11A	7.500E-004	3	
CC--MDP-FS-2-11B	7.500E-004	3	CCW PUMP 2P-11B FAILS TO START
CC--MDP-TM-0011B	1.220E-002	3	CCW PUMP P-11B TEST/MAINTENANCE UNAVAILABILIT
CC--MOV-CC-0738A	8.820E-004	3	CCW TO RHR A HX MOV FAILS TO OPEN
CC--MOV-CC-0738B	8.820E-004	3	CCW TO RHR B HX MOV FAILS TO OPEN
CC--MOV-CM-738AB	4.150E-005	3	CCW TO RHR A HX MOV FAILS DUE TO COMMON CAUSE
CC--MOV-OC-00719	5.977E-007	4	CCW CONT. SUPPLY MOV CC-719 TRANSFERS CLOSED
CC--MOV-OC-0738A	5.977E-007	4	CCW TO RHR A HX MOV TRANSFERS CLOSED
CC--MOV-OC-0738B	5.977E-007	4	CCW TO RHR B HX MOV TRANSFERS CLOSED
CC--MOV-OC-0754A	5.977E-007	4	CCW TO RCP A MOV CC-754A TRANSFERS CLOSED
CC--MOV-OC-0754B	5.977E-007	4	CCW TO RCP B MOV CC-754B TRANSFERS CLOSED
CC--MOV-OC-0759A	5.977E-007	4	CCW FROM RCP A MOV CC-759A TRANSFERS CLOSED
CC--MOV-OC-0759B	5.977E-007	4	CCW FROM RCP B MOV CC-759B TRANSFERS CLOSED
CC--MV--CC-0722A	4.406E-004	3	MANUAL VALVE CC-722A FAILS TO OPEN
CC--MV--CC-0722B	4.406E-004	3	MANUAL VALVE CC-722B FAILS TO OPEN
CC--MV--OO-00774	4.406E-004	3	MANUAL VALVE CC-774FAILS TO CLOSE
CC--MV--OO-0726A	4.406E-004	3	MANUAL VALVE CC-726A FAILS TO CLOSE
CC--MV--OO-0726B	4.406E-004	3	
CC--MV--OO-0728A	4.406E-004	3	MANUAL VALVE CC-728A FAILS TO CLOSE

CC--MV--OO-0728B	4.406E-004	3	
CC--PIP-RP-HEADR	2.880E-008	4	CCW HEADER PIPE OR VALVE RUPTURE
CC--PS--FT-00639	3.000E-007	3	PRESSURE SWITCH PIC-639 FAILS TO OPEN
CC--PS--FT-006XX	3.000E-007	3	
CC--REL-FT-639X2	3.000E-004	3	RELAY PC-639-X2 FAILS TO DE-ENERGIZE
CC--REL-FT-6XXX2	3.000E-004	3	
CC--T---RP-00012	1.200E-005	3	CCW SURGE TANK (T-12) RUPTURE
CC--VLV-OC-0739A	2.989E-006	4	MANUAL VALVE 739A TRANSFERS CLOSED
CC--VLV-OC-0739B	2.989E-006	4	MANUAL VALVE 739B TRANSFERS CLOSED
CC--VLV-OC-0842A	2.989E-006	4	MANUAL VALVE 842A TRANSFERS CLOSED
CC--VLV-OC-0842B	2.989E-006	4	MANUAL VALVE 842B TRANSFERS CLOSED
CC--VLV-RE-HX11A	1.000E-003	3	PRE-INITIATOR FAILURE TO RESTORE VALVES FOR HX11A
CC--VLV-RE-HX11B	1.000E-003	3	PRE-INITIATOR FAILURE TO RESTORE VALVES FOR HX11B
CCI-MDP-CM--ABAB	0.000E+000	3	CCW PUMPS 1+2P-11A+B FAIL TO RUN DUE TO CCF
CCW-SYS-PR-LOWER	5.000E-001	3	CCW PRESSURE LOWER THAN WASTE GAS PRESS PRESS
CD	1.000E+000	3	CD FLAG
CI--CPP-LK---ANY	1.200E-004	3	ISOLATION FAILURE OF CATEGORY A PEN. PENETRAT
CI--EOP-FO-00027	5.000E-002	3	OPER. FAILS TO CLOSE WL-1721 EOP-0 STEP 27
COREUNCOVER-2HR	2.700E-004	3	CORE UNCOVERED AT 2HOURS
COREUNCOVER-4HR	9.000E-004	3	CORE UNCOVERED AT 4HRS
COREUNCOVER-5HR	1.500E-003	3	CORE UNCOVERED AT 5HOURS
COREUNCOVER-7HR	4.100E-003	3	CORE UNCOVERED AT 7HOURS
CS--AOV-CC-00480	1.732E-003	3	BYPASS VALVE AOV CS-480 FAILS TO OPEN
CS--AOV-CC-00481	1.732E-003	3	BYPASS VALVE AOV CS-481 FAILS TO OPEN
CS--AOV-CM-480-1	8.230E-005	3	CS-480 AND CS-481 FAIL TO OPEN DUE TO CCF
CS--CKV-CC-2189A	5.000E-005	3	CHECK VALVE CS-2189A FAILS TO OPEN
CS--CKV-CC-2190A	5.000E-005	3	CHECK VALVE CS-2190A FAILS TO OPEN
CS--CKV-CC-466AA	5.000E-005	3	CHECK VALVE CS-466AA FAILS TO OPEN
CS--CKV-CC-466BB	5.000E-005	3	CHECK VALVE CS-466BB FAILS TO OPEN
CS--CKV-CC-476AA	5.000E-005	3	CHECK VALVE CS-476AA FAILS TO OPEN
CS--CKV-CC-476BB	5.000E-005	3	CHECK VALVE CS-476BB FAILS TO OPEN
CS--CKV-CM-8990A	2.350E-006	3	CCF OF DISCH CKVS FO
CS--CKV-OO-0017A	1.000E-003	3	CHECK VALVE CS-17A FAILS TO CLOSE
CS--CKV-OO-0022A	1.000E-003	3	CHECK VALVE CS-22A FAILS TO CLOSE
CS--CKV-OO-2189A	1.000E-003	3	CHECK VALVE CS-2189A FAILS TO CLOSE
CS--CKV-OO-2190A	1.000E-003	3	CHECK VALVE CS-2190A FAILS TO CLOSE
CS--CONDVAC-LOST	9.000E-004	3	COND. PUMP FAULTS DUE TO LOSS OF CONDENSER

CS--MDP-CM-P25AB	8.500E-005	3	COND. PUMPS P-25A AND P-25B FAIL DUE TO CCF
CS--MDP-CM-R28AB	1.740E-005	3	MFW PMPS P-28A/P-28B FAIL TO RUN DUE TO CCF
CS--MDP-CM-S28AB	1.400E-003	3	MFW PUMPS P-28A/B FAIL TO START DUE TOCCF
CS--MDP-FR-0025A	7.389E-003	4	CONDENSATE PUMP P-25A FAILS TO RUN
CS--MDP-FR-0025B	7.389E-003	4	CONDENSATE PUMP P-25B FAILS TO RUN
CS--MDP-FR-0028A	7.389E-003	4	MAIN FEEDWATER PUMPP-28A FAILS TO RUN
CS--MDP-FR-0028B	7.389E-003	4	MAIN FEEDWATER PUMPP-28B FAILS TO RUN
CS--MDP-FS-0028A	2.990E-002	3	MFW PUMP P-28A FAILS TO START
CS--MDP-FS-0028B	2.990E-002	3	MFW PUMP P-28B FAILS TO START
CS--MOV-CC-02189	6.291E-003	3	MOV CS-2189 FAILS TO OPEN
CS--MOV-CC-02190	6.291E-003	3	MOV CS-2190 FAILS TO OPEN
CS--MOV-CM-89-90	2.960E-004	3	MFP DISCH MOVS FTO DUE TO CCF
CS--MOV-OC-02189	5.977E-007	4	MOV CS-2189 FAILS TO REMAIN OPEN
CS--MOV-OC-02190	5.977E-007	4	MOV CS-2190 FAILS TO REMAIN OPEN
CV--AOV-CC-00142	1.732E-003	3	CV-142 FAILS CLOSEDFROM THROTTLE POSI TION
CV--AOV-CC-00296	1.732E-003	3	AUX. SPRAY VALVE CV-296 FAILS TO OPEN
CV--AOV-CO-00133	3.862E-005	4	CV-133 FAILS OPEN CI PEN. 8
CV--AOV-CO-0110C	3.862E-005	4	CV-110C FROM VCT SPURIOUSLY OPENS
CV--AOV-OC-00142	3.862E-005	4	CV-142 FAILS TO OPEN FROM THROTTLE POSITION
CV--AOV-OC-0110A	3.862E-005	4	AOV CV-110A SPURIOUS OPERATION
CV--AOV-OC-0110B	3.862E-005	4	AOV CV-110B SPURIOUS OPERATION
CV--CKV-CC-00297	5.000E-005	3	CHECK VALVE CV-297 FAILS TO OPEN
CV--CKV-CC-00355	5.000E-005	3	CHK VLV CV-355 FAILS TO OPEN (P-2A - B- C SUCTIO
CV--CKV-CC-00357	5.000E-005	3	CV-357 (RWST TO P-2A - B - C) FAILS TOOPEN
CV--CKV-CC-00370	5.000E-005	3	CHECK VALVE CV-370 FAILS TO OPEN
CV--CKV-CC-0304A	5.000E-005	3	RCP SEAL INJ. CHK VLV CV-304A FAILS TOOPEN
CV--CKV-CC-0304B	5.000E-005	3	RCP SEAL INJ. CHK VLV CV-304B FAILS TOOPEN
CV--CKV-CC-0304C	5.000E-005	3	RCP SEAL INJ. CHK VLV CV-304C FAILS TOOPEN
CV--CKV-CC-0304D	5.000E-005	3	RCP SEAL INJ. CHK VLV CV-304D FAILS TOOPEN
CV--CKV-CC-0333A	5.000E-005	3	BORIC ACID CHECK VALVE CV-333A FAILS TO OPEN
CV--CKV-CC-0333B	5.000E-005	3	BORIC ACID CHECK VALVE CV-333B FAILS TO OPEN
CV--CKV-CM-333AB	2.350E-006	3	CCF OF CHK VLV CV-333A AND CV-333B
CV--F---PG-000F3	9.741E-005	4	BORIC ACID FILTER F-3 PLUGS
CV--MDP-CM-P2A2B	1.300E-004	3	CCF OF 2 OF 2 CHARGING PUMPS (M=2)
CV--MDP-CM-P2A2C	1.300E-004	3	
CV--MDP-CM-P2B2C	1.300E-004	3	
CV--MDP-CM-P4A4B	8.500E-005	3	CCF OF BORIC ACID TRANSFER PUMPS P4A -P4B

CV--MDP-FR-0002A	1.396E-003	4	CHARGING PUMP P-2A FAILS TO RUN (24 HRS)
CV--MDP-FR-0002B	1.396E-003	4	CHARGING PUMP P-2B FAILS TO RUN (24 HRS)
CV--MDP-FR-0002C	1.396E-003	4	CHARGING PUMP P-2C FAILS TO RUN (24 HRS)
CV--MDP-FR-0004A	8.157E-004	4	BORIC ACID XFER PUMP P-4A FAILS RUN (24 HRS)
CV--MDP-FR-0004B	8.157E-004	4	BORIC ACID XFER PUMP P-4B FAILS RUN (24 HRS)
CV--MDP-FS-0002A	2.060E-003	3	CHARGING PUMP P-2A FAILS TO START
CV--MDP-FS-0002B	2.060E-003	3	CHARGING PUMP P-2B FAILS TO START
CV--MDP-FS-0002C	2.060E-003	3	CHARGING PUMP P-2C FAILS TO START
CV--MDP-FS-0004A	1.400E-003	3	BORIC ACID PUMP P-4A FAILS TO START
CV--MDP-FS-0004B	1.400E-003	3	BORIC ACID TRANSFERPUMP P-4B FAILS ST ART
CV--MDP-TM-0002C	9.990E-002	3	CHARGING PUMP P-2C TEST/MAINT. UNAVAIL.
CV--MDP-TM-0004A	5.350E-003	3	BORIC ACID XFER PUMP P-4A TEST/ MAINT.
CV--MDP-TM-0004B	5.360E-003	3	BORIC ACID XFER PUMP P-4B TEST/ MAINT.
CV--MOV-CC-0112B	2.570E-003	3	MOV CV-112B FAILS TO OPEN
CV--MOV-OC-01298	5.977E-007	4	CHARGING ISOLATION MOV CV-1298 FAILS CLOSED
CV--MOV-OO-0112C	2.570E-003	3	MOV CV-112C FAILS TO CLOSE
DG--DG--CM-G0102	2.050E-003	3	COMMON MODE FAILURE FOR DGS G-01 AND G-02
DG--DG--CM-G0304	2.050E-003	3	COMMON MODE FAILURE FOR DGS G-03 AND G-04
DG--DG--FR---G01	4.044E-002	4	DIESEL GENERATOR G-01 FAILS TO RUN
DG--DG--FR---G02	4.044E-002	4	DIESEL GENERATOR G-02 FAILS TO RUN
DG--DG--FR---G03	4.044E-002	4	DIESEL GENERATOR G-03 FAILS TO RUN
DG--DG--FR---G04	4.044E-002	4	DIESEL GENERATOR G-04 FAILS TO RUN
DG--DG--FS---G01	1.260E-002	3	DIESEL GENERATOR GO1 FAILS TO START
DG--DG--FS---G02	1.260E-002	3	DIESEL GENERATOR GO2 FAILS TO START
DG--DG--FS---G03	1.260E-002	3	DIESEL GENERATOR GO3 FAILS TO START
DG--DG--FS---G04	1.260E-002	3	DIESEL GENERATOR GO4 FAILS TO START
DG--DG--TM---G01	4.720E-002	3	DIESEL GENERATOR G-01 TEST OR MAINTENANCE
DG--DG--TM---G02	4.720E-002	3	DIESEL GENERATOR G-02 TEST OR MAINTENANCE
DG--DG--TM---G03	4.720E-002	3	DIESEL GENERATOR G-03 TEST OR MAINTENANCE
DG--DG--TM---G04	4.720E-002	3	DIESEL GENERATOR G-04 TEST OR MAINTENANCE
DG--HX--PG--265A	1.890E-004	4	RADIATOR HX-265A FOR G-03
DG--HX--PG--265B	1.890E-004	4	RADIATOR HX-265B FOR G-04
DG--HX--RP--265A	9.454E-007	4	RADIATOR HX-265A FOR G-03 RUPTURES DURING OPERATION
DG--HX--RP--265B	9.454E-007	4	RADIATOR HX-265B FOR G-04 RUPTURES DURING OPERATION
DGS-TO-A05-A06	1.000E+000	3	FAILURE OF DGS TO 1/2A05 AND 1/2A06 FLAG
ESF-AMP-NO-0401A	2.000E-005	4	DANA AMPLIFIER TM-401A FAILS
ESF-AMP-NO-0402A	2.000E-005	4	DANA AMPLIFIER TM-402A FAILS

ESF-AMP-NO-0403A	2.000E-005	4	DANA AMPLIFIER TM-403A FAILS
ESF-AMP-NO-0404A	2.000E-005	4	DANA AMPLIFIER TM-404A FAILS
ESF-AMP-NO-0405A	2.000E-005	4	DANA AMPLIFIER TM-405A FAILS
ESF-AMP-NO-0406A	2.000E-005	4	DANA AMPLIFIER TM-406A FAILS
ESF-AMP-NO-0407A	2.000E-005	4	DANA AMPLIFIER TM-407A FAILS
ESF-AMP-NO-0408A	2.000E-005	4	DANA AMPLIFIER TM-408A FAILS
ESF-AMP-NO-0468B	2.000E-005	4	ISOLATION AMP PM-468B FAILURE
ESF-AMP-NO-0478B	2.000E-005	4	ISOLATION AMP PM-478B FAILURE
ESF-AMP-NO-401BB	2.000E-005	4	E/I CONVERTER TM-401BB FAILS
ESF-AMP-NO-402BB	2.000E-005	4	E/I CONVERTER TM-402BB FAILS
ESF-AMP-NO-403BB	2.000E-005	4	E/I CONVERTER TM-403BB FAILS
ESF-AMP-NO-404BB	2.000E-005	4	E/I CONVERTER TM-404BB FAILS
ESF-BIS-FT-0141B	3.000E-007	3	BISTABLE LC-141B FAILS TO TRANSFER
ESF-BIS-FT-112AB	3.000E-007	3	BISTABLE LC-112A/B FAILS TO TRANSFER
ESF-BIS-FT-401AD	3.000E-007	3	BISTABLE TC-401A/D FAILS TO TRANSFER
ESF-BIS-FT-402AD	3.000E-007	3	BISTABLE TC-401A/D FAILS TO TRANSFER
ESF-BIS-FT-403AD	3.000E-007	3	BISTABLE TC-403A/D FAILS TO TRANSFER
ESF-BIS-FT-404AD	3.000E-007	3	BISTABLE TC-404A/D FAILS TO TRANSFER
ESF-BIS-FT-429CD	3.000E-007	3	BISTABLE PC-429C/D FAILS TO TRANSFER
ESF-BIS-FT-430EF	3.000E-007	3	BISTABLE PC-430E/F FAILS TO TRANSFER
ESF-BIS-FT-431GI	3.000E-007	3	BISTABLE PC-431G/I FAILS TO TRANSFER
ESF-BIS-FT-474AB	3.000E-007	3	BISTABLE FC-474A/B FAILS TO TRANSFER
ESF-BIS-FT-475AB	3.000E-007	3	BISTABLE FC-475A/B FAILS TO TRANSFER
ESF-BIS-FT-946AB	3.000E-007	3	BISTABLE PC-946A/B FAILS
ESF-BIS-FT-948AB	3.000E-007	3	BISTABLE PC-948A/B FAILS
ESF-BIS-FT-950AB	3.000E-007	3	BISTABLE PC-950A/B FAILS
ESF-BIS-SA---P20	1.200E-006	4	BISTABLE P-20 SPURIOUSLY OPERATES
ESF-CAB-TM-TRN-A	0.000E+000	3	TRAIN A SAFETY INJECTION IN TEST/MAINTENANCE
ESF-CAB-TM-TRN-B	0.000E+000	3	TRAIN B SAFETY INJECTION IN TEST/MAINTENANCE
ESF-CTL-NO-0468C	1.334E-005	4	PRESSURE CONTROLLERPC-468C FAILURE
ESF-CTL-NO-0478C	1.334E-005	4	PRESSURE CONTROLLERPC-478C FAILURE
ESF-FT--NO-00474	4.916E-005	4	STEAM FLOW TRANSMITTTER FT-474 FAILS
ESF-FT--NO-00475	4.916E-005	4	STEAM FLOW TRANSMITTER FT-475 FAILS
ESF-LPS-NO-PQ468	4.337E-006	4	LOOP POWER SUPPLY PQ-468 FAILURE
ESF-LPS-NO-PQ478	4.337E-006	4	LOOP POWER SUPPLY PQ-478 FAILURE
ESF-LS--FT-3930B	3.000E-007	3	LEVEL SWITCH LS-3930B FAILS TO TRANSFER
ESF-LS--FT-3931B	3.000E-007	3	LEVEL SWITCH LS-3931B FAILS TO TRANSFER

ESF-LS--FT-3991A	3.000E-007	3	LEVEL SWITCH LS-3991A FAUKS TI TRANSFER
ESF-LS--FT-3991B	3.000E-007	3	LEVEL SWITCH LS-3991B FAILS TO TRANSFER
ESF-LT--NO-00112	8.193E-006	4	LEVEL TRANSMITTER LT-112 FAILURE
ESF-LT--NO-00141	8.193E-006	4	LEVEL TRANSMITTER LT-141 FAILURE
ESF-OPR-RE-SITSW	1.000E-003	3	FAILURE TO RESTORE TEST SWITCHES AFTERT/M
ESF-PT--NO-00468	8.193E-006	4	PRESSURE TRANSMITTER PT-468 FAILURE
ESF-PT--NO-00478	8.193E-006	4	PRESSURE TRANSMITTER PT-478 FAILURE
ESF-PT--NO-00946	8.193E-006	4	PRESSURIZER PRESSURE TRANSMITTER PT-946 FAILS
ESF-PT--NO-00948	8.193E-006	4	PRESSURIZER PRESSURE TRANSMITTER PT-948 FAILS
ESF-PT--NO-00950	8.193E-006	4	PRESSURIZER PRESSURE TRANSMITTER PT-950 FAILS
ESF-REL-CM--27A5	3.880E-006	3	UV RELAYS 271/A05 AND 272/A05 FAIL DUETO CCF
ESF-REL-CM--27A6	3.880E-006	3	RELAYS 271/A06 AND 272/A06 FAIL DUE TOCCF
ESF-REL-CM--SWAB	1.410E-005	3	RELAYS SW-A AND SW-B FAIL DUE TO CCF
ESF-REL-CM--X1A5	3.880E-006	3	RELAYS 271X1/A05 AND 272X1/A05 FAIL DUE TO CC
ESF-REL-CM--X1A6	3.880E-006	3	RELAYS 271X1/A06 AND 272X1/A06 FAIL DUE TO CC
ESF-REL-CM--X2A5	3.880E-006	3	RELAYS 271X2/A05 AND 272X2/A05 FAIL DUE TO CC
ESF-REL-CM--X2A6	3.880E-006	3	RELAYS 271X2/A06 AND 272X2/A06 FAIL DUE TO CC
ESF-REL-CM-00CEA	6.750E-006	3	PC-429C-XA AND PC-430E-XA FAIL DUE TO CCF
ESF-REL-CM-00CEB	6.750E-006	3	PC-429C-XB AND PC-430E-XB FAIL DUE TO CCF
ESF-REL-CM-00CGA	6.750E-006	3	PC-429C-XA AND PC-431G-XA FAIL DUE TO CCF
ESF-REL-CM-00CGB	6.750E-006	3	PC-429C-XB AND PC-431G-XB FAIL DUE TO CCF
ESF-REL-CM-00EGA	6.750E-006	3	PC-430E-XA AND PC-431G-XA FAIL DUE TO CCF
ESF-REL-CM-00EGB	6.750E-006	3	PC-430E-XB AND PC-431G-XB FAIL DUE TO CCF
ESF-REL-CM-0CEGA	2.160E-005	3	PC-429C - 430E - 431G-XA FAIL DUE TO CCF
ESF-REL-CM-0CEGB	2.160E-005	3	PC-429C - 430E - 431G-XB FAIL DUE TO CCF
ESF-REL-CM-10-11	8.130E-007	3	SLAVE RELAY SI-10X AND SI-11X FAIL DUETO CCF
ESF-REL-CM-10-12	8.130E-007	3	SLAVE RELAY SI-10X AND SI-12X FAIL DUETO CCF
ESF-REL-CM-10-14	8.130E-007	3	SLAVE RELAY SI-10X AND SI-14X FAIL DUETO CCF
ESF-REL-CM-10-21	8.130E-007	3	SLAVE RELAY SI-10X AND SI-21X FAIL DUETO CCF
ESF-REL-CM-10-22	8.130E-007	3	SLAVE RELAY SI-10X AND SI-22X FAIL DUETO CCF
ESF-REL-CM-11-12	8.130E-007	3	SLAVE RELAY SI-11X AND SI-12X FAIL DUETO CCF
ESF-REL-CM-11-13	8.130E-007	3	SLAVE RELAY SI-11X AND SI-13X FAIL DUETO CCF
ESF-REL-CM-11-14	8.130E-007	3	SLAVE RELAY SI-11X AND SI-14X FAIL DUETO CCF
ESF-REL-CM-11-20	8.130E-007	3	SLAVE RELAY SI-11X AND SI-20X FAIL DUETO CCF
ESF-REL-CM-11-21	8.130E-007	3	SLAVE RELAY SI-11X AND SI-21X FAIL DUETO CCF
ESF-REL-CM-11-22	8.130E-007	3	SLAVE RELAY SI-11X AND SI-22X FAIL DUETO CCF
ESF-REL-CM-11-23	8.130E-007	3	SLAVE RELAY SI-11X AND SI-23X FAIL DUETO CCF

ESF-REL-CM-11-24	8.130E-007	3	SLAVE RELAY SI-11X AND SI-24X FAIL DUETO CCF
ESF-REL-CM-11X1A	3.880E-006	3	RELAYS 271X1/A05 AND 271X1/A06 FAIL DUE TO CC
ESF-REL-CM-11X2A	3.880E-006	3	RELAYS 271X2/A05 AND 271X2/A06 FAIL DUE TO CC
ESF-REL-CM-12-13	8.130E-007	3	SLAVE RELAY SI-12X AND SI-23X FAIL DUETO CCF
ESF-REL-CM-12-14	8.130E-007	3	SLAVE RELAY SI-12X AND SI-14X FAIL DUETO CCF
ESF-REL-CM-12-20	8.130E-007	3	SLAVE RELAY SI-12X AND SI-20X FAIL DUETO CCF
ESF-REL-CM-12-21	8.130E-007	3	SLAVE RELAY SI-12X AND SI-21X FAIL DUETO CCF
ESF-REL-CM-12-22	8.130E-007	3	SLAVE RELAY SI-12X AND SI-22X FAIL DUETO CCF
ESF-REL-CM-12-23	8.130E-007	3	SLAVE RELAY SI-12X AND SI-23X FAIL DUETO CCF
ESF-REL-CM-12-24	8.130E-007	3	SLAVE RELAY SI-12X AND SI-24X FAIL DUETO CCF
ESF-REL-CM-12X1A	3.880E-006	3	RELAYS 271X1/A05 AND 272X1/A06 FAIL DUE TO CC
ESF-REL-CM-12X2A	3.880E-006	3	RELAYS 271X2/A05 AND 272X2/A06 FAIL DUE TO CC
ESF-REL-CM-13-14	8.130E-007	3	SLAVE RELAY SI-13X AND SI-14X FAIL DUETO CCF
ESF-REL-CM-13-21	8.130E-007	3	SLAVE RELAY SI-13X AND SI-21X FAIL DUETO CCF
ESF-REL-CM-13-22	8.130E-007	3	SLAVE RELAY SI-13X AND SI-22X FAIL DUETO CCF
ESF-REL-CM-14-20	8.130E-007	3	SLAVE RELAY SI-14X AND SI-20X FAIL DUETO CCF
ESF-REL-CM-14-21	8.130E-007	3	SLAVE RELAY SI-14X AND SI-21X FAIL DUETO CCF
ESF-REL-CM-14-22	8.130E-007	3	SLAVE RELAY SI-14X AND SI-22X FAIL DUETO CCF
ESF-REL-CM-14-23	8.130E-007	3	SLAVE RELAY SI-14X AND SI-23X FAIL DUETO CCF
ESF-REL-CM-14-24	8.130E-007	3	SLAVE RELAY SI-14X AND SI-24X FAIL DUETO CCF
ESF-REL-CM-20-21	8.130E-007	3	SLAVE RELAY SI-20X AND SI-21X FAIL DUETO CCF
ESF-REL-CM-20-22	8.130E-007	3	SLAVE RELAY SI-20X AND SI-22X FAIL DUETO CCF
ESF-REL-CM-21-22	8.130E-007	3	SLAVE RELAY SI-21X AND SI-22X FAIL DUETO CCF
ESF-REL-CM-21-23	8.130E-007	3	SLAVE RELAY SI-21X AND SI-23X FAIL DUETO CCF
ESF-REL-CM-21-24	8.130E-007	3	SLAVE RELAY SI-21X AND SI-24X FAIL DUETO CCF
ESF-REL-CM-21X1A	3.880E-006	3	RELAYS 272X1/A05 AND 271X1/A06 FAIL DUE TO CC
ESF-REL-CM-21X2A	3.880E-006	3	RELAYS 272X2/A05 AND 271X2/A06 FAIL DUE TO CC
ESF-REL-CM-22-23	8.130E-007	3	SLAVE RELAY SI-22X AND SI-23X FAIL DUETO CCF
ESF-REL-CM-22-24	8.130E-007	3	SLABE RELAY SI-22X AND SI-24X FAL DUE TO CCF
ESF-REL-CM-22X1A	3.880E-006	3	RELAYS 272X1/A05 AND 272X1/A06 FAIL DUE TO CC
ESF-REL-CM-22X2A	3.880E-006	3	RELAYS 272X2/A05 AND 272X2/A06 FAIL DUE TO CC
ESF-REL-CM-2711A	3.880E-006	3	RELAYS 271/A05 AND 271/A06 FAIL DUE TOCCF
ESF-REL-CM-2712A	3.880E-006	3	RELAYS 271/A05 AND 272/A06 FAIL DUE TOCCF
ESF-REL-CM-271A5	2.760E-006	3	271 - 272/A05 AND 271/A06 FAIL DUE TO CCF
ESF-REL-CM-271A6	2.760E-006	3	271/A05 AND 271 - 272/A06 FAIL DUE TO CCF
ESF-REL-CM-2721A	3.880E-006	3	RELAYS 272/A05 AND 271/A06 FAIL DUE TOCCF
ESF-REL-CM-2722A	3.880E-006	3	RELAYS 272/A05 AND 272/A06 FAIL DUE TOCCF

ESF-REL-CM-272A5	2.760E-006	3	271 - 272/A05 AND 272/A06 FAIL DUE TO CCF
ESF-REL-CM-272A6	2.760E-006	3	272/A05 AND 271 - 272/A06 FAIL DUE TO CCF
ESF-REL-CM-27A56	2.030E-005	3	271 - 272/A05 AND 271 - 272/A06 FAIL DUE T0 CCF
ESF-REL-CM-38AB1	1.410E-005	3	RELAYS P38A-1X AND P38B-1X FAIL DUE TOCCF
ESF-REL-CM-8615B	1.410E-005	3	RELAYS 86-B1B AND 86-B5B FAIL DUE TO CCF
ESF-REL-CM-86GX1	1.410E-005	3	RELAYS 86/TG-01 AND86/X-01 FAIL DUE T O CCF
ESF-REL-CM-A51X1	2.760E-006	3	271 - 272X1/A05 AND271X1/A06 FAIL DUE TO CCF
ESF-REL-CM-A51X2	2.760E-006	3	271 - 272X2/A05 AND271X2/A05 FAILS DU E TO CCF
ESF-REL-CM-A52X1	2.760E-006	3	271 - 272X1/A05 AND272X1/A06 FAIL DUE TO CCF
ESF-REL-CM-A52X2	2.760E-006	3	271 - 272X2/A05 AND272X2/A06 FAIL DUE TO CCF
ESF-REL-CM-A61X1	2.760E-006	3	271X1/A05 AND 271 -272X1/A06 FAIL DUE TO CCF
ESF-REL-CM-A61X2	2.760E-006	3	271X2/A05 AND 271 -272X2/A06 FAIL DUE TO CCF
ESF-REL-CM-A62X1	2.760E-006	3	272X1/A05 AND 271 -272X1/A06 FAIL DUE TO CCF
ESF-REL-CM-A62X2	2.760E-006	3	272X2/A05 AND 271 -272X2/A06 FAIL DUE TO CCF
ESF-REL-CM-AA-AB	3.880E-006	3	MASTER RELAYS SIA-AAND SIA-B FAIL DUE TO CCF
ESF-REL-CM-AA-MA	3.880E-006	3	MASTER RELAYS SIA-AAND SIM-A FAIL DUE TO CCF
ESF-REL-CM-AA-MB	3.880E-006	3	MASTER RELAYS SIA-AAND SIM-B FAIL DUE TO CCF
ESF-REL-CM-AABMA	2.760E-006	3	RELAYS SIA-A - SIA#NAME? UE TO CCF
ESF-REL-CM-AABMB	2.760E-006	3	RELAYS SIA-A - SIA#NAME? UE TO CCF
ESF-REL-CM-AAMAB	2.760E-006	3	RELAYS SIA-A - SIM#NAME? UE TO CCF
ESF-REL-CM-AB-MA	3.880E-006	3	MASTER RELAYS SIA-BAND SIM-A FAIL DUE TO CCF
ESF-REL-CM-AB-MB	3.880E-006	3	MASTER RELAYS SIA-BAND SIM-B FAIL DUE TO CCF
ESF-REL-CM-ABAAB	2.760E-006	3	RELAYS LCAA - LCBAAND LCAB FAIL DUE TO CCF
ESF-REL-CM-ABABB	2.760E-006	3	RELAYS LCAA - LCABAND LCBB FAIL DUE TO CCF
ESF-REL-CM-ABBAA	2.760E-006	3	RELAYS LCAA - LCABAND LCBB FAIL DUE TO CCF
ESF-REL-CM-ABBBA	2.760E-006	3	RELAYS LCAB - LCBAAND LCBB FAIL DUE TO CCF
ESF-REL-CM-ABMAB	2.760E-006	3	RELAYS SIA-B - SIM#NAME? UE TO CCF
ESF-REL-CM-LAAAB	3.880E-006	3	RELAYS LCAA AND LCAB FAIL DUE TO CCF
ESF-REL-CM-LAABA	3.880E-006	3	RELAYS LCAA AND LCBA FAIL DUE TO CCF
ESF-REL-CM-LAABB	3.880E-006	3	RELAYS LCAA AND LCBB FAIL DUE TO CCF
ESF-REL-CM-LABBA	3.880E-006	3	RELAYS LCAB AND LCBA FAIL DUE TO CCF
ESF-REL-CM-LABBB	3.880E-006	3	RELAYS LCAB AND LCBB FAIL DUE TO CCF
ESF-REL-CM-LBABB	3.880E-006	3	RELAYS LCBA AND LCBB FAIL DUE TO CCF
ESF-REL-CM-LCALL	2.030E-005	3	RELAYS LCAA - LCAB#NAME? IL DUE TO CCF
ESF-REL-CM-MA-MB	3.880E-006	3	MASTER RELAYS SIM-AAND SIM-B FAIL DUE TO CCF
ESF-REL-CM-MASTR	2.030E-005	3	SIA-A - SIM-A - SIA-B AND SIM-B FAILDUE TO CCF
ESF-REL-CM-MSAB1	1.410E-005	3	RELAYS MS-A1 AND MS#NAME?

ESF-REL-CM-MSAB2	1.410E-005	3	RELAYS MS-A2 AND MS#NAME?
ESF-REL-CM-SLAVE	1.890E-005	3	RELAYS SI-10 - 11 -12 - 13 - 14 - 20 -90
ESF-REL-CM-SWABX	1.410E-005	3	RELAYS SW-AX AND SW#NAME?
ESF-REL-CM-X1A56	2.030E-005	3	271 - 272X1/A05 AND271 - 272X1/A06 FA IL DUE TO C
ESF-REL-CM-X2A56	2.030E-005	3	271 - 272X2/A05 AND271 - 272X2/A06 FA IL DUE TO C
ESF-REL-FT---AR4	3.000E-004	3	RELAY AR4 FAILS TO ENERGIZE
ESF-REL-FT---SWA	3.000E-004	3	RELAY SW-A FAILS TOTRANSFER
ESF-REL-FT---SWB	3.000E-004	3	RELAY SW-B FAILS TOTRANSFER
ESF-REL-FT--SWAX	3.000E-004	3	RELAY SW-AX FAILS TO TRANSFER
ESF-REL-FT--SWBX	3.000E-004	3	RELAY SW-BX FAILS TO TRANSFER
ESF-REL-FT-112BX	3.000E-004	3	RELAY LC-112B-X FAILS TO TRANSFER
ESF-REL-FT-141BX	3.000E-004	3	RELAY LC-141B-X FAILS TO TRANSFER
ESF-REL-FT-1LCAA	3.000E-004	3	RELAY 1LCAA FAILS TO ENERGIZE
ESF-REL-FT-1LCAB	3.000E-004	3	RELAY 1LCAB FAILS TO ENERGIZE
ESF-REL-FT-1LCBA	3.000E-004	3	RELAY 1LCBA FAILS TO ENERGIZE
ESF-REL-FT-1LCBB	3.000E-004	3	RELAY 1LCBB FAILS TO ENERGIZE
ESF-REL-FT-1MSA1	3.000E-004	3	RELAY 1MS-A1 FAILS TO TRANSFER
ESF-REL-FT-1MSA2	3.000E-004	3	RELAY 1-MS-A2 FAILSTO TRANSFER POSITI ON
ESF-REL-FT-1MSB1	3.000E-004	3	RELAY 1MS-B1 FAILS TO TRANSFER
ESF-REL-FT-1MSB2	3.000E-004	3	RELAY 1-MS-B2 FAILSTO TRANSFER POSITI ON
ESF-REL-FT-1X1A5	3.000E-004	3	UV RELAY 1-271X1/A05 FAILS TO TRANSFER
ESF-REL-FT-1X1A6	3.000E-004	3	UV RELAY 1-271X1/A06 FAILS TO TRANSFER
ESF-REL-FT-1X1B3	3.000E-004	3	UV RELAY 1-271X1/B03 FAILS TO TRANSFER
ESF-REL-FT-1X1B4	3.000E-004	3	RELAY 1-271X1/B04 FAILS TO TRANSFER
ESF-REL-FT-1X2A5	3.000E-004	3	UV RELAY 1-271X2/A05 FAILS TO TRANSFER
ESF-REL-FT-1X2A6	3.000E-004	3	UV RELAY 1-271X2/A06 FAILS TO TRANSFER
ESF-REL-FT-1X2B3	3.000E-004	3	RELAY 1-271X2/B03 FAILS TO TRANSFER
ESF-REL-FT-1X2B4	3.000E-004	3	RELAY 1-271X2/B04 FAILS TO TRANSFER
ESF-REL-FT-1X3B3	3.000E-004	3	RELAY 1-271X3/B03 FAILS TO TRANSFER
ESF-REL-FT-1X3B4	3.000E-004	3	RELAY 1-271X3/B04 FAILS TO TRANSFER
ESF-REL-FT-1X4B3	3.000E-004	3	RELAY 1-271X4 FAILSTO TRANSFER
ESF-REL-FT-1X4B4	3.000E-004	3	RELAY 1-271X4/B04 FAILS TO TRANSFER
ESF-REL-FT-1XB03	3.000E-004	3	RELAY 1-271X/B03 FAILS TO TRANSFER
ESF-REL-FT-1XB04	3.000E-004	3	RELAY 271X/B04 FAILS TO TRANSFER
ESF-REL-FT-211B3	3.000E-004	3	RELAY 2-271X1/B03 FAILS TO TRANSFER
ESF-REL-FT-211B4	3.000E-004	3	RELAY 2-271X1/B04 FAILS TO TRANSFER
ESF-REL-FT-212B3	3.000E-004	3	RELAY 2-271X2/B03 FAILS TO TRANSFER

ESF-REL-FT-212B4	3.000E-004	3	RELAY 2-271X2/B04 FAILS TO TRANSFER
ESF-REL-FT-213B3	3.000E-004	3	RELAY 2-271X3/B03 FAILS TO TRANSFER
ESF-REL-FT-213B4	3.000E-004	3	RELAY 2-271X3/B04 FAILS TO TRANSFER
ESF-REL-FT-214B3	3.000E-004	3	RELAY 2-271X4/B03 FAILS TO TRANSFER
ESF-REL-FT-214B4	3.000E-004	3	RELAY 2-271X4/B04 FAILS TO TRANSFER
ESF-REL-FT-21A05	3.000E-004	3	RELAY 2-271/A05 FAILS TO TRANSFER
ESF-REL-FT-21A06	3.000E-004	3	RELAY 2-271/A06 FAILS TO TRANSFER
ESF-REL-FT-21B03	3.000E-004	3	RELAY 2-271/B03 FAILS TO TRANSFER
ESF-REL-FT-21B04	3.000E-004	3	RELAY 2-271/B04 FAILS TO TRANSFER
ESF-REL-FT-21XA5	3.000E-004	3	RELAY 2-271X1/A05 FAILS TO TRANSFER
ESF-REL-FT-21XA6	3.000E-004	3	RELAY 2-271X1/A06 FAILS TO TRANSFER
ESF-REL-FT-21XB3	3.000E-004	3	RELAY 2-271X/B03 FAILS TO TRANSFER
ESF-REL-FT-21XB4	3.000E-004	3	RELAY 2-271X/B04 FAILS TO TRANSFER
ESF-REL-FT-221B3	3.000E-004	3	RELAY 2-272X1/B03 FAILS TO TRANSFER
ESF-REL-FT-221B4	3.000E-004	3	RELAY 2-272X1/B04 FAILS TO TRANSFER
ESF-REL-FT-222B3	3.000E-004	3	RELAY 2-272X2/B03 FAILS TO TRANSFER
ESF-REL-FT-222B4	3.000E-004	3	RELAY 2-272X2/B04 FAILS TO TRANSFER
ESF-REL-FT-223B3	3.000E-004	3	RELAY 2-272X3/B03 FAILS TO TRANSFER
ESF-REL-FT-223B4	3.000E-004	3	RELAY 2-272X3/B04 FAILS TO TRANSFER
ESF-REL-FT-224B3	3.000E-004	3	RELAY 2-272X4/B03 FAILS TO TRANSFER
ESF-REL-FT-224B4	3.000E-004	3	RELAY 2-272X4/B04 FAILS TO TRANSFER
ESF-REL-FT-22A05	3.000E-004	3	RELAY 2-272/A05 FAILS TO TRANSFER
ESF-REL-FT-22A06	3.000E-004	3	RELAY 2-272/A06 FAILS TO TRANSFER
ESF-REL-FT-22B03	3.000E-004	3	RELAY 2-272/B03 FAILS TO TRANSFER
ESF-REL-FT-22B04	3.000E-004	3	RELAY 2-272/B04 FAILS TO TRANSFER
ESF-REL-FT-22XA5	3.000E-004	3	RELAY 2-272X1/A05 FAILS TO TRANSFER
ESF-REL-FT-22XA6	3.000E-004	3	RELAY 2-272X1/A06 FAILS TO TRANSFER
ESF-REL-FT-22XB3	3.000E-004	3	RELAY 2-272X/B03 FAILS TO TRANSFER
ESF-REL-FT-22XB4	3.000E-004	3	RELAY 2-272X/B04 FAILS TO TRANSFER
ESF-REL-FT-23A05	3.000E-004	3	RELAY 2-273/A05 FAILS TO TRANSFER
ESF-REL-FT-23A06	3.000E-004	3	RELAY 2-273/A06 FAILS TO TRANSFER
ESF-REL-FT-23B03	3.000E-004	3	RELAY 2-273/B03 FAILS TO TRANSFER
ESF-REL-FT-23B04	3.000E-004	3	RELAY 2-273/B04 FAILS TO TRANSFER
ESF-REL-FT-23XB3	3.000E-004	3	RELAY 2-273X/B03 FAILS TO TRANSFER
ESF-REL-FT-23XB4	3.000E-004	3	RELAY 2-273X/B04 FAILS TO TRANSFER
ESF-REL-FT-24A05	3.000E-004	3	RELAY 2-274/A05 FAILS TO TRANSFER
ESF-REL-FT-24A06	3.000E-004	3	RELAY 2-274/A06 FAILS TO TRANSFER

ESF-REL-FT-25A05	3.000E-004	3	RELAY 2-275/A05 FAILS TO TRANSFER
ESF-REL-FT-25A06	3.000E-004	3	RELAY 2-275/A06 FAILS TO TRANSFER
ESF-REL-FT-271A5	3.000E-004	3	UV RELAY 1-271/A05 FAILS TO TRANSFER
ESF-REL-FT-271A6	3.000E-004	3	UV RELAY 1-271/A06 FAILS TO TRANSFER
ESF-REL-FT-271B3	3.000E-004	3	RELAY 1-271/B03 FAILS TO TRANSFER
ESF-REL-FT-271B4	3.000E-004	3	RELAY 1-271/B04 FAILS TO TRANSFER
ESF-REL-FT-272A5	3.000E-004	3	UV RELAY 1-272/A05 FAIL TO TRANSFER
ESF-REL-FT-272A6	3.000E-004	3	UV RELAY 1-272/A06 FAILS TO TRANSFER
ESF-REL-FT-272B3	3.000E-004	3	RELAY 1-272/B03 FAILS TO TRANSFER
ESF-REL-FT-272B4	3.000E-004	3	RELAY 1-271/B04 FAILS TO TRANSFER
ESF-REL-FT-273A5	3.000E-004	3	RELAY 1-273/A05 FAILS TO TRANSFER
ESF-REL-FT-273A6	3.000E-004	3	RELAY 1-273/A06 FAILS TO TRANSFER
ESF-REL-FT-273B3	3.000E-004	3	RELAY 1-273/B03 FAILS TO TRANSFER
ESF-REL-FT-273B4	3.000E-004	3	RELAY 1-273/B04 FAILS TO TRANSFER
ESF-REL-FT-274A5	3.000E-004	3	RELAY 1-274/A05 FAILS TO TRANSFER
ESF-REL-FT-274A6	3.000E-004	3	RELAY 1-274/A06 FAILS TO TRANSFER
ESF-REL-FT-275A5	3.000E-004	3	RELAY 1-275/A05 FAILS TO TRANSFER
ESF-REL-FT-275A6	3.000E-004	3	RELAY 1-275/A06 FAILS TO TRANSFER
ESF-REL-FT-2X1A5	3.000E-004	3	UV RELAY 1-272X1/A05 FAILS TO TRANSFER
ESF-REL-FT-2X1A6	3.000E-004	3	UV RELAY 1-272X1/A06 FAILS TO TRANSFER
ESF-REL-FT-2X1B3	3.000E-004	3	RELAY 1-272X1/B03 FAILS TO TRANSFER
ESF-REL-FT-2X1B4	3.000E-004	3	RELAY 1-272X1/B04 FAILS TO TRANSFER
ESF-REL-FT-2X2A5	3.000E-004	3	UV RELAY 1-272X2/A05 FAILS TO TRANSFER
ESF-REL-FT-2X2A6	3.000E-004	3	UV RELAY 1-272X2/A06 FAILS TO TRANSFER
ESF-REL-FT-2X2B3	3.000E-004	3	RELAY 1-272X2/B03 FAILS TO TRANSFER
ESF-REL-FT-2X2B4	3.000E-004	3	RELAY 1-272X2/B04 FAILS TO TRANSFER
ESF-REL-FT-2X3B3	3.000E-004	3	RELAY 1-272X3/B03 FAILS TO TRANSFER
ESF-REL-FT-2X3B4	3.000E-004	3	RELAY 1-272X3/B04 FAILS TO TRANSFER
ESF-REL-FT-2X4B3	3.000E-004	3	RELAY 1-272X4/B03 FAILS TO TRANSFER
ESF-REL-FT-2X4B4	3.000E-004	3	RELAY 1-272X4/B04 FAILS TO TRANSFER
ESF-REL-FT-2XB03	3.000E-004	3	RELAY 1-272X/B03 FAILS TO TRANSFER
ESF-REL-FT-2XB04	3.000E-004	3	RELAY 1-272X/B04 FAILS TO TRANSFER
ESF-REL-FT-32BXA	3.000E-004	3	RELAY P32B-XA FAILSTO TRANSFER
ESF-REL-FT-32BXB	3.000E-004	3	RELAY P32B-XB FAILSTO TRANSFER
ESF-REL-FT-32CXA	3.000E-004	3	RELAY P32C-XA FAILSTO TRANSFER
ESF-REL-FT-32CXB	3.000E-004	3	RELAY P32C-XB FAILSTO TRANSFER
ESF-REL-FT-32EXA	3.000E-004	3	RELAY P32E-XA FAILSTO TRANSFER

ESF-REL-FT-32EXB	3.000E-004	3	RELAY P32E-XB FAILSTO TRANSFER
ESF-REL-FT-32FXA	3.000E-004	3	RELAY P32F-XA FAILSTO TRANSFER
ESF-REL-FT-32FXB	3.000E-004	3	RELAY P32F-XB FAILSTO TRANSFER
ESF-REL-FT-38A1X	3.000E-004	3	RELAY P38A-1X FAILSTO ENERGIZE
ESF-REL-FT-38B1X	3.000E-004	3	RELAY P38B-1X FAILSTO ENERGIZE
ESF-REL-FT-3930B	3.000E-004	3	RELAY LS-3930BX FAILS TO TRANSFER
ESF-REL-FT-3931B	3.000E-004	3	RELAY LS-3931BX FAILS TO TRANSFER
ESF-REL-FT-3991A	3.000E-004	3	RELAY LS-3991A FAILS TO TRANSFER
ESF-REL-FT-3991B	3.000E-004	3	RELAY LS-3991B FAILS TO TRANSFER
ESF-REL-FT-3XB03	3.000E-004	3	RELAY 1-273X/B03 FAILS TO TRANSFER
ESF-REL-FT-3XB04	3.000E-004	3	RELAY 1-273X/B03 FAILS TO TRANSFER
ESF-REL-FT-401DA	3.000E-004	3	RELAY TC-401D-XA FAILS TO TRANSFER
ESF-REL-FT-401DB	3.000E-004	3	RELAY TC-401D-XB FAILS TO TRANSFER
ESF-REL-FT-402DA	3.000E-004	3	RELAY TC-402D-XA FAILS TO TRANSFER
ESF-REL-FT-402DB	3.000E-004	3	RELAY TC-402D-XB FAILS TO TRANSFER
ESF-REL-FT-403DA	3.000E-004	3	RELAY TC-403D-XA FAILS TO TRANSFER
ESF-REL-FT-403DB	3.000E-004	3	RELAY TC-403D-XB FAILS TO TRANSFER
ESF-REL-FT-404DA	3.000E-004	3	RELAY TC-404D-XA FAILS TO TRANSFER
ESF-REL-FT-404DB	3.000E-004	3	RELAY TC-404D-XB FAILS TO TRANSFER
ESF-REL-FT-429CA	3.000E-004	3	RELAY PC-429C-XA FAILS TO TRANSFER
ESF-REL-FT-429CB	3.000E-004	3	RELAY PC-429C-XB FAILS TO TRANSFER
ESF-REL-FT-430EA	3.000E-004	3	RELAY PC-430E-XA FAILS TO TRANSFER
ESF-REL-FT-430EB	3.000E-004	3	RELAY PC-430E-XB FAILS TO TRANSFER
ESF-REL-FT-431GA	3.000E-004	3	RELAY PC-431G-XA FAILS TO TRANSFER
ESF-REL-FT-431GB	3.000E-004	3	RELAY PC-431G-XB FAILS TO TRANSFER
ESF-REL-FT-474AA	3.000E-004	3	RELAY FC-474A-XA FAILS TO TRANSFER
ESF-REL-FT-474AB	3.000E-004	3	RELAY FC-474A-XB FAILS TO TRANSFER
ESF-REL-FT-474BA	3.000E-004	3	RELAY FC-474B-XA FAILS TO TRANSFER
ESF-REL-FT-474BB	3.000E-004	3	RELAY FC-474B-XB FAILS TO TRANSFER
ESF-REL-FT-475AA	3.000E-004	3	RELAY FC-475A-XA FAILS TO TRANSFER
ESF-REL-FT-475AB	3.000E-004	3	RELAY FC-475A-XB FAILS TO TRANSFER
ESF-REL-FT-475BA	3.000E-004	3	RELAY FC-475B-XA FAILS TO TRANSFER
ESF-REL-FT-475BB	3.000E-004	3	RELAY FC-475B-XB FAILS TO TRANSFER
ESF-REL-FT-86B1B	3.000E-004	3	LOCKOUT RELAY 86-B1B FAILS TO TRANSFER
ESF-REL-FT-86B2B	3.000E-004	3	LOCKOUT RELAY 86-B2B FAILS TO TRANSFER
ESF-REL-FT-86B5B	3.000E-004	3	LOCKOUT RELAY 86-B5B FAILS TO TRANSFER
ESF-REL-FT-86TG1	3.000E-004	3	LOCKOUT RELAY 86/TG-01 FAILS TO TRANSFER

ESF-REL-FT-86X01	3.000E-004	3	LOCKOUT RELAY 86/TG-01 FAILS TO TRANSFER
ESF-REL-FT-946AA	3.000E-004	3	RELAY PC-946A-XA FAILS TO TRANSFER
ESF-REL-FT-946AB	3.000E-004	3	RELAY PC-946A-XB FAILS TO TRANSFER
ESF-REL-FT-948AA	3.000E-004	3	RELAY PC-948A-XA FAILS TO TRANSFER
ESF-REL-FT-948AB	3.000E-004	3	RELAY PC-948A-XB FAILS TO TRANSFER
ESF-REL-FT-950AA	3.000E-004	3	RELAY PC-950A-XA FAILS TO TRANSFER
ESF-REL-FT-950AB	3.000E-004	3	RELAY PC-950A-XB FAILS TO TRANSFER
ESF-REL-FT-AMXA2	3.000E-004	3	AMSAC RELAY XA2 FAILS TO TRANSFER
ESF-REL-FT-FSXG1	3.000E-004	3	RELAY FSX/G01 FAILSTO TRANSFER
ESF-REL-FT-FSXG2	3.000E-004	3	RELAY FSX/G02 FAILSTO TRANSFER
ESF-REL-FT-FSXG3	3.000E-004	3	RELAY FSX/G03 FAILSTO TRANSFER
ESF-REL-FT-SI10X	3.000E-004	3	SI SLAVE RELAY SI-10X FAILS TO ENERGIZE
ESF-REL-FT-SI11X	3.000E-004	3	SI SLAVE RELAY SI-11X FAILS TO ENERGIZE
ESF-REL-FT-SI12X	3.000E-004	3	SI SLAVE RELAY SI-12X FAILS TO ENERGIZE
ESF-REL-FT-SI14X	3.000E-004	3	SI SLAVE RELAY SI-14X FAILS TO ENERGIZE
ESF-REL-FT-SI20X	3.000E-004	3	SI SLAVE RELAY SI-20X FAILS TO ENERGIZE
ESF-REL-FT-SI21X	3.000E-004	3	SI SLAVE RELAY SI-21X FAILS TO ENERGIZE
ESF-REL-FT-SI22X	3.000E-004	3	SI SLAVE RELAY SI-22X FAILS TO ENERGIZE
ESF-REL-FT-SI24X	3.000E-004	3	SI SLAVE RELAY SI-24X FAILS TO ENERGIZE
ESF-REL-FT-SIA-A	3.000E-004	3	TRAIN A AUTO SI MASTER RELAY SIA-A FAILS
ESF-REL-FT-SIA-B	3.000E-004	3	TRAIN B AUTO SI MASTER RELAY SIA-B FAILS
ESF-REL-FT-SIM-A	3.000E-004	3	TRAIN A MANUAL SI MASTER RELAY SIM-A FAILS
ESF-REL-FT-SIM-B	3.000E-004	3	TRAIN B MANUAL SI MASTER RELAY FAILS
ESF-REL-SA-1X4B3	5.000E-007	3	UV RELAY 271X4/B03 SPURIOUSLY OPERATES
ESF-REL-SA-1X4B4	5.000E-007	3	UV RELAY 271X4/B04 SPURIOUSLY OPERATES
ESF-REL-SA-25A03	5.000E-007	3	SYNCHRO CHECK RELAY25/A03 SPURIOUSLY OPERATE
ESF-REL-SA-25A04	5.000E-007	3	SYNCHRO CHECK RELAY25/A04 SPURIOUSLY OPERATE
ESF-REL-SA-2SI12	5.000E-007	3	SI SLAVE RELAY 2-SI12X SPURIOUSLY OPERATES
ESF-REL-SA-2SI22	5.000E-007	3	SI SLAVE RELAY 2-SI22X SPURIOUSLY OPERATES
ESF-REL-SA-2X4B3	5.000E-007	3	UV RELAY 272X4/B03 SPURIOUSLY OPERATES
ESF-REL-SA-2X4B4	5.000E-007	3	UV RELAY 272X4/B04 SPURIOUSLY OPERATES
ESF-REL-SA-4021X	5.000E-007	3	RELAY 4021X SPURIOUSLY OPERATES
ESF-REL-SA-4023X	5.000E-007	3	RELAY 4023X SPURIOUSLY OPERATES
ESF-REL-SA-5280	5.000E-007	3	TEMPORARY HOLDER FOR A52-80 SEE #2001-11
ESF-REL-SA-61BYA	5.000E-007	3	RELAY LC-461B-YA SPURIOUSLY OPERATES
ESF-REL-SA-61BYB	5.000E-007	3	RELAY LC-461B-YB SPURIOUSLY OPERATES
ESF-REL-SA-62AYA	5.000E-007	3	RELAY LC-462A-YA SPURIOUSLY OPERATES

ESF-REL-SA-62AYB	5.000E-007	3	RELAY LC-462A-YB SPURIOUSLY OPERATES
ESF-REL-SA-63CYA	5.000E-007	3	RELAY LC-463C-YA SPURIOUSLY OPERATES
ESF-REL-SA-63CYB	5.000E-007	3	RELAY LC-463C-YB SPURIOUSLY OPERATES
ESF-REL-SA-71BYA	5.000E-007	3	RELAY LC-471B-YA SPURIOUSLY OPERATES
ESF-REL-SA-71BYB	5.000E-007	3	RELAY LC-471B-YB SPURIOUSLY OPERATES
ESF-REL-SA-72AYA	5.000E-007	3	RELAY LC-472A-YA SPURIOUSLY OPERATES
ESF-REL-SA-72AYB	5.000E-007	3	RELAY LC-472A-YB SPURIOUSLY OPERATES
ESF-REL-SA-73CYA	5.000E-007	3	RELAY LC-473C-YA SPURIOUSLY OPERATES
ESF-REL-SA-73CYB	5.000E-007	3	RELAY LC-473C-YB SPURIOUSLY OPERATES
ESF-REL-SA-862A5	5.000E-007	3	LOCKOUT RELAY 86/2A05 SPURIOUSLY CLOSES
ESF-REL-SA-86A01	5.000E-007	3	LOCKOUT RELAY 86/A01 SPURIOUSLY OPERATES
ESF-REL-SA-86A02	5.000E-007	3	LOCKOUT RELAY 86/A02 SPURIOUSLY OPERATES
ESF-REL-SA-86A05	5.000E-007	3	LOCKOUT RELAY 86/A05 SPURIOUSLY OPERATES
ESF-REL-SA-86A06	5.000E-007	3	LOCKOUT RELAY 86/A06 SPURIOUSLY OPERATES
ESF-REL-SA-86A60	5.000E-007	3	LOCKOUT RELAY 86/A52-60 SPURIOUSLY OPERATES
ESF-REL-SA-86A66	5.000E-007	3	LOCKOUT RELAY 86/A52-66 SPURIOUSLY OPERATES
ESF-REL-SA-86A73	5.000E-007	3	LOCKOUT RELAY 86/A52-73 SPURIOUSLY CLOSES
ESF-REL-SA-86A80	5.000E-007	3	LOCKOUT RELAY 86/A52-80 SPURIOUSLY OPERATES
ESF-REL-SA-86H01	5.000E-007	3	LOCKOUT RELAY 86/H01 SPURIOUSLY OPERATES
ESF-REL-SA-86H03	5.000E-007	3	LOCKOUT RELAY 86/H03 SPURIOUSLY OPERATES
ESF-REL-SA-A5244	5.000E-007	3	A52-44 ESTIMATED FAILURE-SEE CHANGE 2001-12
ESF-REL-SA-A5248	5.000E-007	3	A52-48 ESTIMATED FAILURE-SEE CHANGE 2001-12
ESF-REL-SA-A5286	5.000E-007	3	A52-86 ESTIMATED FAILURE-SEE CHANGE 2001-07
ESF-REL-SA-B6A67	5.000E-007	3	LOCKOUT RELAY 86/A52-67 SPURIOUSLY OPERATES
ESF-REL-SA-ESTX1	5.000E-007	3	RELAY ESTX/G01 SPURIOUSLY OPERATES
ESF-REL-SA-ESTX2	5.000E-007	3	RELAY ESTX/G02 SPURIOUSLY OPERATES
ESF-REL-SA-ESTX3	5.000E-007	3	RELAY ESTX/G03 SPURIOUSLY OPERATES
ESF-REL-SA-SIB-A	5.000E-007	3	TRAIN A SI BLOCK RELAY SIB-A SPURIOUSLY OPER.
ESF-REL-SA-SIB-B	5.000E-007	3	TRAIN B SI BLOCK RELAY SIB-B SPURIOUSLY OPER.
ESF-REL-SA-SIR-A	5.000E-007	3	TRAIN A SI RESET RELAY SIR-A SPURIOUSLY OPER.
ESF-REL-SA-SIR-B	5.000E-007	3	TRAIN B SI RESET RELAY SIR-B SPURIOUSLY OPER.
ESF-REL-SA-TEMP	3.430E-004	3	POINT ESTIMATE FOR 4022 - SEE #2001-13
ESF-REL-SATEMP14	3.430E-004	3	POINT ESTIMATE FOR 4020 - SEE #2001-14
ESF-REL-TEMP5221	3.430E-004	3	TEMPORARY HOLDER FOR H52-21 SEE #2001-10
ESF-RTD-NO-0401A	5.853E-005	4	RTD TE-401A FAILURE
ESF-RTD-NO-0401B	5.853E-005	4	RTD TE-401B FAILURE
ESF-RTD-NO-0402A	5.853E-005	4	RTD TE-402A FAILURE

ESF-RTD-NO-0402B	5.853E-005	4	RTD TE-402B FAILURE
ESF-RTD-NO-0403A	5.853E-005	4	RTD TE-403A FAILURE
ESF-RTD-NO-0403B	5.853E-005	4	RTD TE-403B FAILURE
ESF-RTD-NO-0404A	5.853E-005	4	RTD TE-404A FAILURE
ESF-RTD-NO-0404B	5.853E-005	4	RTD TE-404B FAILURE
ESF-SW--CM-017AB	4.700E-007	3	SWITCHES 2017A AND 2017B FAIL DUE TO CCF
ESF-SW--CM-018AB	4.700E-007	3	SWITCHES 2018A AND 2018B FAIL DUE TO CCF
ESF-SW--CM-MSI-A	4.700E-007	3	TRAIN A MANUAL SI SWITCHES FAIL DUE TOCCF
ESF-SW--CM-MSI-B	4.700E-007	3	TRAIN B MANUAL SI SWITCHES FAIL DUE TOCCF
ESF-SW--FT-2017A	1.000E-005	3	SWITCH 2017A FAILS TO TRANSFER
ESF-SW--FT-2017B	1.000E-005	3	SWITCH 2017B FAILS TO TRANSFER
ESF-SW--FT-2018A	1.000E-005	3	SWITCH 2018A FAILS TO TRANSFER
ESF-SW--FT-2018B	1.000E-005	3	SWITCH 2018B FAILS TO TRANSFER
ESF-SW--FT-MSI1A	1.000E-005	3	MANUAL SI SWITCH PB/MSI1-A FAILS TO TRANSFER
ESF-SW--FT-MSI1B	1.000E-005	3	MANUAL SI SWITCH PB/MSI1-B FAILS TO TRANSFER
ESF-SW--FT-MSI2A	1.000E-005	3	MANUAL SI SWITCH PB/MSI2-A FAILS TO TRANSFER
ESF-SW--FT-MSI2B	1.000E-005	3	MANUAL SI SWITCH PB/MSI2-B FAILS TO TRANSFER
ESF-SW--SA--RSIA	4.000E-006	4	RESET SI SWITCH PB/RSIA SPURIOUS OPERATION
ESF-SW--SA--RSIB	4.000E-006	4	RESET SI SWITCH PB/RSIB SPURIOUS OPERATION
ESF-SW--SA-1A371	4.000E-006	4	SWITCH TS/1A37-1 SPURIOUSLY OPERATES
ESF-SW--SA-1A372	4.000E-006	4	SWITCH TS/1A37-2 SPURIOUSLY OPERATES
ESF-SW--SA-1A551	4.000E-006	4	SWITCH TS/1A55-1 SPURIOUSLY OPERATES
ESF-SW--SA-1A552	4.000E-006	4	SWITCH TS/1A55-2 SPURIOUSLY OPERATES
ESF-SW--SA-29CAT	4.000E-006	4	TEST SWITCH PC-429-XAT SPUROIUS OPERATION
ESF-SW--SA-29CBT	4.000E-006	4	TEST SWITCH PC-429C#NAME? TION
ESF-SW--SA-30EAT	4.000E-006	4	TEST SWITCH PC-430E#NAME? TION
ESF-SW--SA-30EBT	4.000E-006	4	TEST SWITCH PC-430E#NAME? TION
ESF-SW--SA-31GAT	4.000E-006	4	TEST SWITCH PC-431G#NAME? TION
ESF-SW--SA-31GBT	4.000E-006	4	TEST SWITCH PC-431G#NAME? TION
ESF-SW--SA-946AT	4.000E-006	4	TEST SWITCH PC-946-XAT SPURIOUSLY OPERATES
ESF-SW--SA-946BT	4.000E-006	4	TEST SWITCH PC-946-XBT SPURIOUSLY OPERATES
ESF-SW--SA-948AT	4.000E-006	4	TEST SWITCH PC-948-XAT SPURIOUSLY OPERATES
ESF-SW--SA-948BT	4.000E-006	4	TEST SWITCH PC-948-XBT SPURIOUSLY OPERATES
ESF-SW--SA-950AT	4.000E-006	4	TEST SWITCH PC-950-XAT SPURIOUSLY OPERATES
ESF-SW--SA-950BT	4.000E-006	4	TEST SWITCH PC-950-XBT SPURIOUSLY OPERATES
ESF-SW--SA-TS1A5	4.000E-006	4	SWITCH 1-TS1/A05 SPURIOUSLY OPERATES
ESF-SW--SA-TS1A6	4.000E-006	4	SWITCH 1-TS1/A06 SPURIOUSLY OPERATES

ESF-SW--SA-TS2A5	4.000E-006	4	SWITCH 1-TS2/A05 SPURIOUSLY OPERATES
ESF-SW--SA-TS2A6	4.000E-006	4	SWITCH 1-TS2/A06 SPURIOUSLY OPERATES
ESF-TDR-CM---ALL	1.890E-005	3	COMMON CAUSE FAILURE OF ALL TIME DELAYRELAYS
ESF-TDR-CM-10-11	8.130E-007	3	TDR-10 AND TDR-11 FAIL DUE TO CCF
ESF-TDR-CM-10-12	8.130E-007	3	TDR-10 AND TDR-12 FAIL DUE TO COMMON CAUSE
ESF-TDR-CM-10-13	8.130E-007	3	TDR-10 AND TDR-13 FAIL DUE TO CCF
ESF-TDR-CM-10-14	8.130E-007	3	TDR-10 AND TDR-14 FAIL DUE TO CCF
ESF-TDR-CM-10-15	8.130E-007	3	TDR-10 AND TDR-15 FAIL DUE TO CCF
ESF-TDR-CM-10-16	8.130E-007	3	TDR-10 AND TDR-16 FAIL DUE TO CCF
ESF-TDR-CM-10-17	8.130E-007	3	TDR-10 AND TDR-17 FAIL DUE TO CCF
ESF-TDR-CM-10-18	8.130E-007	3	TDR-10 AND TDR-18 FAIL DUE TO CCF
ESF-TDR-CM-10-20	8.130E-007	3	TDR-10 AND TDR-20 FAIL DUE TO CCF
ESF-TDR-CM-10-21	8.130E-007	3	TDR-10 AND TDR-21 FAIL DUE TO CCF
ESF-TDR-CM-10-22	8.130E-007	3	TDR-10 AND TDR-22 FAIL DUE TO CCF
ESF-TDR-CM-10-23	8.130E-007	3	TDR-10 AND TDR-23 FAIL DUE TO CCF
ESF-TDR-CM-10-24	8.130E-007	3	TDR-10 AND TDR-24 FAIL DUE TO CCF
ESF-TDR-CM-10-25	8.130E-007	3	TDR-10 AND TDR-25 FAIL DUE TO CCF
ESF-TDR-CM-10-26	8.130E-007	3	TDR-10 AND TDR-26 FAIL DUE TO CCF
ESF-TDR-CM-10-27	8.130E-007	3	TDR-10 AND TDR-27 FAIL DUE TO CCF
ESF-TDR-CM-10-28	8.130E-007	3	TDR-10 AND TDR-28 FAIL DUE TO CCF
ESF-TDR-CM-11-12	8.130E-007	3	TDR-11 AND TDR-12 FAIL DUE TO CCF
ESF-TDR-CM-11-13	8.130E-007	3	TDR-11 AND TDR-13 FAIL DUE TO CCF
ESF-TDR-CM-11-14	8.130E-007	3	TDR-11 AND TDR-14 FAIL DUE TO CCF
ESF-TDR-CM-11-15	8.130E-007	3	TDR-11 AND TDR-15 FAIL DUE TO CCF
ESF-TDR-CM-11-16	8.130E-007	3	TDR-11 AND TDR-16 FAIL DUE TO CCF
ESF-TDR-CM-11-17	8.130E-007	3	TDR-11 AND TDR-17 FAIL DUE TO CCF
ESF-TDR-CM-11-18	8.130E-007	3	TDR-11 AND TDR-18 FAIL DUE TO CCF
ESF-TDR-CM-11-20	8.130E-007	3	TDR-11 AND TDR-20 FAIL DUE TO CCF
ESF-TDR-CM-11-21	8.130E-007	3	TDR-11 AND TDR-21 FAIL DUE TO CCF
ESF-TDR-CM-11-22	8.130E-007	3	TDR-11 AND TDR-22 FAIL DUE TO CCF
ESF-TDR-CM-11-23	8.130E-007	3	TDR-11 AND TDR-23 FAIL DUE TO CCF
ESF-TDR-CM-11-24	8.130E-007	3	TDR-11 AND TDR-24 FAIL DUE TO CCF
ESF-TDR-CM-11-25	8.130E-007	3	TDR-11 AND TDR-25 FAIL DUE TO CCF
ESF-TDR-CM-11-26	8.130E-007	3	TDR-11 AND TDR-26 FAIL DUE TO CCF
ESF-TDR-CM-11-27	8.130E-007	3	TDR-11 AND TDR-27 FAIL DUE TO CCF
ESF-TDR-CM-11-28	8.130E-007	3	TDR-11 AND TDR-28 FAIL DUE TO CCF
ESF-TDR-CM-12-20	8.130E-007	3	TDR-12 AND TDR-20 FAIL DUE TO CCF

ESF-TDR-CM-12-21	8.130E-007	3	TDR-12 AND TDR-21 FAIL DUE TO CCF
ESF-TDR-CM-13-20	8.130E-007	3	TDR-13 AND TDR-20 FAIL DUE TO CCF
ESF-TDR-CM-13-21	8.130E-007	3	TDR-13 AND TDR-21 FAIL DUE TO CCF
ESF-TDR-CM-14-20	8.130E-007	3	TDR-14 AND TDR-20 FAIL DUE TO CCF
ESF-TDR-CM-14-21	8.130E-007	3	TDR-14 AND TDR-21 FAIL DUE TO CCF
ESF-TDR-CM-15-20	8.130E-007	3	TDR-15 AND TDR-20 FAIL DUE TO CCF
ESF-TDR-CM-15-21	8.130E-007	3	TDR-15 AND TDR-21 FAIL DUE TO CCF
ESF-TDR-CM-16-20	8.130E-007	3	TDR-16 AND TDR-20 FAIL DUE TO CCF
ESF-TDR-CM-16-21	8.130E-007	3	TDR-16 AND TDR-21 FAIL DUE TO CCF
ESF-TDR-CM-17-20	8.130E-007	3	TDR-17 AND TDR-20 FAIL DUE TO CCF
ESF-TDR-CM-17-21	8.130E-007	3	TDR-17 AND TDR-21 FAIL DUE TO CCF
ESF-TDR-CM-18-20	8.130E-007	3	TDR-18 AND TDR-20 FAIL DUE TO CCF
ESF-TDR-CM-18-21	8.130E-007	3	TDR-18 AND TDR-21 FAIL DUE TO CCF
ESF-TDR-CM-20-21	8.130E-007	3	TDR-20 AND TDR-21 FAIL DUE TO CCF
ESF-TDR-CM-20-22	8.130E-007	3	TDR-20 AND TDR-22 FAIL DUE TO CCF
ESF-TDR-CM-20-23	8.130E-007	3	TDR-20 AND TDR-23 FAIL DUE TO CCF
ESF-TDR-CM-20-24	8.130E-007	3	TDR-20 AND TDR-24 FAIL DUE TO CCF
ESF-TDR-CM-20-25	8.130E-007	3	TDR-20 AND TDR-25 FAIL DUE TO CCF
ESF-TDR-CM-20-26	8.130E-007	3	TDR-20 AND TDR-26 FAIL DUE TO CCF
ESF-TDR-CM-20-27	8.130E-007	3	TDR-20 AND TDR-27 FAIL DUE TO CCF
ESF-TDR-CM-20-28	8.130E-007	3	TDR-20 AND TDR-28 FAIL DUE TO CCF
ESF-TDR-CM-21-22	8.130E-007	3	TDR-21 AND TDR-22 FAIL DUE TO CCF
ESF-TDR-CM-21-23	8.130E-007	3	TDR-21 AND TDR-23 FAIL DUE TO CCF
ESF-TDR-CM-21-24	8.130E-007	3	TDR-21 AND TDR-24 FAIL DUE TO CCF
ESF-TDR-CM-21-25	8.130E-007	3	TDR-21 AND TDR-25 FAIL DUE TO CCF
ESF-TDR-CM-21-26	8.130E-007	3	TDR-21 AND TDR-26 FAIL DUE TO CCF
ESF-TDR-CM-21-27	8.130E-007	3	TDR-21 AND TDR-27 FAIL DUE TO CCF
ESF-TDR-CM-21-28	8.130E-007	3	TDR-21 AND TDR-28 FAIL DUE TO CCF
ESF-TDR-FT-1AA05	3.000E-004	3	TIME DELAY RELAY 1-TDRA/A05 FAILS TO TRANSFER
ESF-TDR-FT-1AA06	3.000E-004	3	TIME DELAY RELAY 1-TDRA/A06 FAILS TO TRANSFER
ESF-TDR-FT-1BA05	3.000E-004	3	TIME DELAY RELAY 1-TDRB/A05 FAILS TO TRANSFER
ESF-TDR-FT-1BA06	3.000E-004	3	TIME DELAY RELAY 1-TDRB/A06 FAILS TO TRANSFER
ESF-TDR-FT-1CA05	3.000E-004	3	TIME DELAY RELAY 1-TDRC/A05 FAILS TO TRANSFER
ESF-TDR-FT-1CA06	3.000E-004	3	TIME DELAY RELAY 1-TDRC/A06 FAILS TO TRANSFER
ESF-TDR-FT-2AA05	3.000E-004	3	TIME DELAY RELAY 2-TDRA/A05 FAILS TO TRANSFER
ESF-TDR-FT-2AA06	3.000E-004	3	TIME DELAY RELAY 2-TDRA/A06 FAILS TO TRANSFER
ESF-TDR-FT-2BA05	3.000E-004	3	TIME DELAY RELAY 2-TDRB/A05 FAILS TO TRANSFER

ESF-TDR-FT-2BA06	3.000E-004	3	TIME DELAY RELAY 2-TDRB/A06 FAILS TO TRANSFER
ESF-TDR-FT-2CA05	3.000E-004	3	TIME DELAY RELAY 2-TDRC/A05 FAILS TO TRANSFER
ESF-TDR-FT-2CA06	3.000E-004	3	TIME DELAY RELAY 2-TDRC/A06 FAILS TO TRANSFER
ESF-TDR-FT-AMTDR	3.000E-004	3	AMSAC TIME DELAY RELAY TDR FAILS TO TRANSFER
ESF-TDR-FT-TDR10	3.000E-004	3	TIME DELAY RELAY TDR-10 FAILS TO ENERGIZE
ESF-TDR-FT-TDR11	3.000E-004	3	TIME DELAY RELAY TDR-11 FAILS TO ENERGIZE
ESF-TDR-FT-TDR20	3.000E-004	3	TIME DELAY RELAY TDR-20 FAILS TO ENERGIZE
ESF-TDR-FT-TDR21	3.000E-004	3	TIME DELAY RELAY TDR-21 FAILS TO ENERGIZE
ESF-TDR-SA--4042	2.000E-006	4	RELAY 62-4042 SPURIOUSLY OPERATES
ESF-TDR-SA--4043	2.000E-006	4	RELAY 62-4043 SPURIOUSLY OPERATES
ESF-TDR-SA-4044A	2.000E-006	4	RELAY 62-4044A SPURIOUSLY OPERATES
ESF-TDR-SA-4044B	2.000E-006	4	RELAY 62-4044B SPURIOUSLY OPERATES
ESF-TDR-SA-AMPWR	2.000E-006	4	AMSAC RELAY TDR-PWRSPURIOUSLY OPERATE S
ESF-TT--NO-0401A	4.337E-006	4	DUAL CURRENT SOURCETT-401A FAILURE
ESF-TT--NO-0401B	4.337E-006	4	DUAL CURRENT SOURCETT-401B FAILURE
ESF-TT--NO-0402A	4.337E-006	4	DUAL CURRENT SOURCETT-402A FAILURE
ESF-TT--NO-0402B	4.337E-006	4	DUAL CURRENT SOURCETT-402B FAILURE
ESF-TT--NO-0403A	4.337E-006	4	DUAL CURRENT SOURCETT-403A FAILURE
ESF-TT--NO-0403B	4.337E-006	4	DUAL CURRENT SOURCETT-403B FAILURE
ESF-TT--NO-0404A	4.337E-006	4	DUAL CURRENT SOURCETT-404A FAILURE
ESF-TT--NO-0404B	4.337E-006	4	DUAL CURRENT SOURCETT-404B FAILURE
FLAG-1ASG-INTACT	1.000E+000	3	FLAG TO IDENTIFY WHERE 1ASG IS INTACT
FLAG-1ASG-OUT	1.000E+000	3	FLAG TO IDENTIFY WHEN 1ASG HAS BREAK
FLAG-1BSG-INTACT	1.000E+000	3	FLAG TO IDENTIFY WHERE 1BSG IS INTACT
FLAG-1BSG-OUT	1.000E+000	3	FLAG TO IDENTIFY WHEN 1BSG HAS BREAK
FLAG-2911-PLUG	1.000E+000	3	FLAG TO INDICATE STRAINER BS-2911 HAS PLUGGED
FLAG-2912-PLUG	1.000E+000	3	FLAG TO INDICATE STRAINER BS-2912 HAS PLUGGED
FLAG-2ASG-INTACT	1.000E+000	3	FLAG TO IDENTIFY WHERE 2ASG IS INTACT
FLAG-2ASG-OUT	1.000E+000	3	FLAG TO IDENTIFY WHEN 2ASG HAS BREAK
FLAG-2BSG-INTACT	1.000E+000	3	FLAG TO IDENTIFY WHERE 2BSG IS INTACT
FLAG-2BSG-OUT	1.000E+000	3	FLAG TO IDENTIFY WHEN 2BSG HAS BREAK
FLAG-A-CL-INJ	1.000E+000	3	FLAG A COLD LEG INJECTION
FLAG-A-CL-REC	1.000E+000	3	FLAG A COLD LEG RECIRCULATION
FLAG-A-SI-INJ	1.000E+000	3	A SI INJECTION
FLAG-A-SI-REC	1.000E+000	3	A SI RECIRCULATION
FLAG-ASI-ACL-INJ	1.000E+000	3	FLAG A TRAIN SI TO A CL INJECTION
FLAG-ASI-ACL-REC	1.000E+000	3	FLAG A TRAIN SI TO A CL RECIRCULATION

FLAG-ASI-BCL-INJ	1.000E+000	3	FLAG A TRAIN SI TO B CL INJECTION
FLAG-ASI-BCL-REC	1.000E+000	3	FLAG A TRAIN SI TO B CL RECIRCULATION
FLAG-B-CL-INJ	1.000E+000	3	B COLD LEG INJECTION
FLAG-B-CL-REC	1.000E+000	3	B COLD LEG RECIRCULATION
FLAG-B-SI-INJ	1.000E+000	3	FLAG B SI INJECTION
FLAG-B-SI-REC	1.000E+000	3	FLAG B SI RECIRCULATION
FLAG-BSI-ACL-INJ	1.000E+000	3	FLAG B TRAIN SI TO A CL INJECTION
FLAG-BSI-ACL-REC	1.000E+000	3	FLAG B TRAIN SI TO A CL RECIRCULATION
FLAG-BSI-BCL-INJ	1.000E+000	3	FLAG B TRAIN SI TO B CL INJECTION
FLAG-BSI-BCL-REC	1.000E+000	3	FLAG B TRAIN SI TO B CL RECIRCULATION
FLAG-NON-ATWS	1.000E+000	3	FLAG TO IDENTIFY NON-ATWS FAILURES
FLAG-P38A-U1	5.000E-001	3	50/50 CHANCE THAT P-38A IS USED BY U1APPLIES DUAL UNIT
FLAG-P38A-U2	5.000E-001	3	50/50 CHANCE THAT P-38A IS USED BY U2APPLIES DUAL UNIT
FLAG-P38B-U1	5.000E-001	3	50/50 CHANCE THAT P-38B IS USED BY U1APPLIES DUAL UNIT
FLAG-P38B-U2	5.000E-001	3	50/50 CHANCE THAT P-38B IS USED BY U2APPLIES DUAL UNIT
FLAG-SBO-NO-AC	1.000E+000	3	
FLAG-SBO-WITH-AC	1.000E+000	3	
FLAG-SW-DISCHARG	1.000E+000	3	FLAG TO IDENTIFY SW DISCHARGE FAILURES
FLAG-SW-NW-FIRST	1.000E+000	3	SERVICE WATER NORTHWEST VALVES FAIL FIRST
FLAG-SW-SUPPLY	1.000E+000	3	FLAG TO IDENTIFY SW SUPPLY FAILURES
FLAG-SWNE-BYPS-F	1.000E+000	3	SERVICE WATER BYPASS VALVES FAIL FIRST
FLAG-SWNE-NORM-F	1.000E+000	3	SERVICE WATER NORTHEAST VALVE GROUP FAILS FIRST
FLAG-SWSE-BYPS-F	1.000E+000	3	SERVICE WATER BYPASS VALVES FAIL FIRST
FLAG-SWSE-NORM-F	1.000E+000	3	SERVICE WATER SOUTHEAST VALVE GROUP FAILS FIRST
FLAG-SWSW-FIRST	1.000E+000	3	SW SOUTH WEST VALVES FAIL FIRST
FLAG-T1	1.000E+000	3	LOOP FLAG
FLAG-U1-REQ-AFW	1.000E+000	3	FLAG TO IDENTIFY WHEN U1 REQUIRES AFW
FLAG-U2-REQ-AFW	1.000E+000	3	FLAG TO IDENTIFY WHEN U2 REQUIRES AFW
FO--AOV-CO-3982A	1.287E-005	4	FUEL OIL RECIRC VALVE FO-3982A TRANSFERS OPEN
FO--AOV-CO-3982B	1.287E-005	4	FUEL OIL RECIRC VALVE FO-3982B TRANSFERS OPEN
FO--AOV-CO-3983A	1.287E-005	4	FUEL OIL RECIRC VALVE FO-3983A TRANSFERS OPEN
FO--AOV-CO-3983B	1.287E-005	4	FUEL OIL RECIRC VALVE FO-3983B TRANSFERS OPEN
FO--CKV-CC--0192	5.000E-005	3	CHECK VALVE FO-192 FAILS TO OPEN
FO--CKV-CC--0193	5.000E-005	3	CHECK VALVE FO-193 FAILS TO OPEN
FO--CKV-CC--CC44	5.000E-005	3	COMMON CAUSE FAILURE OF FUEL OILCHECK VALVES
FO--CKV-CC-00014	5.000E-005	3	CHK VLV FO-14 FO XFER PUMP P70A FAILS CLOSED
FO--CKV-CC-00019	5.000E-005	3	CHK VLV FO-19 FO XFER PUMP P70B FAILS CLOSED

FO--CKV-CM-14-19	2.350E-006	3	CCF FUEL OIL CHK VLV FO-14 + FO-19 CCF
FO--MDP-CM-0102-	3.220E-005	3	COMMON CAUSE FAILURE OF TRANSFERPUMPS F01 AND F02
FO--MDP-CM-0304-	3.220E-005	3	COMMON CAUSE FAILURE OF TRANSFERPUMPS F03 AND F04
FO--MDP-CM-CC44-	1.690E-004	3	COMMON CAUSE FAILURE OF ALL 4 FUEL TRANSFER PUMPS
FO--MDP-CM-P70AB	1.160E-004	3	CCF FUEL OIL TRANSFER PUMPS P70A + P70B
FO--MDP-FR-0070A	8.157E-004	4	FUEL OIL XFER PUMP P70A FAILS TO RUN
FO--MDP-FR-0070B	8.157E-004	4	FUEL OIL XFER PUMPP70B FAILS TO RUN
FO--MDP-FR-0206A	2.720E-004	4	FUEL OIL TRANSTER PUMP 206A FAILS TO RUN
FO--MDP-FR-0206B	2.720E-004	4	FUEL OIL TRANSFER PUMP 206B FAILS TO RUN
FO--MDP-FR-0207A	2.720E-004	4	FUEL OIL TRANSFER PUMP 207A FAILS TO RUN
FO--MDP-FR-0207B	2.720E-004	4	FUEL OIL TRANSFER PUMP 207B FAILS TO RUN
FO--MDP-FS-0070A	2.060E-003	3	FUEL OIL MDP P70A FAILS TO START
FO--MDP-FS-0070B	2.060E-003	3	FUEL OIL MDP P70B FAILS TO START
FO--MDP-FS-0206A	2.060E-003	3	FUEL OIL TRANSTER PUMP P-206A FAILS TO START
FO--MDP-FS-0206B	2.060E-003	3	FUEL OIL TRANSTER PUMP 206B FAILS TO START
FO--MDP-FS-0207A	2.060E-003	3	FUEL OIL TRANSTER PUMP 207A FAILS TO START
FO--MDP-FS-0207B	2.060E-003	3	FUEL OIL TRANSFER PUMP 207B FAILS TO START
FO--MDP-TM-0070A	6.630E-004	3	FUEL OIL MOTOR DRIVEN PUMP P70A TEST +MAINT
FO--MDP-TM-0070B	6.630E-004	3	FUEL OIL MOTOR DRIVEN PUMP P70B TEST +MAINT
FO--MDP-TM-0206A	6.630E-004	3	FUEL OIL TRANSTER PUMP 206A OUT FOR MAINTENANCE
FO--MDP-TM-0206B	6.630E-004	3	FUEL OIL TRANSTER PUMP 206B OUT FOR MAINTENANCE
FO--MDP-TM-0207A	6.630E-004	3	FUEL OIL TRANSTER PUMP 207A OUT FOR MAINTENANCE
FO--MDP-TM-0207B	6.630E-004	3	FUEL OIL TRANSFER PUMP 207B OUT FOR MAINTENANCE
FO--MV--CC--0054	4.406E-004	3	MANUAL VALVE FO-054 FAILS TO OPEN
FO--MV--CC--0056	4.406E-004	3	MANUAL VALVE FO-056 FAILS TO OPEN
FO--MV--CC--0219	4.406E-004	3	MANUAL VALVE FO-219 FAILS TO OPEN
FO--MV--CC--0221	4.406E-004	3	MANUAL VALVE FO-220 FAILS TO OPEN
FO--MV--CC-00034	4.406E-004	3	MANUAL VALVE FO-34 FAILS TO OPEN
FO--MV--CC-00060	4.406E-004	3	MANUAL VALVE FO-60 FAILS TO OPEN
FO--MV--OC--0052	9.964E-007	4	MANUAL VALVE FO-0052 TRANSFERS CLOSED
FO--MV--OC--0053	9.964E-007	4	MANUAL VALVE FO-0053 TRANSFERS CLOSED
FO--MV--OC--0055	9.964E-007	4	MANUAL VALVE FO-055 TRANSFERS CLOSED
FO--MV--OC--0057	9.964E-007	4	MANUAL VALVE FO-057 TRANSFERS CLOSED
FO--MV--OC--0215	9.964E-007	4	MV FO-215 FAILS TO REMAIN IN THE OPEN POSITION
FO--MV--OC--0216	9.964E-007	4	MV FO-216 FAILS TO REMAIN IN THE OPEN POSITION
FO--MV--OC--0222	9.964E-007	4	MANUAL VALVE FO-222 TRANSFERS CLOSED
FO--MV--OC--0223	9.964E-007	4	MANUAL VALVE FO-223 TRANSFERS CLOSED

FO--MV--OC--0224	9.964E-007	4	MANUAL VALVE FO-224 TRANSFERS CLOSED
FO--MV--OC--0225	9.964E-007	4	MANUAL VALVE FO-225 TRANSFERS CLOSED
FO--MV--OC-03930	9.964E-007	4	MV FO-3930 FAILS TO REMAIN IN THE OPEN POSITIOIN
FO--MV--OC-03931	9.964E-007	4	MV FO-3931 FAILS TO REMAIN IN THE OPEN POSITION
FO--MV--PG--0052	8.964E-005	4	MANUAL VALVE FO-0052 PLUGGED
FO--MV--PG--0053	8.964E-005	4	MANUAL VALVE FO-0053 PLUGGED
FO--MV--PG--0055	8.964E-005	4	MANUAL VALVE FO-055 PLUGGED
FO--MV--PG--0057	8.964E-005	4	MANUAL VALVE FO-057 PLUGGED
FO--MV--PG--0128	8.964E-005	4	MANUAL VALVE FO-128 PLUGGED
FO--MV--PG--0129	8.964E-005	4	MANUAL VALVE FO-129 PLUGGED
FO--MV--PG--0156	8.964E-005	4	MANUAL VALVE FO-156 PLUGGED
FO--MV--PG--0157	8.964E-005	4	MANUAL VALVE FO-157 PLUGGED
FO--MV--PG--0188	8.964E-005	4	MANUAL VALVE FO-188 PLUGGED
FO--MV--PG--0189	8.964E-005	4	MANUAL VALVE FO-189 PLUGGED
FO--MV--PG--0194	8.964E-005	4	MANUAL VALVE FO-294 PLUGGED
FO--MV--PG--0195	8.964E-005	4	MANUAL VALVE FO-195 PLUGGED
FO--MV--PG--0213	8.964E-005	4	MANUAL VALVE FO-213 PLUGGED
FO--MV--PG--0214	8.964E-005	4	MANUAL VALVE FO-214 PLUGGED
FO--MV--PG--0222	8.964E-005	4	MANUAL VALVE FO-222 PLUGGED
FO--MV--PG--0223	8.964E-005	4	MANUAL VALVE FO-223 PLUGGED
FO--MV--PG--0224	8.964E-005	4	MANUAL VALVE FO-224 TRANSFERS CLOSED
FO--MV--PG--0225	8.964E-005	4	MANUAL VALVE FO-225 PLUGGED
FO--MV--PG-00027	8.964E-006	4	MAN VLV FO-27 FO XFER PUMPS TO DAY TANKS PG
FP--AOV-CC-03771	1.732E-003	3	PRESSURE CONTROL VALVE FP-3771 FAILS TO OPEN
FP--AOV-CC1-3771	1.732E-003	3	BLOCK 30 SOLENOID VLV FROM FP SYS. TOTDP 1P-29 COOLNG
FP--AOV-CC2-3772	1.732E-003	3	BLOCK 51 SOLENOID VLV FROM FP SYS. TOTDP 2P-29 COOLING
FP--AOV-CM--3771	8.230E-005	3	BLOCK 30 SOLENOID VLV FROM FP SYS. TOTDP P29 COOLING
FP--AOV-OC1-3771	3.862E-005	4	BLOCK 30 SOLENOID VLV FROM FP SYS. TOTDP 1P-29 COOLNG
FP--AOV-OC2-3772	3.862E-005	4	BLOCK 51 SOLENOID VLV FROM FP SYS. TOTDP 2P-29 COOLING
FP--CKV-CC-0221B	5.000E-005	3	CHK VALVE FP-221B (P-35A DISCH) FAILS TO OPEN
FP--CKV-CC-0222B	5.000E-005	3	CHK VALVE FP-222B (P-35B DISCH) FAILS TO OPEN
FP--CKV-CC-0304A	5.000E-005	3	CHK VALVE FP-304A (1P-29 COOL.) FAILS TO OPEN
FP--CKV-CC1-304A	5.000E-005	3	BLOCK 30 CHECK VLV FROM FP SYSTEM TO 1P-29 COOLING
FP--CKV-CC2-296A	5.000E-005	3	BLOCK 51 CHECK VLV FROM FP SYSTEM TO 2P-29 COOLING
FP--CKV-CM-2212B	2.350E-006	3	CHK VALVE CCF FP-221B/FP-222B (P-35A/BDISCH)
FP--CKV-CM304296	2.350E-006	3	BLOCKS 30 AND 51 COMMON MODE 0-FP-296A/304A
FP--DDP-FR-0035B	2.627E-001	4	DIESEL FIRE PUMP P-35B FAILS TO RUN (24 HRS)

FP--DDP-FS-0035B	1.470E-002	3	DIESEL FIRE PUMP P-35B FAILS TO START
FP--DDP-TM-0035B	2.640E-002	3	FIRE PUMP P-35B UNAVAIL DUE TO TEST OR MAINTENANCE
FP--MDP-FR-0035A	8.157E-004	4	ELECTRIC FIRE PUMP P-35A FAIL TO RUN (24 HRS)
FP--MDP-FS-0035A	8.320E-004	3	ELECTRIC FIRE PUMP P-35A FAILS TO START
FP--MDP-TM-0035A	3.520E-002	3	FIRE PUMP P-35A UNAVAIL DUE TO TEST OR MAINTENANCE
FP--MV--CC-00067	4.406E-004	3	HOSE STATION MANUALVALVE FP-67 FAIL TO OPEN
FP--MV--CC-00073	4.406E-004	3	HOSE STATION MANUALVALVE FP-73 FAIL T O OPEN
FP--MV--RE-00306	1.000E-003	3	FAIL TO RESTORE FP-306 AFTER TEST/MAINT.
FP--PS--FT-03716	3.000E-007	3	PRESS. SWITCH PS-3716 FAILS TO START P-35A
FP--PS--FT-03722	3.000E-007	3	PRESS. SWITCH PS-3722 FAILS TO START P-35B
FP--STR-PG1-3795	1.200E-004	4	BLOCK 30 FROM FP SYSTEM TO TDP 1P-29 COOLING
FP--STR-PG2-3796	1.200E-004	4	BLOCK 51 FROM FP SYSTEM TO TDP 2P-29 COOLING
FP--VLV-CC---004	4.406E-004	3	BLOCK 31 FROM FP SYSTEM TO INLET OF ALL AFW PUMPS
FP--VLV-CC---007	4.406E-004	3	BLOCK 32 FROM FP SYSTEM TO INLET OF ALL AFW PUMPS
FP--VLV-CM--0704	2.070E-005	3	BLOCKS 31 AND 32 COMMON MODE 0-AF-004/007
FP--VLV-OC---004	2.989E-006	4	BLOCK 31 FROM FP SYSTEM TO INLET OF ALL AFW PUMPS
FP--VLV-OC---007	2.989E-006	4	BLOCK 32 FROM FP SYSTEM TO INLET OF ALL AFW PUMPS
FP--VLV-OC-2-245	2.989E-006	4	BLOCK 51 MAN. VLV FROM FP SYSTEM TO 2P-29 COOLING
FP--VLV-OC-2-298	2.989E-006	4	BLOCK 51 MAN. VLV FROM FP SYSTEM TO 2P-29 COOLING
FP--VLV-OC1-0243	2.989E-006	4	BLOCK 30 MAN. VLV FROM FP SYSTEM TO 1P-29 COOLING
FP--VLV-OC1-0306	2.989E-006	4	BLOCK 30 MAN. VLV FROM FP SYSTEM TO 1P-29 COOLING
FP--VLV-RE-1-243	1.000E-003	3	BLOCK 30 MAN. VLV FROM FP SYSTEM TO 1P-29 COOLING
FP--VLV-RE-1-306	1.000E-003	3	BLOCK 30 MAN. VLV FROM FP SYSTEM TO 1P-29 COOLING
FP--VLV-RE-2-245	1.000E-003	3	BLOCK 51 MAN. VLV FROM FP SYSTEM TO 2P-29 COOLING
FP--VLV-RE-2-298	1.000E-003	3	BLOCK 51 MAN. VLV FROM FP SYSTEM TO 2P-29 COOLING
FP-1AOV-OC1-3771	1.609E-006	4	BLOCK 30 SOLENOID VLV FROM FP SYS. TOTDP 1P-29 COOLNG
FP-1AOV-OC2-3772	1.609E-006	4	BLOCK 51 SOLENOID VLV FROM FP SYS. TOTDP 2P-29 COOLING
FP-1STR-PG1-3795	5.000E-006	4	BLOCK 30 FROM FP SYSTEM TO TDP 1P-29 COOLING
FP-1STR-PG2-3796	5.000E-006	4	BLOCK 51 FROM FP SYSTEM TO TDP 2P-29 COOLING
FP-1VLV-OC-2-245	1.245E-007	4	BLOCK 51 MAN. VLV FROM FP SYSTEM TO 2P-29 COOLING
FP-1VLV-OC-2-298	1.245E-007	4	BLOCK 51 MAN. VLV FROM FP SYSTEM TO 2P-29 COOLING
FP-1VLV-OC1-0243	1.245E-007	4	BLOCK 30 MAN. VLV FROM FP SYSTEM TO 1P-29 COOLING
FP-1VLV-OC1-0306	1.245E-007	4	BLOCK 30 MAN. VLV FROM FP SYSTEM TO 1P-29 COOLING
HEP--SI--SD--DRN	1.000E+000	3	FAIL TO RESTORE SI FROM SHUTDOWN OOS FOR FEED
HEP-120-INVBACKU	2.200E-002	3	OPERATOR FAILS TO MANUALLY ALIGN 1-43/Y-01 TO 0DY-0A
HEP-416-ECA00--5	1.800E-003	3	OPERATOR FAILS TO START DG MANUALLY
HEP-480-AOP10C-5	5.000E-001	3	FAIL TO WIRE 1P11A TO B08 PER AOP10C-6

HEP-480-AOP10C-6	1.000E-001	3	FAIL TO ALIGN TO B08 / B09 PER AOP 0.0STEP 6.1
HEP-CCI-AOP9B-73	6.500E-002	3	OPER. FAILS TO ALIGN UNIT 2 CCW PUMPS TO UNIT
HEP-CCW-AOP9B-74	7.000E-002	3	OPERATOR FAILS TO ISOLATE CCW RUPTURE
HEP-CCW-EOP13-03	1.200E-004	3	OPERATOR FAILS TO START CCW PUMPS
HEP-CCW-OI-71-42	4.000E-002	3	OPERATOR FAILS TO ALIGN STANDBY HEAT EXCHANGE
HEP-CV--AOP6E-62	4.100E-002	3	OPER FAILS EMER BORATE FROM CHRG.
HEP-CV--ECA01-4B	2.300E-003	3	OPERATOR FAILS TO START CHARGING PUMPS
HEP-CV--EOP-0-49	4.100E-003	3	HEP - CHG PUMP OPER. FOR SEALINJ FLOW #NAME?
HEP-ECA-EOP31-32	7.700E-003	3	OPERATOR FAILS TO COOL DOWN AND DEPRESSURIZE
HEP-ECA00-U2-09	3.900E-003	3	OPERATOR FAILS TO ALIGN G-02 TO 2A-05U2 ECA-0.0 STEP 9
HEP-ECA00-U2-10	3.900E-003	3	OPERATOR FAILS TO ALIGN G-01 TO 2A-05U2 ECA-0.0 STEP 10
HEP-ECA00-U2-12	3.900E-003	3	OPERATOR FAILS TO ALIGN G-04 TO 2A-06U2 ECA-0.0 STEP 12
HEP-ECA00-U2-13	3.900E-003	3	OPERATOR FAILS TO ALIGN G-03 TO 2A-06U2 ECA-0.0 STEP 13
HEP-ECC-ECA00-21	5.000E-001	3	OPER. FAILS TO DEPRESSURIZE SGS TO 250PSI
HEP-ESF-EOP-0-04	3.250E-003	3	OPERATOR FAILS TO MANUALLY INITIATE SI
HEP-FP--FUEL-OIL	3.500E-002	3	OPER. FAILS TO SUPPLY FUEL OIL TO FIREPUMP
HEP-HHR-EOP13-23	1.250E-002	3	OPERATOR FAILS TO ALIGN FOR HHR
HEP-IA--AOP5B-74	2.000E-002	3	OPERATOR FAILS TO ISOLATE IA HEADER RUPTURE
HEP-IA--FO-04748	1.000E-003	3	OPRTATOR FAILS TO REOPEN 3047 OR 3048
HEP-IA--FO-START	6.900E-004	3	OPERATOR FAILS TO RESTART IA OR SA
HEP-IA--RE-01207	5.000E-003	3	FAILURE TO RESTORE IA-1207 AFTER T/M
HEP-IA--RE-01210	5.000E-003	3	FAILURE TO RESTORE IA-1210 AFTER T/M
HEP-MFW-CSPH1-06	5.000E-002	3	OPER. FAILS TO ALIGN MFW AFTER SI SIGNAL
HEP-MFW-CSPH1-XX	1.000E-001	3	OPER. FAILS TO OPENMOV SW-2880 AFTER SI
HEP-MFW-EOP01-06	2.300E-003	3	OPER. FAILS TO ALIGN MAIN FEEDWATER TOS/GS
HEP-MS--EOP-3-02	4.750E-003	3	OPERATOR FAILS TO DIAGNOSE SGTR EVENT
HEP-OCC-EOP01-04	1.500E-002	3	OPER. FAILS TO CONTROL CHARGING/LETDOWN
HEP-ODA-EOP12-05	2.700E-003	3	FAILURE TO COOLDOWNAND DEPRESS. AFTER SLOCA
HEP-ODB-CSPC1-14	1.050E-002	3	OPER. FAILS DEPRESS. TO USE LPSI AFTERSLOCA
HEP-ODC-EOP-3-21	2.000E-002	3	OPER. FAILS TO DEPRESS INTACT SG AFTERSGTR
HEP-ODD-CSPC1-14	1.200E-002	3	OPER. FAILS DEPRESS. TO USE LPSI AFTERMLOCA
HEP-RC--EOP-1-05	5.600E-003	3	FAILURE TO ISOLATE PORV WITH BLOCK VALVE
HEP-RCS-CSPH1-12	2.360E-002	3	OPER. FAILS TO ESTABLISH BLEED + FEED (NO SI)
HEP-RCS-CSPH1-13	2.050E-002	3	OPER. FAILS TO ESTABLISH BLEED + FEED (W/ SI)
HEP-RHR-EOP13-23	2.450E-002	3	OPERATOR FAILS TO ALIGN FOR LHR
HEP-RP--AOP9B-63	1.100E-004	3	OPERATOR FAILS TO MANUALLY TRIP RX (TCC/TSW)
HEP-RP--CSPS1-01	5.700E-003	3	FAILURE TO SCRAM RXVIA OPENING MG SET BKR

HEP-RP--EOP-0-01	8.300E-004	3	OPERATE FAILS TO MANUALLY TRIP REACTOR
HEP-SI-ACC-AISOL	1.700E-001	3	OPERATOR FAILS TO ISOLATE ACCUMULATOR
HEP-SW--AOP9A-63	5.200E-002	3	OPERATOR FAILS TO ISOLATE SW HEADER RUPTURE
HEP-SW--EOP-0-9A	1.800E-002	3	OPER. FAILS TO ISOLATE NON-ESSEN. SW LOADS
HEP-SWI-AOP9A-61	2.370E-005	3	OPERATOR FAILS TO START STANDBY SW PUMPS
IA--AOV-CC-03014	5.500E-004	3	SA TO IA VALVE IA-3014 FAILS TO OPEN
IA--AOV-CC-03047	5.500E-004	3	IA TO CONTAINMENT AOV IA-3047 FAILS TOOPEN
IA--AOV-CC-03048	5.500E-004	3	IA TO CONTAINMENT AOV IA-3048 FAILS TOOPEN
IA--AOV-CC-03079	5.500E-004	3	SA TO IA VALVE IA-3079 FAILS TO OPEN
IA--AOV-CM-01867	2.590E-005	3	COMMON MODE FAILUREOF AOVS 187 AND 186
IA--AOV-CM-04748	2.590E-005	3	IA-3047 AND IA-3048FAIL TO OPEN DUE T O CCF
IA--AOV-CM-30478	2.590E-005	3	COMMON MODE FAILUREIA- 3047 - 3048 C I PEN. 33
IA--AOV-CM-30487	0.000E+000	3	COMMON IA-3047 - 3048 FAIL TO STAY CLOSED PEN.
IA--AOV-CM-31479	2.590E-005	3	IA-3014 AND IA-3079FAIL TO OPEN DUE T O CCF
IA--AOV-OC-00187	3.862E-005	4	AOV IA-187 SPURIOUSLY CLOSES
IA--AOV-OO-03047	5.500E-004	3	IA-3047 FAILS OPEN CI PEN. 33A
IA--AOV-OO-03048	5.500E-004	3	IA-3048 FAILS OPEN CI PEN. 33B
IA--CKV-CC-00281	5.000E-005	3	CHECK VALVE IA-281 FAILS TO OPEN
IA--CKV-CC-00282	5.000E-005	3	CHECK VALVE IA-282 FAILS TO OPEN
IA--CKV-CC-01182	5.000E-005	3	CHECK VALVE IA-1182FAILS TO OPEN
IA--CKV-CC-01192	5.000E-005	3	CHECK VALVE IA-1192FAILS TO OPEN
IA--CKV-CC-01206	5.000E-005	3	CHECK VALVE IA-1206FAILS TO OPEN
IA--CKV-CC-01209	5.000E-005	3	CHECK VALVE IA-1209FAILS TO OPEN
IA--CKV-CC-01605	5.000E-005	3	CHECK VALVE IA-1605FAILS TO OPEN
IA--CKV-CC-01606	5.000E-005	3	CHECK VALVE IA-1606FAILS TO OPEN
IA--CKV-CM-06-05	6.470E-007	3	IA-1206 AND IA-1605FAIL TO OPEN DUE T O CCF
IA--CKV-CM-09-05	6.470E-007	3	IA-1209 AND IA-1605FAIL TO OPEN DUE T O CCF
IA--CKV-CM-09-06	6.470E-007	3	IA-1209 AND IA-1606FAIL TO OPEN DUE T O CCF
IA--CKV-CM-11892	2.350E-006	3	IA-1182 AND IA-1192FAIL TO OPEN DUE T O CCF
IA--CKV-CM-12069	6.470E-007	3	IA-1206 AND IA-1209FAILS TO OPEN DUE TO CCF
IA--CKV-CM-12606	6.470E-007	3	IA-1206 AND IA-1606FAIL TO OPEN DUE T O CCF
IA--CKV-CM-16056	6.470E-007	3	IA-1605 AND IA-1606FAIL TO OPEN DUE T O CCF
IA--CKV-CM-18392	4.700E-005	3	CHK VLV IA-1183 - 1192 FAIL OPEN CM CIPEN. 33A
IA--CKV-OO-00281	1.000E-003	3	CHECK VALVE IA-281FAILS TO CLOSE
IA--CKV-OO-00282	1.000E-003	3	CHECK VALVE IA-282 FAILS TO CLOSE
IA--CKV-OO-01183	1.000E-003	3	CHK VLV IA-1183 FAILS OPEN CI PEN. 33A
IA--CKV-OO-01192	1.000E-003	3	CHK VLV IA-1192 FAILS OPEN CI PEN. 33B

IA--F---CM-049AB	2.290E-006	3	FILTERS F-49A AND F-49B PLUG DUE TO CCF
IA--F---CM-050AB	2.290E-006	3	FILTERS F-50A AND F-50B PLUG DUE TO CCF
IA--F---PG-0037A	9.741E-005	4	FILTER F-37A PLUGGED
IA--F---PG-0037B	9.741E-005	4	FILTER F-37B PLUGGED
IA--F---PG-0049A	9.741E-005	4	AIR DRYER AFTERFILTER F-49A PLUGGED
IA--F---PG-0049B	9.741E-005	4	AIR DRYER AFTERFILTER F-49B PLUGGED
IA--F---PG-0050A	9.741E-005	4	AIR DRYER PREFILTERF-50A PLUGGED
IA--F---PG-0050B	9.741E-005	4	AIR DRYER PREFILTERF-50B PLUGGED
IA--HX--IL-0049A	2.400E-005	4	HEAT EXCHANGER 49A FAILS
IA--HX--IL-0049B	2.400E-005	4	HEAT EXCHNAGER 49B FAILS
IA--HX--PG-0049A	6.301E-006	4	
IA--HX--PG-0049B	6.301E-006	4	
IA--HX--PG-K2AHX	6.301E-006	4	
IA--HX--PG-K2BHX	6.301E-006	4	
IA--K---CM--ALL4	1.920E-004	3	ALL COMPRESSORS FAIL TO START/RUN DUE TO CCF
IA--K---FR-0002A	1.468E-003	4	COMPRESSOR K-2A FAILS TO RUN
IA--K---FR-0002B	1.468E-003	4	COMPRESSOR K-2B FAILS TO RUN
IA--K---FS-0002A	2.070E-003	3	IA COMPRESSOR K-2A FAILS TO START
IA--K---FS-0002B	2.070E-003	3	IA COMPRESSOR K-2B FAILS TO START
IA--K---TM-0002A	6.690E-002	3	IA COMPRESSOR K-2A UNAVAILABLE DUE TO T/M
IA--K---TM-0002B	6.690E-002	3	IA/SA COMPRESSOR TEST AND MAINTENANCE
IA--MV--PG-01207	9.109E-004	4	MANUAL VALVE IA-1207 PLUGS
IA--MV--PG-01210	9.109E-004	4	MANUAL VALVE IA-1210 PLUGS DUE TO CCF
IA--PIP-RP-NONIS	1.000E-007	3	NON-ISOLATABLE PIPEOR VALVE RUPTURE I N IA SY
IA--PS--CM-04-76	1.410E-008	3	PS-3004 AND PS-3076FAIL TO XFER DUE T O CCF
IA--PS--CM-36778	2.160E-008	3	PS-3036 - PS-3077 AND PS-3078 FAIL DUE TO CCF
IA--PS--FT-03000	3.000E-007	3	PRESSURE SWITCH PS-3000 FAILS TO TRANSFER
IA--PS--FT-03004	3.000E-007	3	PRESSURE SWITCH PS-3004 FAILS TO TRANSFER
IA--PS--FT-03017	3.000E-007	3	PRESSURE SWITCH PS-3017 FAILS TO STARTCOMPRE
IA--PS--FT-03036	3.000E-007	3	PRESSURE SWITCH PS-3036 FAILS TO TRANSFER
IA--PS--FT-03076	3.000E-007	3	PRESSURE SWITCH PS-3076 FAILS TO TRANSFER
IA--PS--FT-03077	3.000E-007	3	PRESSURE SWITCH PS-3077 FAILS TO TRANSFER
IA--PS--FT-03078	3.000E-007	3	PRESSURE SWITCH PS-3078 FAILS TO TRANSFER
IA--SOV-CC-3000S	2.051E-003	3	AIR DRYER BYPASS VALVE IA-3000S FAILS TO OPEN
IA--T---RP-0033B	1.200E-005	3	AIR RECEIVER T-33B RUPTURE
IA--T---RP-0033C	1.200E-005	3	AIR RECEIVER T-33C RUPTURE
IAI-F---CM-3537A	2.290E-006	3	FILTERS F-35A AND F-37A PLUG DUE TO CCF

IAI-F---CM-3537B	2.290E-006	3	FILTERS F-35B AND F-37A PLUG DUE TO CCF
IAI-PIP-RP-ISLOA	2.740E-007	3	ISOLATABLE INSTRUMENT AIR SYSTEM RUPTURE
INIT-A	5.000E-006	3	INITIATING EVENT LARGE LOCA (>6)
INIT-EXC	9.900E-007	3	INITIATING EVENT EXCESSIVE LOCA (VESSEL FAILURE)
INIT-GENERIC	1.000E+000	3	GENERIC INITIATOR SET TO 1.00
INIT-ISL	1.100E-007	3	INITIATING EVENT INTERFACING SYSTEMS LOCA
INIT-R	6.900E-003	3	INITIATING EVENT SGTR
INIT-S1	1.100E-004	3	INITIATING EVENT MEDIUM LOCA (>2 TO 6)
INIT-S2	3.200E-003	3	INITIATING EVENT SMALL LOCA (3/8 TO 2)
INIT-SBO	7.100E-003	3	INITIATING EVENT SBO
INIT-T1	7.100E-003	3	INITIATING EVENT LOSS OF OFFSITE POWER (DUAL)
INIT-T2	1.900E-001	3	INITIATING EVENT TRANSIENT WITHOUT PCS
INIT-T3	6.600E-001	3	INITIATING EVENT TRANSIENT WITH PCS
INIT-TCC	3.650E+002	3	INITIATING EVENT LOSS OF COMPONENT COOLING
INIT-TD1	3.650E+002	3	INITIATING EVENT LOSS OF BUS D-01
INIT-TD2	3.650E+002	3	INITIATING EVENT LOSS OF BUS D-02
INIT-TFB	4.300E-003	3	INITIATING EVENT STEAM/FEED BREAK INSIDE CONTAINMENT
INIT-TIA	3.650E+002	3	INITIATING EVENT LOSS OF INSTRUMENT AIR
INIT-TSB	9.900E-003	3	INITIATING EVENT STEAM LINE BREAK OUTSIDE CONTAINMENT
INIT-TSW	3.650E+002	3	INITIATING EVENT LOSS OF SERVICE WATER
IRA-INDUCED-SGTR	2.700E-003	3	INDUCED STEAM GENERATOR TUBE RUPTURE
IRB-INDUCED-SGTR	2.700E-002	3	INDUCED STEAM GENERATOR TUBE RUPTURE
LERF	1.000E+000	3	LERF FLAG
LO--HX--IL-0056A	2.400E-005	4	MFW PUMP P-28A LUBEOIL HX-56A LEAK
LO--HX--IL-0056B	2.400E-005	4	MFW PUMP P-28B LUBEOIL HX-56B LEAK
LO--T---RP-0052A	1.200E-005	3	MFW PUMP P-28A LUBEOIL TANK RUPTURE
LO--T---RP-0052B	1.200E-005	3	MFW PUMP P-28B LUBEOIL TANK RUPTURE
MS--ADV-CC1-2015	1.732E-003	3	BLOCK 13 ATM. STEAMDUMP THROTTLE VLV UNIT 1 "B" SG
MS--ADV-CC1-2016	1.732E-003	3	BLOCK 12 ATM. STEAMDUMP THROTTLE VLV UNIT 1 "A" SG
MS--ADV-CC2-2015	1.732E-003	3	BLOCK 56 ATM STEAM DUMP THROTTLE VALVE"B" STEAM GENERATOR
MS--ADV-CC2-2016	1.732E-003	3	BLOCK 42 ATM STEAM DUMP THROTTLE VALVEU2 "A" STEAM GEN.
MS--ADV-CM1-1516	8.510E-004	3	UNIT 1 A AND B SG DUMP VLVS 2015-2016
MS--ADV-CM2-1516	8.510E-004	3	COMMON MODE FAIL TO OPEN RELIEF VLVS2015-2016 UNIT 2
MS--AOV-CC-02050	9.750E-003	3	TBV MS-2050 FAILS TO OPEN
MS--AOV-CC-02051	9.750E-003	3	TBV MS-2051 FAILS TO OPEN
MS--AOV-CC-02052	9.750E-003	3	TBV MS-2052 FAILS TO OPEN
MS--AOV-CC-02053	9.750E-003	3	TBV MS-2053 FAILS TO OPEN

MS--AOV-CC-02054	9.750E-003	3	TBV MS-2054 FAILS TO OPEN
MS--AOV-CC-02055	9.750E-003	3	TBV MS-2055 FAILS TO OPEN
MS--AOV-CC-02056	9.750E-003	3	TBV MS-2056 FAILS TO OPEN
MS--AOV-CC-02057	9.750E-003	3	TBV MS-2057 FAILS TO OPEN
MS--AOV-CM--ALL8	6.150E-004	3	CCF OF ALL 8 TBVS TO OPEN
MS--CKV-OO-2017A	1.000E-003	3	NON-RETURN CHECK VALVE MS-2017A FAILS TO CLOSE
MS--CKV-OO-2018A	1.000E-003	3	NON-RETURN CHECK VLV MS-2018A FAILS TOCLOSE
MS--MOV-CC1-2019	3.650E-003	3	BLOCK 24 MAIN STEAMSUPPLY VALVE FOR TDP 1P-29
MS--MOV-CC1-2020	3.650E-003	3	BLOCK 22 MAIN STEAMSUPPLY VALVE FOR TDP 1P-29
MS--MOV-CC2-2019	3.650E-003	3	BLOCK 53 MAIN STEAMSUPPLY VALVE FOR TDP 2P-29
MS--MOV-CC2-2020	3.650E-003	3	BLOCK 40 MAIN STEAMSUPPLY VALVE FOR TDP 2P-29
MS--MOV-CM--ALL4	2.180E-005	3	BLOCKS 22/24/40/53 1(2)-MS-2020 1(2)-MS-2019
MS--MOV-CM-10-19	2.140E-005	3	BLOCKS 22 AND 24 1-MS-2020 1-MS-2019
MS--MOV-CM-10-20	2.140E-005	3	BLOCKS 22 AND 40 1-MS-2020 2-MS-2020
MS--MOV-CM-10-29	2.140E-005	3	BLOCKS 22 AND 53 1-MS-2020 2-MS-2019
MS--MOV-CM-19-20	2.140E-005	3	BLOCKS 24 AND 40 1-MS-2019 2-MS-2020
MS--MOV-CM-19-29	2.140E-005	3	BLOCKS 24 AND 53 1-MS-2019 2-MS-2019
MS--MOV-CM-29-20	2.140E-005	3	BLOCKS 53 AND 40 2-MS-2019 2-MS-2020
MS--MOV-CM101920	1.710E-005	3	BLOCKS 22 40 24 1(2)-MS-2020 1-MS-2019
MS--MOV-CM101929	1.710E-005	3	BLOCKS 22 24 53 1-MS-2020 1(2)-MS-2019
MS--MOV-CM102920	1.710E-005	3	BLOCKS 22 40 53 1(2)-MS-2020 2-MS-2019
MS--MOV-CM192920	1.710E-005	3	BLOCKS 24 53 40 1(2)-MS-2019 2-MS-2020
MS--MOV-OC1-2019	5.977E-007	4	BLOCK 24 MAIN STEAMSUPPLY VALVE FOR TDP 1P-29
MS--MOV-OC1-2020	5.977E-007	4	BLOCK 22 MAIN STEAMSUPPLY VALVE FOR TDP 1P-29
MS--MOV-OC2-2019	5.977E-007	4	BLOCK 53 MAIN STEAMSUPPLY VALVE FOR TDP 2P-29
MS--MOV-OC2-2020	5.977E-007	4	BLOCK 40 MAIN STEAMSUPPLY VALVE FOR TDP 2P-29
MS--MSV-OO-02017	7.810E-003	3	MSIV MS-2017 FAILS TO CLOSE
MS--MSV-OO-02018	7.810E-003	3	MSIV MS-2018 FAILS TO CLOSE
MS--SV--CC1-2005	1.032E-002	3	BLOCK 13 SAFETY RELIEF VLV UNIT 1 "B" STEAM GENERATOR
MS--SV--CC1-2006	1.032E-002	3	BLOCK 13 SAFETY RELIEF VLV UNIT 1 "B" STEAM GENERATOR
MS--SV--CC1-2007	1.032E-002	3	BLOCK 13 SAFETY RELIEF VLV UNIT 1 "B" STEAM GENERATOR
MS--SV--CC1-2008	1.032E-002	3	BLOCK 13 SAFETY RELIEF VLV UNIT 1 "B" STEAM GENERATOR
MS--SV--CC1-2010	1.032E-002	3	BLOCK 12 SAFETY RELIEF VLV UNIT 1 "A" STEAM GENERATOR
MS--SV--CC1-2011	1.032E-002	3	BLOCK 12 SAFETY RELIEF VLV UNIT 1 "A" STEAM GENERATOR
MS--SV--CC1-2012	1.032E-002	3	BLOCK 12 SAFETY RELIEF VLV UNIT 1 "A" STEAM GENERATOR
MS--SV--CC1-2013	1.032E-002	3	BLOCK 12 SAFETY RELIEF VLV UNIT 1 "A" STEAM GENERATOR
MS--SV--CC2-2005	1.032E-002	3	BLOCK 56 SAFETY RELIEF VLV UNIT 2 "B" STEAM GENERATOR

MS--SV--CC2-2006	1.032E-002	3	BLOCK 56 SAFETY RELIEF VLV UNIT 2 "B" STEAM GENERATOR
MS--SV--CC2-2007	1.032E-002	3	BLOCK 56 SAFETY RELIEF VLV UNIT 2 "B" STEAM GENERATOR
MS--SV--CC2-2008	1.032E-002	3	BLOCK 56 SAFETY RELIEF VLV UNIT 2 "B" STEAM GENERATOR
MS--SV--CC2-2010	1.032E-002	3	BLOCK 42 SAFETY RELIEF VLV UNIT 2 "A" STEAM GENERATOR
MS--SV--CC2-2011	1.032E-002	3	BLOCK 42 SAFETY RELIEF VLV UNIT 2 "A" STEAM GENERATOR
MS--SV--CC2-2012	1.032E-002	3	BLOCK 42 SAFETY RELIEF VLV UNIT 2 "A" STEAM GENERATOR
MS--SV--CC2-2013	1.032E-002	3	BLOCK 42 SAFETY RELIEF VLV UNIT 2 "A" STEAM GENERATOR
MS--SV--CM---U18	6.510E-004	3	COMMON MODE FAIL TO OPEN ALL 8 SAFE RELIEF VLVS - UNIT1
MS--SV--CM---U28	6.510E-004	3	COMMON MODE FAIL TO OPEN ALL 8 SAFE RELIEF VLVS - UNIT2
MS--SV--CM--25-8	5.720E-005	3	COMMON MODE FAIL TO OPEN RELIEF VLVS2005/6/7/8 UNIT 2
MS--SV--CM-10-13	5.720E-005	3	BLOCK 12 1 ASG RELIEF VLVS 2010/11/12/13
MS--SV--CM1--5-8	5.720E-005	3	COMMON MODE FAIL TO OPEN RELIEF VLVS2005/6/7/8
MS--SV--CM210-13	5.720E-005	3	COMMON MODE ALL 4 SG RELIEF VALVES A SG
MS--SV--OO1-2005	3.140E-003	3	BLOCK 13 SAFETY RELIEF VLV UNIT 1 "B" STEAM GENERATOR
MS--SV--OO1-2006	3.140E-003	3	BLOCK 13 SAFETY RELIEF VLV UNIT 1 "B" STEAM GENERATOR
MS--SV--OO1-2010	3.140E-003	3	BLOCK 12 SAFETY RELIEF VLV UNIT 1 "A" STEAM GENERATOR
MS--SV--OO1-2011	3.140E-003	3	BLOCK 12 SAFETY RELIEF VLV UNIT 1 "A" STEAM GENERATOR
MS--SV--OO2-2005	3.140E-003	3	BLOCK 56 SAFETY RELIEF VLV UNIT 2 "B" STEAM GENERATOR
MS--SV--OO2-2006	3.140E-003	3	BLOCK 56 SAFETY RELIEF VLV UNIT 2 "B" STEAM GENERATOR
MS--SV--OO2-2010	3.140E-003	3	BLOCK 42 SAFETY RELIEF VLV UNIT 2 "A" STEAM GENERATOR
MS--SV--OO2-2011	3.140E-003	3	BLOCK 42 SAFETY RELIEF VLV UNIT 2 "A" STEAM GENERATOR
MS--VLV-OC-1-126	2.989E-006	4	BLOCK 9 MANUAL VLV FROM MAIN STEAM VLVS TO TDP 1P29
MS--VLV-OC-1-235	2.989E-006	4	BLOCK 22 MANUAL ISOL. VLV FOR MAIN STEAM VLV 1P-29
MS--VLV-OC-1-237	2.989E-006	4	BLOCK 24 MANUAL ISOL. VLV FOR MAIN STEAM VLV 1P-29
MS--VLV-OC-2-126	2.989E-006	4	BLOCK 44 MANUAL VLVFROM MAIN STEAM VLVS TO TDP 2P-29
MS--VLV-OC-2-235	2.989E-006	4	BLOCK 40 MAN. VLV ON MAIN STEAM LINE TO TDP 2P-29
MS--VLV-OC-2-237	2.989E-006	4	BLOCK 53 MANUAL ISOL. VLV FOR MAIN STEAM VLV 2P-29
MS--VLV-RE-1-235	1.000E-003	3	BLOCK 22 MANUAL ISOL. VLV FOR MAIN STEAM VLV 1P-29
MS--VLV-RE-1-237	1.000E-003	3	BLOCK 24 MANUAL ISOL. VLV FOR MAIN STEAM VLV 1P-29
MS--VLV-RE-2-235	1.000E-003	3	BLOCK 40 MAN. VLV ON MAIN STEAM LINE TO TDP 2P-29
MS--VLV-RE-2-237	1.000E-003	3	BLOCK 53 MANUAL ISOL. VLV FOR MAIN STEAM VLV 2P-29
MS-1MOV-OC1-2019	2.491E-008	4	BLOCK 24 MAIN STEAMSUPPLY VALVE FOR TDP 1P-29
MS-1MOV-OC1-2020	2.491E-008	4	BLOCK 22 MAIN STEAMSUPPLY VALVE FOR TDP 1P-29
MS-1MOV-OC2-2019	2.491E-008	4	BLOCK 53 MAIN STEAMSUPPLY VALVE FOR TDP 2P-29
MS-1MOV-OC2-2020	2.491E-008	4	BLOCK 40 MAIN STEAMSUPPLY VALVE FOR TDP 2P-29
MS-1VLV-OC-1-126	1.245E-007	4	BLOCK 9 MANUAL VLV FROM MAIN STEAM VLVS TO TDP 1P29
MS-1VLV-OC-1-235	1.245E-007	4	BLOCK 22 MANUAL ISOL. VLV FOR MAIN STEAM VLV 1P-29

MS-1VLV-OC-1-237	1.245E-007	4	BLOCK 24 MANUAL ISOL. VLV FOR MAIN STEAM VLV 1P-29
MS-1VLV-OC-2-235	1.245E-007	4	BLOCK 40 MAN. VLV ON MAIN STEAM LINE TO TDP 2P-29
MS-1VLV-OC-2-237	1.245E-007	4	BLOCK 53 MANUAL ISOL. VLV FOR MAIN STEAM VLV 2P-29
MULTIPLIER--MTIE	3.650E+002	3	CONVERSION FROM 24HR TO 1YR MISSION TIME
NON-SBO-FLG	1.000E+000	3	FLAG TO INDICATE NON-SBO SEQUENCES
NONRECOVERAC-1H	4.100E-001	3	NON-RECOVERY OF AC POWER WITHIN 1 HOUR
NONRECOVERAC-2H	2.800E-001	3	NON-RECOVERY OF AC POWER WITHIN 2 HOURS
NONRECOVERAC-4H	1.300E-001	3	NON-RECOVERY OF AC POWER WITHIN 4 HOURS
NONRECOVERAC-5H	9.000E-002	3	NON-RECOVERY OF AC POWER WITHIN 5 HOURS
NONRECOVERAC-7H	8.200E-002	3	NON-RECOVERY OF AC POWER WITHIN 7 HR
OP--HEP--DGFOXFR	1.000E+000	3	OPERATORS FAIL TO ALLIGN VALVES FOR FUEL OIL CROSS-TIES
PLA-RX-POWER-HI	1.000E+000	3	REACTOR POWER GREATER THAN 40%
PLA-RX-POWER-LOW	0.000E+000	3	REACTOR POWER LESS THAN 40%
PRA-PRESS-RELIEF	2.000E-001	3	PRIMARY PRESSURE RELIEF AFTER ATWS
PROB-SLOCA-2HR	5.000E-003	3	PROBABILITY OF SEALLOCA WITHIN 2 HOUR S
RC--AOV-OO-00508	1.732E-003	3	RC-508 FAILS OPEN CI PEN. 30C
RC--CKV-OO-00529	1.000E-003	3	CHECK VLV RC-529 FAILS OPEN CI PEN. 30C
RC--MDP-LK-RCPSL	1.600E-002	3	INTERRUPTION OF RCPSEAL COOLING FAILS SEALS
RC--MOV-CC-00515	1.180E-003	3	PORV BLOCK VALVE RC-515 FAILS TO OPEN
RC--MOV-CC-00516	1.180E-003	3	PORV BLOCK VALVE RC-516 FAILS TO OPEN
RC--MOV-CM-51516	5.550E-005	3	RC-515 AND RC-516 FAIL TO OPEN DUE TO CCF
RC--MOV-OC-00515	5.977E-007	4	BLOCK VALVE RC-515 FAILS TO STAY OPEN (24 HR)
RC--MOV-OC-00516	5.977E-007	4	BLOCK VALVE RC-516 FAILS TO STAY OPEN (24 HR)
RC--MOV-OO-00515	1.180E-003	3	BLOCK VALVE RC-515 FTC
RC--MOV-OO-00516	1.180E-003	3	BLOCK VALVE RC-516 FTC
RC--PIP-RP-00CLA	5.000E-001	3	LARGE OR MEDIUM LOCA ON RC COLD LEG A
RC--PIP-RP-00CLB	5.000E-001	3	LARGE OR MEDIUM LOCA ON RC COLD LEG B
RC--POR-CC-00430	3.000E-003	3	PZR PORV RC-430 FAILS TO OPEN
RC--POR-CC-0431C	3.000E-003	3	PZR PORV RC-431C FAILS TO OPEN
RC--POR-CM-4301C	1.020E-004	3	CCF OF BOTH PORVS RC-430 AND RC-431C TO OPEN
RC--POR-LOINAIR	5.000E-001	3	RELIEF VALVE REQUIRED TO OPEN AFTER LOINAIR
RC--POR-OO-00430	3.000E-003	3	PORV RC-430 FAILS TO RECLOSE
RC--POR-OO-0431C	3.000E-003	3	PORV RC-431C FAILS TO RECLOSE
RCA-PTS-RUPTURE	1.000E-004	3	PTS RUPTURE AFTER EXCESS COOLDOWN W/ SI
RCB-PTS-RUPTURE	1.000E-005	3	PTS RUPTURE AFTER EXCESSIVE COOLDOWN
RCD-PORV-STUCK	1.000E-001	3	PORV STUCK OPEN ANDCANNOT BE ISOLATED
REC-MAN-OPENVLV2	1.000E-001	3	OP. FAILS TO MAN. OPEN IA SUPPLY VLVSTO CONTAINMENT

REC-OPEN-CV0112	1.000E-001	3	OP. FAILS TO MAN. OPEN CV-112B VALVE (RWST TO CHRG.PMPS)
RECISOLATE-1	5.000E-002	3	FAILURE TO MANUALLYCLOSE MSIVS LOCALLY
RH--AOV-CO-00626	1.931E-005	4	A TRAIN RHR FLOW CONTROL VALVE FAILSOPEN
RH--AOV-OC-00624	1.931E-005	4	A RHR FLOW CONTROL VALVE
RH--AOV-OC-00625	1.931E-005	4	B RHR FLOW CONTROL VALVE
RH--CKV-CC-0710A	5.000E-005	3	A TRAIN RHR PUMP DISCH CHK VALVE FAILS TO OPEN
RH--CKV-CC-0710B	5.000E-005	3	B TRAIN RHR PUMP DISCH CHK VALVE FAILS TO OPEN
RH--CKV-CM-710AB	1.040E-005	3	A AND B TRAIN RHR PUMP DISCH CHK VLV FAILS CLOSED
RH--MDP-CM-R10AB	8.450E-006	3	P10A AND B FAIL TO RUN DUE TO COMMON MODE
RH--MDP-CM-S10AB	2.450E-005	3	P10A AND B FAIL TO START DUE TO COMMON MODE
RH--MDP-FR-0010A	7.908E-005	4	A TRAIN RHR PUMP FAIL TO RUN
RH--MDP-FR-0010B	7.908E-005	4	B TRAIN RHR PUMP FAIL TO RUN
RH--MDP-FS-0010A	3.880E-004	3	A TRAIN RHR PUMP FAIL TO START
RH--MDP-FS-0010B	3.880E-004	3	B TRAIN RHR PUMP FAIL TO START
RH--MDP-TM-0010A	1.490E-003	3	A RHR PUMP TEST AND MAINTENANCE
RH--MDP-TM-0010B	1.490E-003	3	B RHR PUMP TEST AND MAINTENANCE
RH--MOV-CO-00720	9.245E-006	4	RHR SHUT DOWN COOLING DISCHARGE MOV
RH--MV--CO-00742	1.200E-006	4	MAN VALVE RH-742 TRANSFERS OPEN (DIVERTS RHR)
RH--MV--CO-0742A	1.200E-006	4	MAN VLV RH-742A FAILS OPEN CI PEN. 22
RH--VLV-OC-0709A	1.495E-006	4	A RHR PUMP DISCH MANUAL ISOLATION VALVE XTRANSFERS CL
RH--VLV-OC-0709B	1.495E-006	4	B RHR PUMP DISCH MANUAL ISOLATION VALVE XTRANSFERS CL
RH--VLV-OC-0715A	1.495E-006	4	A RHR HX INLET MANUAL ISOLATION VALVE XTRANSFERS CL
RH--VLV-OC-0715B	1.495E-006	4	B RHR HX INLET MANUAL ISOLATION VALVE XTRANSFERS CL
RH--VLV-OC-0716A	1.495E-006	4	A RHR HX DISCHARGE MANUAL ISOLATION VALVE
RH--VLV-OC-0716B	1.495E-006	4	B RHR HX DISCHARGE MANUAL ISOLATION VALVE
RH--VLV-RE-0706A	1.000E-003	3	A RHR FULL FLOW TEST LINE NOT ISOL.PRE-INITIATER
RH--VLV-RE-0706B	1.000E-003	3	B RHR FULL FLOW TEST LINE NOT ISOL.PRE-INITIATER
RP--AMP-NO-0429B	2.000E-005	4	DYNAMIC COMPENSATORPM-429B FAILS
RP--AMP-NO-0430C	2.000E-005	4	DYNAMIC COMPENSATORPM-430C FAILS
RP--AMP-NO-0431C	2.000E-005	4	DYNAMIC COMPENSATORPM-431C FAILS
RP--AMP-NO-0449B	2.000E-005	4	DYNAMIC COMPENSATORPM-449B FAILS
RP--BIS-FT-0429A	3.000E-007	3	BISTABLE PC-429A FAILS TO TRANSFER
RP--BIS-FT-0429E	3.000E-007	3	BISTABLE PC-429E FAILS TO TRANSFER
RP--BIS-FT-0430A	3.000E-007	3	BISTABLE PC-430A FAILS TO TRANSFER
RP--BIS-FT-0430H	3.000E-007	3	BISTABLE PC-430H FAILS TO TRANSFER
RP--BIS-FT-0431A	3.000E-007	3	BISTABLE PC-431A FAILS TO TRANSFER
RP--BIS-FT-0431J	3.000E-007	3	BISTABLE PC-431J FAILS TO TRANSFER

RP--BIS-FT-0449A	3.000E-007	3	BISTABLE PC-449A FAILS TO TRANSFER
RP--BIS-FT-461AB	3.000E-007	3	BISTABLE LC-461A/B FAILS TO TRANSFER
RP--BIS-FT-462AB	3.000E-007	3	BISTABLE LC-462A/B FAILS TO TRANSFER
RP--BIS-FT-463CD	3.000E-007	3	BISTABLE LC-463C/D FAILS TO TRANSFER
RP--BIS-FT-471AB	3.000E-007	3	BISTABLE LC-471A/B FAILS TO TRANSFER
RP--BIS-FT-472AB	3.000E-007	3	BISTABLE LC-472A/B FAILS
RP--BIS-FT-473CD	3.000E-007	3	BISTABLE LC-473C/D FAILS TO TRANSFER
RP--BKR-CC-52BYA	1.070E-003	3	REACTOR TRIP BYPASSBKR 52BYA FAILS CL OSED
RP--BKR-CC-52BYB	1.070E-003	3	REACTOR TRIP BYPASSBKR 52BYB FAILS CL OSED
RP--BKR-CC-52RTA	1.070E-003	3	REACTOR TRIP BREAKER 52RTA FAILS CLOSED
RP--BKR-CC-52RTB	1.070E-003	3	REACTOR TRIP BREAKER 52RTB FAILS CLOSED
RP--BKR-CM--RTAB	7.010E-005	3	TRIP BKRS 52/RTA AND 52/RTB FAIL DUE TO CCF
RP--BKR-CM-TABYB	7.010E-005	3	TRIP BKRS 52/RTA AND 52/BYB FAIL DUE TO CCF
RP--BKR-CM-TBBYA	7.010E-005	3	TRIP BKRS 52/RTB AND 52/BYA FAIL DUE TO CCF
RP--BKR-TM-52RTA	0.000E+000	3	RX TRIP BREAKER TEST/MAINT. UNAVAILABILITY
RP--BKR-TM-52RTB	0.000E+000	3	RX TRIP BREAKER TEST/MAINT. UNAVAILABILITY
RP--CAB-TM-TRN-A	0.000E+000	3	RX PROTECTION LOGICTEST/MAINT. UNAVAI LABILIT
RP--CAB-TM-TRN-B	0.000E+000	3	RX PROTECTION LOGICTEST/MAINT. UNAVAI LABILIT
RP--CRD-FO-00000	1.800E-006	3	MOST CONTROL RODS FAIL TO DROP INTO CORE
RP--LT--NO-00461	8.193E-006	4	LEVEL TRANSMITTER LT-461 FAILS
RP--LT--NO-00462	8.193E-006	4	LEVEL TRANSMITTER LT-462 FAILS
RP--LT--NO-00463	8.193E-006	4	LEVEL TRANSMITTER LT-463 FAILS
RP--LT--NO-00471	8.193E-006	4	LEVEL TRANSMITTER LT-471 FAILS
RP--LT--NO-00472	8.193E-006	4	LEVEL TRANSMITTER LT-472 FAILS
RP--LT--NO-00473	8.193E-006	4	LEVEL TRANSMITTER LT-473 FAILS
RP--PT--NO-00429	8.193E-006	4	PRESSURE TRANSMITTER PT-429 FAILS
RP--PT--NO-00430	8.193E-006	4	PRESSURE TRANSMITTER PT-430 FAILS
RP--PT--NO-00431	8.193E-006	4	PRESSURE TRANSMITTER PT-431 FAILS
RP--PT--NO-00449	8.193E-006	4	PRESSURE TRANSMITTER PT-449 FAILS
RP--REL-CM-R1A3A	3.880E-006	3	TRIP RELAYS RT-1A AND RT-3A FAIL DUE TO CCF
RP--REL-CM-R1A4A	3.880E-006	3	TRIP RELAYS RT-1A AND RT-4A FAIL DUE TO CCF
RP--REL-CM-R1B3B	3.880E-006	3	TRIP RELAYS RT-1B AND RT-3B FAIL DUE TO CCF
RP--REL-CM-R1B4B	3.880E-006	3	TRIP RELAYS RT-1B AND RT-4B FAIL DUE TO CCF
RP--REL-CM-R2A3A	3.880E-006	3	TRIP RELAYS RT-2A AND RT-4A FAIL DUE TO CCF
RP--REL-CM-R2A4A	3.880E-006	3	TRIP RELAYS RT-2A AND RT-4A FAIL DUE TO CCF
RP--REL-CM-R2B3B	3.880E-006	3	TRIP RELAYS RT-2B AND RT-3B FAIL DUE TO CCF
RP--REL-CM-R2B4B	3.880E-006	3	TRIP RELAYS RT-2B AND RT-4B FAIL DUE TO CCF

RP--REL-FT-0RT1A	3.000E-004	3	RELAY RT-1A FAILS TO TRANSFER
RP--REL-FT-0RT1B	3.000E-004	3	RELAY RT-1B FAILS TO TRANSFER
RP--REL-FT-0RT2A	3.000E-004	3	RELAY RT-2A FAILS TO TRANSFER
RP--REL-FT-0RT2B	3.000E-004	3	RELAY RT-2B FAILS TO TRANSFER
RP--REL-FT-0RT3A	3.000E-004	3	RELAY RT-3A FAILS TO TRANSFER
RP--REL-FT-0RT3B	3.000E-004	3	RELAY RT-3B FAILS TO TRANSFER
RP--REL-FT-0RT4A	3.000E-004	3	RELAY RT-4A FAILS TO TRANSFER
RP--REL-FT-0RT4B	3.000E-004	3	RELAY RT-4B FAILS TO TRANSFER
RP--REL-FT-429AA	3.000E-004	3	RELAY PC-429A-XA FAILS TO TRANSFER
RP--REL-FT-429AB	3.000E-004	3	RELAY PC-429A-XB FAILS TO TRANSFER
RP--REL-FT-429EA	3.000E-004	3	RELAY PC-429E-XA FAILS TO TRANSFER
RP--REL-FT-429EB	3.000E-004	3	RELAY PC-429E-XB FAILS TO TRANSFER
RP--REL-FT-430AA	3.000E-004	3	RELAY PC-430A-XA FAILS TO TRANSFER
RP--REL-FT-430AB	3.000E-004	3	RELAY PC-430A-XB FAILS TO TRANSFER
RP--REL-FT-430HA	3.000E-004	3	RELAY PC-430H-XA FAILS TO TRANSFER
RP--REL-FT-430HB	3.000E-004	3	RELAY PC-430H-XB FAILS TO TRANSFER
RP--REL-FT-431AA	3.000E-004	3	RELAY PC-431A-XA FAILS TO TRANSFER
RP--REL-FT-431AB	3.000E-004	3	RELAY PC-431A-XB FAILS TO TRANSFER
RP--REL-FT-431JA	3.000E-004	3	RELAY PC-431J-XA FAILS TO TRANSFER
RP--REL-FT-431JB	3.000E-004	3	RELAY PC-431J-XB FAILS TO TRANSFER
RP--REL-FT-449AA	3.000E-004	3	RELAY PC-449A-XA FAILS TO TRANSFER
RP--REL-FT-449AB	3.000E-004	3	RELAY, PC-449A-XB FAILS TO TRANSFER
RP--REL-FT-461BA	3.000E-004	3	RELAY LC-461B-XA FAILS TO TRANSFER
RP--REL-FT-461BB	3.000E-004	3	RELAY LC-461B-XB FAILS TO TRANSFER
RP--REL-FT-462AA	3.000E-004	3	RELAY LC-462A-XA FAILS TO TRANSFER
RP--REL-FT-462AB	3.000E-004	3	RELAY LC-462A-XB FAILS TO TRANSFER
RP--REL-FT-463CA	3.000E-004	3	RELAY LC-463C-XA FAILS TO TRANSFER
RP--REL-FT-463CB	3.000E-004	3	RELAY LC-463C-XB FAILS TO TRANSFER
RP--REL-FT-471BA	3.000E-004	3	RELAY LC-471B-XA FAILS TO TRANSFER
RP--REL-FT-471BB	3.000E-004	3	RELAY LC-471B-XB FAILS TO TRANSFER
RP--REL-FT-472AA	3.000E-004	3	RELAY LC-472A-XA FAILS TO TRANSFER
RP--REL-FT-472AB	3.000E-004	3	RELAY LC-472A-XB FAILS TO TRANSFER
RP--REL-FT-473CA	3.000E-004	3	RELAY LC-473C-XA FAILS TO TRANSFER
RP--REL-FT-473CB	3.000E-004	3	RELAY LC-473C-XB FAILS TO TRANSFER
RP--REL-SA-P7-1A	5.000E-007	3	RELAY P07-1A SPURIOUSLY OPERATES
RP--REL-SA-P7-1B	5.000E-007	3	RELAY P07-1B SPURIOUSLY OPERATES
RP--REL-SA-P7-2A	5.000E-007	3	RELAY P07-2A SPURIOUSLY OPERATES

RP--REL-SA-P7-2B	5.000E-007	3	RELAY P07-2B SPURIOUSLY OPERATES
RP--SW--CM--PBAC	1.290E-007	3	RX TRIP SWITCHES PBA AND PBC FAIL DUE TO CCF
RP--SW--CM--PBBD	1.290E-007	3	RX TRIP SWITCHES PBB AND PBD FAIL DUE TO CCF
RP--SW--CM-PABCD	6.780E-007	3	RX TRIP SWITCHES PBA - B - C - D FAIL DUE TO CCF
RP--SW--CM-PBABC	9.200E-008	3	TRIP SWITCHES PBA -PBB AND PBC FAIL DUE TO CC
RP--SW--CM-PBABD	9.200E-008	3	TRIP SWITCHES PBA -PBB AND PBD FAIL DUE TO CC
RP--SW--CM-PBACD	9.200E-008	3	TRIP SWITCHES PBA -PBC AND PBD FAIL DUE TO CC
RP--SW--CM-PBBCD	9.200E-008	3	TRIP SWITCHES PBB -PBC AND PBD FAIL DUE TO CC
RP--SW--FT---PBA	1.000E-005	3	RX TRIP PUSHBUTTON PBA FAILS TO TRANSFER
RP--SW--FT---PBB	1.000E-005	3	RX TRIP PUSHBUTTON PBB FAILS TO TRANSFER
RP--SW--FT---PBC	1.000E-005	3	RX TRIP PUSHBUTTON PBC FAILS TO TRANSFER
RP--SW--FT---PBD	1.000E-005	3	RX TRIP PUSHBUTTON PBD FAILS TO TRANSFER
SA--CKV-CC-00138	5.000E-005	3	CHECK VALVE SA-138 FAILS TO OPEN
SA--CKV-CC-00139	5.000E-005	3	CHECK VALVE SA-139 FAILS TO OPEN
SA--CKV-CC-00493	5.000E-005	3	CHECK VALVE SA-493 FAILS TO OPEN
SA--CKV-CM-13839	2.350E-006	3	SA-138 AND SA-139 FAIL TO OPEN DUE TO CCF
SA--F---CM-050AB	2.290E-006	3	FILTERS F-50A AND F-50B PLUG DUE TO CCF
SA--F---PG-0035A	9.741E-005	4	FILTER F-35A PLUGGED
SA--F---PG-0035B	9.741E-005	4	FILTER F-35B PLUGGED
SA--HX--IL-0050A	2.400E-005	4	AFTERCOOLER HX-50A TUBE LEAK
SA--HX--IL-0050B	2.400E-005	4	AFTERCOOLER HX-50B TUBE LEAK
SA--HX--PG-0050A	6.301E-006	4	K-3A AFTERCOOLER HX-50A PLUGS
SA--HX--PG-0050B	6.301E-006	4	K-3B AFTERCOOLER HX 50B PLUGS
SA--HX--PG-K3AHX	6.301E-006	4	K-3A INTERCOOLER PLUGS
SA--HX--PG-K3BHX	6.301E-006	4	
SA--K---FR-0003A	1.468E-003	4	COMPRESSOR K-3A FAILS TO RUN
SA--K---FR-0003B	1.468E-003	4	COMPRESSOR K-3B FAILS TO RUN
SA--K---FS-0003A	2.070E-003	3	SA COMPRESSOR K-3A FAILS TO START
SA--K---FS-0003B	2.070E-003	3	COMPRESSOR K-3B FAILS TO START
SA--K---TM-0003A	6.690E-002	3	SA COMPRESSOR K-3A UNAVAILABLE DUE TO T/M
SA--K---TM-0003B	6.690E-002	3	COMPRESSOR K-3B TEST AND MAINTENANCE
SA--T---RP-0033A	1.200E-005	3	AIR RECEIVER T-33A RUPTURE
SA--T---RP-0033D	1.200E-005	3	AIR RECEIVER T-33D RUPTURE
SBO-INIT-FLG	1.000E+000	3	DUMMY EVENT USED TOIDENTIFY STATION BLACKOUT EVENTS
SBO-NRA	1.000E-001	3	POWER RECOVERY AFTER CM FAILS
SBO-NRB	2.000E-001	3	POWER RECOVERY AFTER CM FAILS
SEQ-FLAG-01	1.000E+000	3	SEQUENCE FLAG

SEQ-FLAG-02	1.000E+000	3	SEQUENCE FLAG
SEQ-FLAG-03	1.000E+000	3	SEQUENCE FLAG
SEQ-FLAG-04	1.000E+000	3	SEQUENCE FLAG
SEQ-FLAG-05	1.000E+000	3	SEQUENCE FLAG
SEQ-FLAG-06	1.000E+000	3	SEQUENCE FLAG
SEQ-FLAG-07	1.000E+000	3	SEQUENCE FLAG
SEQ-FLAG-08	1.000E+000	3	SEQUENCE FLAG
SEQ-FLAG-09	1.000E+000	3	SEQUENCE FLAG
SEQ-FLAG-10	1.000E+000	3	SEQUENCE FLAG
SEQ-FLAG-11	1.000E+000	3	SEQUENCE FLAG
SEQ-FLAG-12	1.000E+000	3	SEQUENCE FLAG
SEQ-FLAG-13	1.000E+000	3	SEQUENCE FLAG
SEQ-FLAG-14	1.000E+000	3	SEQUENCE FLAG
SEQ-FLAG-15	1.000E+000	3	SEQUENCE FLAG
SEQ-FLAG-16	1.000E+000	3	SEQUENCE FLAG
SEQ-FLAG-17	1.000E+000	3	SEQUENCE FLAG
SEQ-FLAG-18	1.000E+000	3	SEQUENCE FLAG
SEQ-FLAG-19	1.000E+000	3	SEQUENCE FLAG
SEQ-FLAG-20	1.000E+000	3	SEQUENCE FLAG
SF--MV--CO-00816	1.200E-006	4	MAN. VLV SF-816 FAILS OPEN CI. PEN. 9
SGTR-A	5.000E-001	3	FRACTION OF SGTR EVENTS IN "A" TRAIN
SGTR-B	5.000E-001	3	FRACTION OF SGTR EVENTS IN "B" TRAIN
SHOS-SIA-CBRACK	0.000E+000	3	SI P15A BREAKER RACKED OUT PER PROCEDURE
SHOS-SIB-CBRACK	0.000E+000	3	SI P15B BREAKER RACKED OUT PER PROCEDURE
SI--AOV-CM-897BA	8.230E-005	3	AOV SI-897A - B FAIL OPEN DUE TO CCF
SI--AOV-CO-0835A	1.931E-005	4	SI TO A ACCUMULATORFILL VALVE
SI--AOV-CO-0835B	1.931E-005	4	SI TO B ACCUMULATORFILL VALVE
SI--AOV-OO-0825C	1.732E-003	3	AOV SI-825C FAILS OPEN PEN. 69/70
SI--AOV-OO-897A	1.732E-003	3	AOV SI-897A FAILS OPEN CI PEN. 69/70
SI--AOV-OO-897B	1.732E-003	3	AOV SI-897B FAILS OPEN CI PEN. 69/70
SI--CKV-CC-0842A	5.000E-005	3	A ACCUMULATOR DISCHARGE CHECK VALVE
SI--CKV-CC-0842B	5.000E-005	3	B ACCUMULATOR DISCHARGE CHECK VALVE
SI--CKV-CC-0845A	5.000E-005	3	A SI PUMP TO A RCS CHECK VALVE
SI--CKV-CC-0845B	5.000E-005	3	A SI PUMP TO B RCS CHECK VALVE
SI--CKV-CC-0845E	5.000E-005	3	B SI PUMP TO A RCS CHECK VALVE
SI--CKV-CC-0845F	5.000E-005	3	B SI PUMP TO F RCS CHECK VALVE
SI--CKV-CC-0853A	5.000E-005	3	A RHR OUTBOARD CHECK VALVE FAILS TO OPEN

SI--CKV-CC-0853B	5.000E-005	3	B RHR OUTBOARD CHECK VALVE FAILS TO OPEN
SI--CKV-CC-0853C	5.000E-005	3	A RHR INBOARD CHECK VALVE FAILS TO OPEN
SI--CKV-CC-0853D	5.000E-005	3	B RHR INBOARD CHECK VALVE FAILS TO OPEN
SI--CKV-CC-0854A	5.000E-005	3	RHR PUMP A SUCTIONCHECK VALVE
SI--CKV-CC-0854B	5.000E-005	3	RHR PUMP B SUCTIONCHECK VALVE
SI--CKV-CC-0867A	5.000E-005	3	A RCS COLD LEG INJECTION CHECK VALVE
SI--CKV-CC-0867B	5.000E-005	3	B RCS COLD LEG INJECTION CHECK VALVE
SI--CKV-CC-0889A	5.000E-005	3	A SI PUMP DISCHARGE CHK VLV
SI--CKV-CC-0889B	5.000E-005	3	B SI PUMP DISCHARGE CHK VLV
SI--CKV-CC-0891A	5.000E-005	3	A SI PUMP MINI FLOW CHECK VALVE
SI--CKV-CC-0891B	5.000E-005	3	B SI PUMP MINI FLOW CHECK VALVE
SI--CKV-CM-2A-7B	5.320E-007	3	SI842A AND SI867B FAIL TO OPEN DUE TO CM FAILURE
SI--CKV-CM-45AB	5.320E-007	3	COMMON MODE FAILUREOF 845AB
SI--CKV-CM-45ABE	9.430E-007	3	COMMON MODE FAILUREOF 845ABE
SI--CKV-CM-45ABF	9.430E-007	3	COMMON MODE FAILUREOF 845ABF
SI--CKV-CM-45AE	5.320E-007	3	COMMON MODE FAILUREOF 845AE
SI--CKV-CM-45AEF	9.430E-007	3	COMMON MODE FAILUREOF 845AEF
SI--CKV-CM-45AF	5.320E-007	3	COMMON MODE FAILUREOF 845AF
SI--CKV-CM-45BE	5.320E-007	3	COMMON MODE FAILUREOF 845BE
SI--CKV-CM-45BEF	9.430E-007	3	COMMON MODE FAILUREOF 845BEF
SI--CKV-CM-45BF	5.320E-007	3	COMMON MODE FAILUREOF 845BF
SI--CKV-CM-45EBA	9.200E-006	3	CHK VLV SI-845A - B- E FAIL OPEN DUE TO CCF
SI--CKV-CM-45EF	5.320E-007	3	COMMON MODE FAILUREOF 845EF
SI--CKV-CM-45FBA	9.200E-006	3	CHK VLV SI-845A - B- F FAIL OPEN DUE TO CCF
SI--CKV-CM-45FEA	9.200E-006	3	CHK VLV SI-845A - E- F FAIL OPEN DUE TO CCF
SI--CKV-CM-45FEB	9.200E-006	3	CHK VLV SI-845B - E- F FAIL OPEN DUE TO CCF
SI--CKV-CM-7A-2B	5.320E-007	3	SI867A AND SI842B FAIL TO OPEN DUE TO CM FAILURE
SI--CKV-CM-842AB	5.320E-007	3	SI842A AND SI842B FAIL TO OPEN DUE TO CM FAILURE
SI--CKV-CM-845A4	6.780E-005	3	CHK VLV SI-845A - B - C - D FAIL OPEN DUE TO CCF
SI--CKV-CM-845BA	6.400E-006	3	CHK VLV SI-845A - BCOMMON FAIL OPEN ON CI
SI--CKV-CM-845CD	6.400E-006	3	CHK VLV SI-845C - DFAIL OPEN DUE TO C CF
SI--CKV-CM-845EA	6.400E-006	3	CHK VLV SI-845A - EFAIL OPEN DUE TO C CF
SI--CKV-CM-845EB	6.400E-006	3	CHK VLV SI-845B - EFAIL OPEN DUE TO C CF
SI--CKV-CM-845FA	6.400E-006	3	CHK VLV SI-845A - FFAIL OPEN DUE TO C CF
SI--CKV-CM-845FB	6.400E-006	3	CHK VLV SI-845B - FFAIL OPEN DUE TO C CF
SI--CKV-CM-845FE	6.400E-006	3	CHK VLV SI-845E - FFAIL OPEN DUE TO C CF
SI--CKV-CM-853AB	2.150E-006	3	RHR OUTBOARD CHK VLV CM FAILURE TO OPEN

SI--CKV-CM-853AD	2.150E-006	3	RHR 853 AD Check Valve Common Mode
SI--CKV-CM-853BA	7.110E-005	3	CHK VLV SI-853A - BFAIL OPEN DUE TO C CF
SI--CKV-CM-853BC	2.150E-006	3	RHR 853 BC Check Valve Common Mode
SI--CKV-CM-853CD	2.150E-006	3	RHR INBOARD CHK VLV CM FAILURE TO OPEN
SI--CKV-CM-853DC	7.110E-005	3	CKH VLV SI-853C - DFAIL OPEN DUE TO C CF
SI--CKV-CM-854AB	1.040E-005	3	RHR PUMP AB SUCTIONCHECK VALVE COMMON MODE FAILURE
SI--CKV-CM-854BA	7.110E-005	3	CHK VLVS SI-854A - B FAIL OPEN DUE TO CCF
SI--CKV-CM-858BA	6.340E-006	3	CHK VLV SI-858A - BFAIL OPEN DUE TO C CF
SI--CKV-CM-862BA	6.340E-006	3	CHK VLVS SI-862A - B FAIL OPEN DUE TO CCF
SI--CKV-CM-867AB	5.320E-007	3	SI867A AND SI867B FAIL TO OPEN DUE TO CM FAILURE
SI--CKV-CM-867BA	6.340E-006	3	CHK VLV SI-867A - BFAIL OPEN DUE TO C CF
SI--CKV-CM-889AB	7.950E-006	3	COMMON MODE FAILUREOF DISCHRG CHK VLVS889AB
SI--CKV-CM-889BA	6.340E-006	3	CHK VLV SI-889A - BFAIL OPEN DUE TO C CF
SI--CKV-CM-891AB	7.950E-006	3	COMMON MODE FAILUREOF RECIRC CHK VLVS 891AB
SI--CKV-CM-8ABEF	2.830E-006	3	COMMON MODE FAILUREOF 845ABEF
SI--CKV-CM2A2B7B	9.430E-007	3	SI-842A SI-242B and SI-867B CC Common Mode
SI--CKV-CM2A7A2B	9.430E-007	3	SI-842A SI-867B and SI-842B CC Common Mode
SI--CKV-CM2A7A7B	9.430E-007	3	SI-842A SI-867B and SI-867B CC Common Mode
SI--CKV-CM7A2B7B	9.430E-007	3	SI-867A SI-242B and SI-867B CC Common Mode
SI--CKV-CM7AB2AB	2.830E-006	3	SI-867A and B SI-842A and B CC Common Mode
SI--CKV-CM853ABC	2.860E-006	3	RHR 853 ABC Check Valve Common Mode
SI--CKV-CM853ABD	2.860E-006	3	RHR 853 ABC Check Valve Common Mode
SI--CKV-CM853ALL	2.700E-006	3	All RHR Injec. check valves fail (Group of 4)
SI--CKV-CM853BCD	2.860E-006	3	RHR 853 BCD Check Valve Common Mode
SI--CKV-CO-0842A	1.200E-005	4	A ACCUMULATOR DISCHARGE CHECK VALVE
SI--CKV-CO-0842B	1.200E-005	4	B ACCUMULATOR DISCHARGE CHECK VALVE
SI--CKV-CO-0867B	1.200E-005	4	CHECK VALVE SI-867BFAILS TO REMAIN CL OSED
SI--CKV-CO-0891A	5.000E-007	4	A SI PUMP MINI FLOWCHECK VALVE
SI--CKV-CO-0891B	5.000E-007	4	B SI PUMP MINI FLOWCHECK VALVE
SI--CKV-OO-00895	1.000E-003	3	CHK VLV SI-895 FAILS OPEN CI PEN. 69/70
SI--CKV-OO-0845A	1.000E-003	3	CHK VLV SI-845A FAILS OPEN CI PEN. 13
SI--CKV-OO-0845B	1.000E-003	3	CHK VLV SI-845B FAILS OPEN CI PEN. 13
SI--CKV-OO-0845C	1.000E-003	3	CHK VLV SI-845C FAILS OPEN CI PEN. 27
SI--CKV-OO-0845D	1.000E-003	3	CHK VLV SI-845D FAILS OPEN CI PEN. 27
SI--CKV-OO-0845E	1.000E-003	3	CHK VLV SI-845E FAILS OPEN CI PEN. 27
SI--CKV-OO-0845F	1.000E-003	3	CHK VLV SI-845F FAILS OPEN CI PEN. 27
SI--CKV-OO-0853A	1.000E-003	3	CHK VLV SI-853A FAILS OPEN CI PEN. 8

SI--CKV-OO-0853B	1.000E-003	3	CHK VLV SI-853B FAILS OPEN CI PEN. 22
SI--CKV-OO-0853C	1.000E-003	3	CHK VLV SI-853C FAILS OPEN CI PEN. 8
SI--CKV-OO-0853D	1.000E-003	3	CHK VLV SI-853D FAILS OPEN CI PEN. 22
SI--CKV-OO-0854A	1.000E-003	3	CHK VLV SI-854A FAILS OPEN CI PEN. 8
SI--CKV-OO-0854B	1.000E-003	3	CHK VLV SI-854B FAILS OPEN CI PEN. 22
SI--CKV-OO-0858A	1.000E-003	3	CHK VLV SI-858A FAILS OPEN CI PEN. 54
SI--CKV-OO-0858B	1.000E-003	3	CHK VLV SI-858B FAILS OPEN CI PEN. 55
SI--CKV-OO-0862A	1.000E-003	3	CHK VLV SI-862A FAILS OPEN CI PEN. 54
SI--CKV-OO-0862B	1.000E-003	3	CHK VLV SI-862B FAILS OPEN CI PEN. 55
SI--CKV-OO-0867A	1.000E-003	3	CHK VLV SI-867A FAILS OPEN CI PEN. 13
SI--CKV-OO-0867B	1.000E-003	3	CHK VLV SI-867B FAILS OPEN CI PEN. 27
SI--CKV-OO-0889A	1.000E-003	3	CHK VLV SI-889A NORMAL OPEN FAILS OPENPEN. 1
SI--CKV-OO-0889B	1.000E-003	3	CHK VLV SI-889B FAILS OPEN CI PEN. 27
SI--CKV-OO-0891A	1.000E-003	3	A SI PUMP MINI FLOWCHECK VALVE STUCK OPEN PRE-INITIATOR
SI--CKV-OO-0891B	1.000E-003	3	B SI PUMP MINI FLOWCHECK VALVE STUCK OPEN PRE-INITIATOR
SI--FCV-CO-0835A	4.006E-005	4	SI TO A ACCUMULATORFILL VALVE
SI--FCV-CO-0835B	4.006E-005	4	SI TO B ACCUMULATORFILL VALVE
SI--FCV-CO-0844A	4.006E-005	4	ACCUMULATOR A DRAINVALVE
SI--FCV-CO-0844B	4.006E-005	4	ACCUMULATOR B DRAINVALVE
SI--HOV-CC-0850A	1.720E-003	3	A TRAIN RHR SUMP SUCTION HOV FAILS TO OPEN
SI--HOV-CC-0850B	1.720E-003	3	B TRAIN RHR SUMP SUCTION HOV FAILS TO OPEN
SI--HOV-CM-850AB	8.080E-005	3	COMMON MODE FAILUREFOR RHR SUMP SUCTION HOVS
SI--HOV-OC-0850A	4.465E-005	4	A TRAIN RHR SUMP SUCTION HOV TRANSFERS CLOSED
SI--HOV-OC-0850B	4.465E-005	4	B TRAIN RHR SUMP SUCTION HOV TRANSFERS CLOSED
SI--MDP-CM-R15AB	1.710E-005	3	P15A AND B FAIL TO RUN DUE TO COMMON MODE
SI--MDP-CM-S15AB	1.350E-004	3	P15A AND B FAIL TO START DUE TO COMMON MODE
SI--MDP-FR-0015A	4.079E-004	4	A TRAIN SI PUMP FAIL TO RUN
SI--MDP-FR-0015B	4.079E-004	4	B TRAIN SI PUMP FAIL TO RUN
SI--MDP-FS-0015A	2.420E-003	3	A TRAIN SI PUMP FAIL TO START
SI--MDP-FS-0015B	2.420E-003	3	B TRAIN SI PUMP FAIL TO START
SI--MDP-TM-0015A	3.360E-003	3	A SI PUMP TEST AND MAINTENANCE
SI--MDP-TM-0015B	3.360E-003	3	A SI PUMP TEST AND MAINTENANCE
SI--MOV-CC-0851A	1.260E-003	3	A TRAIN RHR SUMP SUCTION MOV FAILS TO OPEN
SI--MOV-CC-0851B	1.260E-003	3	B TRAIN RHR SUMP SUCTION MOV FAILS TO OPEN
SI--MOV-CC-0852A	1.260E-003	3	A RHR INJECTION MOVFAILS TO OPEN
SI--MOV-CC-0852B	1.260E-003	3	B RHR INJECTION MOVFAILS TO OPEN
SI--MOV-CC-0857A	1.260E-003	3	A RHR TO A SI CROSS-TIE MOV FAILES TO OPEN

SI--MOV-CC-0857B	1.260E-003	3	A RHR TO B SI CROSS-TIE MOV FAILES TO OPEN
SI--MOV-CC-0878B	1.260E-003	3	A SI TO B COLD LEG MOV FAILS CLOSED
SI--MOV-CC-0878D	1.260E-003	3	A SI TO A COLD LEG MOV FAILS CLOSED
SI--MOV-CM-825BA	6.070E-006	3	MOV SI-825A - B FAIL OPEN DUE TO CCF
SI--MOV-CM-851AB	2.640E-005	3	COMMON MODE FAILUREFOR RHR PUMP SUCTION MOVS
SI--MOV-CM-852AB	2.640E-005	3	COMMON MODE FAILURERHR INJECTION MOVS FAIL TO OPEN
SI--MOV-CM-856BA	1.430E-005	3	MOV SI-856A - B FAIL OPEN DUE TO CCF
SI--MOV-CM-857AB	9.900E-005	3	COMMON MODE FAILURE FOR A RHR TO A SI MOV
SI--MOV-CM-870BA	6.070E-006	3	MOV SI-870A - B FAIL OPEN DUE TO CCF
SI--MOV-CM-871BA	5.920E-005	3	MOV SI-871A - B FAIL OPEN DUE TO CCF
SI--MOV-CM-878BD	9.900E-005	3	COMMON MODE FAILUREA TRAIN SI TO A ANDB COLD LEG INJECT.
SI--MOV-CM-896AB	1.760E-005	3	COMMON MODE FAILURE FOR A SI PUMP SUCTION MOV
SI--MOV-CM-896BA	1.760E-005	3	MOV SI-896A - B FAIL OPEN DUE TO CCF
SI--MOV-CO-0871A	9.245E-006	4	FLOW DIVERSION FROMA TRAIN RHR TO A TRAIN CONT SPRAY
SI--MOV-CO-0871B	9.245E-006	4	FLOW DIVERSION FROMB TRAIN RHR TO B TRAIN CONT SPRAY
SI--MOV-CO-0878A	1.849E-005	4	SI-878A FAILS OPEN CI PEN. 27
SI--MOV-CO-0878C	1.849E-005	4	SI-878C FAILS OPEN CI PEN. 27
SI--MOV-CO-0896A	1.849E-005	4	A SI PUMP SUCTION MOV TRANSFERS OPEN
SI--MOV-CO-0896B	9.245E-006	4	B SI PUMP SUCTION MOV TRANSFERS OPEN
SI--MOV-OC-0825A	5.977E-007	4	SI PUMP A AND B COMMON SUCTION VALVE A
SI--MOV-OC-0825B	5.977E-007	4	SI PUMP A AND B COMMON SUCTION VALVE B
SI--MOV-OC-0851A	5.977E-007	4	A TRAIN RHR PUMP SUCTION MOV TRANSFERS CLOSED
SI--MOV-OC-0851B	5.977E-007	4	B TRAIN RHR PUMP SUCTION MOV TRANSFERS CLOSED
SI--MOV-OC-0852A	2.989E-007	4	A RHR INJECTION MOVTRANSFERS CLOSED
SI--MOV-OC-0852B	2.989E-007	4	B RHR INJECTION MOVTRANSFERS CLOSED
SI--MOV-OC-0856A	5.977E-007	4	A RHR SUCTION MOV TRANSFERS CLOSED
SI--MOV-OC-0856B	5.977E-007	4	B RHR SUCTIONMOV TRANSFERS CLOSED
SI--MOV-OC-0857A	5.977E-007	4	A RHR TO A SI CROSS-TIE MOV TRANSFERS CLOSED
SI--MOV-OC-0857B	2.989E-007	4	B RHR TO A SI CROSS-TIE MOV TRANSFERS CLOSED
SI--MOV-OC-0866A	2.989E-007	4	A SI PUMP DISCHARGE MOV
SI--MOV-OC-0866B	2.989E-007	4	B SI PUMP DISCHARGE MOV
SI--MOV-OC-0878B	2.989E-007	4	A SI PUMP TO B RCS MOV
SI--MOV-OC-0878D	2.989E-007	4	A SI PUMP TO A RCS MOV
SI--MOV-OC-0896A	5.977E-007	4	A SI PUMP SUCTION ISOLATION VALVE
SI--MOV-OC-0896B	5.977E-007	4	B SI PUMP SUCTION ISOLATION VALVE
SI--MOV-OO-0825A	1.260E-003	3	MOV SI-825A FAILS OPEN CI PEN. 69/70
SI--MOV-OO-0825B	1.260E-003	3	MOV SI-825B FAILS OPEN CI PEN. 69/70

SI--MOV-OO-0841A	1.260E-003	3	A ACCUMULATOR DISCHARGE MOV
SI--MOV-OO-0841B	1.260E-003	3	B ACCUMULATOR DISCHARGE MOV
SI--MOV-OO-0856A	1.260E-003	3	MOV SI-856A FAILS OPEN CI PEN. 69
SI--MOV-OO-0856B	1.260E-003	3	MOV SI-856B FAILS OPEN CI PEN. 70
SI--MOV-OO-0870A	1.260E-003	3	MOV SI-870A FAILS TO CLOSE
SI--MOV-OO-0870B	1.260E-003	3	MOV SI-870B FAILS TO CLOSE
SI--MOV-OO-0871A	1.260E-003	3	MOV SI-871A FAILS OPEN CI PEN. 69
SI--MOV-OO-0871B	1.260E-003	3	MOV SI-871B FAILS OPEN CI PEN. 70
SI--MOV-OO-0896A	1.260E-003	3	A SI PUMP SUCTION MOV FAILS TO CLOSE
SI--MOV-OO-0896B	1.260E-003	3	B SI PUMP SUCTION MOV FAILS TO CLOSE
SI--MOV-RE-0841A	1.000E-003	3	A ACCUMULATOR DISCHARGE MOV
SI--MOV-RE-0841B	1.000E-003	3	B ACCUMULATOR DISCHARGE MOV
SI--MV--CO-0857A	1.200E-006	4	MAN VLV SI-857A FAILS OPEN CI PEN. 8
SI--MV--CO-0857B	1.200E-006	4	MAN VLV SI-857B FAILS OPEN CI PEN. 22
SI--MV--CO-0873A	1.200E-006	4	MAN VLV SI-873A FAILS OPEN CI PEN. 54
SI--MV--CO-0873B	1.200E-006	4	MAN VLV SI-873B FAILS OPEN CI PEN. 55
SI--RV--CO-0830A	2.907E-005	4	A ACCUMULATOR RELIEF VALVE
SI--RV--CO-0830B	2.907E-005	4	B ACCUMULATOR RELIEF VALVE
SI--STR-PG--SUMP	5.000E-005	3	CONTAINMENT SUMP STRAINERS PLUGGED
SI--TNK-TM-T034A	0.000E+000	3	A ACCUMULATOR TEST AND MAINTENANCE
SI--TNK-TM-T034B	0.000E+000	3	B ACCUMULATOR TEST AND MAINTENANCE
SI--VLV-OC-0876A	1.245E-007	4	A SI PUMP MINI FLOWMANUAL ISOLATION VALVE
SI--VLV-OC-0876B	1.245E-007	4	B SI PUMP MINI FLOWMANUAL ISOLATION VALVE
SI--VLV-OC-0878E	1.495E-006	4	B SI PUMP TO A RCS MANUAL ISOLATION VALVE
SI--VLV-OC-0878F	1.495E-006	4	B SI PUMP TO B RCS MANUAL ISOLATION VALVE
SI--VLV-OC-0888A	1.495E-006	4	A SI PUMP DISCHARGE MANUAL ISOLATION VALVE
SI--VLV-OC-0888B	1.495E-006	4	B SI PUMP DISCHARGE MANUAL ISOLATION VALVE
SI--VLV-OC-0897A	2.989E-006	4	SI PUMP MINI FLOW COMMON AOV A
SI--VLV-OC-0897B	2.989E-006	4	SI PUMP MINI FLOW COMMON AOV B
SI--VLV-RE-0829A	1.000E-003	3	FAILURE TO RESTORE 829A AND LINE AFTER TEST
SI--VLV-RE-0829B	1.000E-003	3	FAILURE TO RESTORE 829B AND LINE AFTER TEST
SI--VLV-RE-0878E	1.000E-003	3	B TRAIN TO A COLD LEG MANUAL ISOLATION VALVE
SI--VLV-RE-0878F	1.000E-003	3	B TRAIN TO B COLD LEG MANUAL ISOLATION VALVE
SI-1FCV-CO-0844A	1.669E-006	4	ACCUMULATOR A DRAINVALVE (1 HR MT)
SI-1FCV-CO-0844B	1.669E-006	4	ACCUMULATOR B DRAINVALVE (1 HR MT)
SI-1RV--CO-0830A	2.423E-006	4	A ACCUMULATOR RELIEF VALVE (1 HR MT)
SI-1RV--CO-0830B	2.423E-006	4	B ACCUMULATOR RELIEF VALVE (1 HR MT)

SL-MINIMAL	7.900E-001	3	PROBABILITY OF SEAL LOCA LESS THAN21 GPM/PUMP
SL-NONMINIMAL	2.100E-001	3	PROBABILITY OF SEAL LOCA ABOVE 21 GPM/PUMP
SUB-1721	1.000E-002	3	CONT. ISO SIGNAL TOWL-1721 FAILS
SUB-3047	1.000E-002	3	CONT. ISO SIGNAL TOIA-3047 FAILS
SUB-3048	1.000E-002	3	CONT. ISO SIGNAL TOIA-3048 FAILS
SUB-508	1.000E-002	3	CONT. ISO SIGNAL TORC-508 FAILS
SUCCESSFUL-NRA	9.000E-001	3	SUCCESSFUL RECOVERYOF AC (NRA)
SUCCESSFUL-NRB	8.000E-001	3	SUCCESSFUL RECOVERYOF AC (NRB)
SUCCESSFUL-PRA	8.000E-001	3	SUCCESSFUL PRIMARY PRESSURE RELIEF
SW--AOV-CC-0012A	1.690E-004	3	
SW--AOV-CC-0012B	1.690E-004	3	CCW HX-12B TEMP CNTRL VLV SW-12B FAILSTO OPE
SW--AOV-CC-02824	1.690E-004	3	AIR OPERATED VALVE SW-2824 FAILS TO OPEN
SW--AOV-CC-02830	1.690E-004	3	AIR-OPERATED VALVE SW-2830 FAILS TO OPEN
SW--AOV-CC-02838	1.690E-004	3	SW AOV 2838 FAILS TO OPEN FOR G02
SW--AOV-CC-02839	1.690E-004	3	SW AOV 2839 FAILS TO OPEN FOR G01
SW--AOV-CC-2836A	1.690E-004	3	AIR-OPERATED VALVE SW-2836A FAILS TO OPEN
SW--AOV-CC-2836B	1.690E-004	3	AIR-OPERATED VALVE SW-2836B FAILS TO OPEN
SW--AOV-CM-28389	7.940E-006	3	SERVICE WATER AOVS SW-2838/2839 FOR G01 AND G02
SW--AOV-CM-61-62	7.940E-006	3	COMMON CAUSE FAILURE OF AOV-61 AND AOV-62
SW--AOV-OC-0012A	3.862E-005	4	FLOW CONTROL VALVE SW-12A LOSS OF FUNCTION
SW--AOV-OC-0012B	3.862E-005	4	CCW HX-12B TEMP CNTRL VLV SW-12B FAILSCLOSED
SW--AOV-OC-02824	3.862E-005	4	AOV SW-2824 SPURIOUS OPERATION
SW--AOV-OC-02830	3.862E-005	4	AOV SW-2830 TRANSFERS CLOSED
SW--AOV-OC-2836A	3.862E-005	4	AOV SW-2836A TRANSFERS CLOSED
SW--AOV-OC-2836B	3.862E-005	4	AOV SW-2836B TRANSFERS CLOSED
SW--AOV-OC1-2090	3.862E-005	4	BLOCK 28 SERVICE WATER COOLING TO TDP 1P29
SW--AOV-OO-0LW61	1.690E-004	3	AOV SW-LW-61 FAILS TO CLOSE (RADWSTE STM INLET)
SW--AOV-OO-0LW62	1.690E-004	3	AOV SW-LW-62 FAILS TO CLOSE (RADWST STM OUTLET)
SW--AOV-PG-0012A	7.200E-007	4	FLOW CONTROL VALVE SW-12A PLUGS
SW--AOV-PG-0012B	7.200E-007	4	CCW HX-12B TEMP CONTROL VALVE SW-12B PLUGS
SW--AOV-PG-02824	7.200E-007	4	
SW--AOV-PG-02830	7.200E-007	4	
SW--AOV-PG-2832A	7.200E-007	4	
SW--AOV-PG-2836A	7.200E-007	4	SW AOV 2836A PLUGS
SW--AOV-PG-2836B	7.200E-007	4	
SW--AOV-TM--2838	0.000E+000	3	SERVICE WATER AOV SW-2838 FOR G-02 COOLING
SW--AOV-TM--2839	0.000E+000	3	SERVICE WATER AOV SW-2839 FOR G-01 COOLING

SW--CKV-CC---32A	5.000E-005	3	SW DISCHARGE PUMP CHECK VALVE 32A FAILS CLOSED
SW--CKV-CC---32B	5.000E-005	3	SW DISCHARGE PUMP CHECK VALVE 32B FAILS CLOSED
SW--CKV-CC---32C	5.000E-005	3	SW DISCHARGE PUMP CHECK VALVE 32C FAILS CLOSED
SW--CKV-CC---32D	5.000E-005	3	SW DISCHARGE PUMP CHECK VALVE 32D FAILS CLOSED
SW--CKV-CC---32E	5.000E-005	3	SW DISCHARGE PUMP CHECK VALVE 32E FAILS CLOSED
SW--CKV-CC---32F	5.000E-005	3	SW DISCHARGE PUMP CHECK VALVE 32F FAILS CLOSED
SW--CKV-CC-HX49A	5.000E-005	3	INLET CHECK VALVE TO HX-49A FAILS TO OPEN
SW--CKV-CC-HX49B	5.000E-005	3	INLET CHECK VALVE TO HX-49B FAILS TO OPEN
SW--CKV-CC-HX50A	5.000E-005	3	INLET CHECK VALVE TO HX-50A FAILS TO OPEN
SW--CKV-CC-HX50B	5.000E-005	3	INLET CHECK VALVE TO HX-50B FAILS TO OPEN
SW--CKV-CC1-135A	5.000E-005	3	BLOCK 29 CHECK VLV FROM SERVICE WATER TO 1P-29 COOLING
SW--CKV-CC2-112A	5.000E-005	3	BLOCK 50 CHECK VLV FROM SERVICE WATER TO 2P-29 COOLING
SW--CKV-CM-CC-AF	3.260E-006	3	COMMON CAUSE FAILURE OF ALL SW CHECK VALVES
SW--CKV-CM135112	2.350E-006	3	BLOCKS 29 AND 50 COMMON MODE 0-SW-112A/135A
SW--CKV-CO---32A	1.200E-005	4	SW DISCH PUMP CHK VALVE SW-32A FAILSOPEN. YEARLY FAIL
SW--CKV-CO---32B	1.200E-005	4	SW DISCH PUMP CHK VALVE SW-32B FAILSOPEN. YEARLY FAIL
SW--CKV-CO---32C	1.200E-005	4	SW DISCH PUMP CHK VALVE SW-32C FAILSOPEN. YEARLY FAIL
SW--CKV-CO---32D	1.200E-005	4	SW DISCH PUMP CHK VALVE SW-32D FAILSOPEN. YEARLY FAIL
SW--CKV-CO---32E	1.200E-005	4	SW DISCH PUMP CHK VALVE SW-32E FAILSOPEN. YEARLY FAIL
SW--CKV-CO---32F	1.200E-005	4	SW DISCH PUMP CHK VALVE SW-32F FAILSOPEN. YEARLY FAIL
SW--CKV-OO---32A	1.000E-003	3	SW DISCHARGE PUMP P-32A CHECK VALVE SW-32A FAILS OPEN
SW--CKV-OO---32B	1.000E-003	3	SW DISCHARGE PUMP P-32B CHECK VALVE SW-32B FAILS OPEN
SW--CKV-OO---32C	1.000E-003	3	SW DISCHARGE PUMP P-32C CHECK VALVE SW-32C FAILS OPEN
SW--CKV-OO---32D	1.000E-003	3	SW DISCHARGE PUMP P-32D CHECK VALVE SW-32D FAILS OPEN
SW--CKV-OO---32E	1.000E-003	3	SW DISCHARGE PUMP P-32E CHECK VALVE SW-32E FAILS OPEN
SW--CKV-OO---32F	1.000E-003	3	SW DISCHARGE PUMP P-32F CHECK VALVE SW-32F FAILS OPEN
SW--CKV-OO-0135A	1.000E-003	3	CHECK VALVE SW-135AFAILS TO CLOSE
SW--CKV-PG-HX50A	1.200E-007	4	AFTERCOOLER HX-50A INLET CHECK VALVE PLUGS
SW--CKV-PG-HX50B	1.200E-007	4	AFTERCOOLER HX-50B INLET CHECK VALVE PLUGS
SW--MDP-CM-RPUMP	5.100E-006	3	COMMON CAUSE FAILURE OF ALL SW PUMPS TO RUN
SW--MDP-CM-S3PMP	1.140E-005	3	CCF OF THE STANDBY PUMPS TO START
SW--MDP-CM-SPUMP	1.090E-005	3	COMMON CAUSE FAILURE OF ALL SW PUMPS TO START
SW--MDP-FR---32A	4.727E-004	4	LOSS OF SERVICE WATER
SW--MDP-FR---32B	4.727E-004	4	LOSS OF SERVICE WATER
SW--MDP-FR---32C	4.727E-004	4	LOSS OF SERVICE WATER
SW--MDP-FR---32D	4.727E-004	4	LOSS OF SERVICE WATER
SW--MDP-FR---32E	4.727E-004	4	LOSS OF SERVICE WATER

SW--MDP-FR---32F	4.727E-004	4	LOSS OF SERVICE WATER
SW--MDP-FS---32A	3.040E-003	3	SW PUMP P-32A FAILS TO START
SW--MDP-FS---32B	3.040E-003	3	SW PUMP P-32B FAILS TO START
SW--MDP-FS---32C	3.040E-003	3	SW PUMP P-32C FAILS TO START
SW--MDP-FS---32D	3.040E-003	3	SW PUMP P-32D FAILS TO START
SW--MDP-FS---32E	3.040E-003	3	SW PUMP P-32E FAILS TO START
SW--MDP-FS---32F	3.040E-003	3	SW PUMP P-32F FAILS TO START
SW--MDP-TM---32A	1.450E-002	3	SW PUMP P-32A UNAVAIL. DUE TO TEST AND MAINT
SW--MDP-TM---32B	1.450E-002	3	SW PUMP P-32B UNAVAILABLE DUE TO TEST AND MAINT.
SW--MDP-TM---32C	1.450E-002	3	SW PUMP P-32C UNAVAILABLE DUE TO TEST AND MAINT
SW--MDP-TM---32D	1.450E-002	3	SW PUMP P-32D UNAVAILABLE DUE TO TEST AND MAINT
SW--MDP-TM---32E	1.450E-002	3	SW PUMP P-32E UNAVAILABLE DUE TO TEST AND MAINT
SW--MDP-TM---32F	1.450E-002	3	SW PUMP P-32F UNAVAILABLE DUE TO TEST AND MAINT
SW--MOV-CC--4009	2.000E-003	3	BLOCK 15 SERVICE WATER FEED MOV TO MDP P38A
SW--MOV-CC--4016	2.000E-003	3	BLOCK 19 SERVICE WATER FEED MOV TO MDP P38B
SW--MOV-CC-02880	2.000E-003	3	TURB. HALL ISOL VALVE SW-2880 FAILS TOOPEN
SW--MOV-CM-09-16	9.400E-005	3	BLOCKS 15 AND 19 COMMON MODE 0-AF-4009/4016
SW--MOV-CM-16-79	9.400E-005	3	COMMON CAUSE FAILURE OF MOV-2816AND MOV-4479
SW--MOV-CM-17-78	9.400E-005	3	COMMON CAUSE FAILURE OF MOV-2817AND MOV-4478
SW--MOV-CM27A30A	9.400E-005	3	COMMON CAUSE FAILURE OF MOV2927AAND MOV-2930A
SW--MOV-CM27B30B	9.400E-005	3	COMMON CAUSE FAILURE MOV-2927B AND MOV-2930B
SW--MOV-OC--2869	5.977E-007	4	NORTH SUPPLY HEADERMOV-2869 TRANSFERS CLOSED
SW--MOV-OC--2870	5.977E-007	4	SOUTH SUPPLY HEADERMOV-2870 TRANSFERS CLOSED
SW--MOV-OC--2890	5.977E-007	4	NORTH SUPPLY HEADERMOV-2890 TRANSFERS CLOSED
SW--MOV-OC--2891	5.977E-007	4	SOUTH SUPPLY HEADERMOV-2891 TRANSFERS CLOSED
SW--MOV-OC--4009	5.977E-007	4	BLOCK 15 SERVICE WATER FEED MOV TO MDP P38A
SW--MOV-OC--4016	5.977E-007	4	BLOCK 19 SERVICE WATER FEED TO MDP P38B
SW--MOV-OC-02880	5.977E-007	4	TURB. HALL ISOL. MOV SW-2880 TRANSFERSCLOSED
SW--MOV-OO--2816	2.000E-003	3	MOV SW-2816 FAILS TO CLOSE (U1 AUX. BLDG)
SW--MOV-OO--2817	2.000E-003	3	MOV SW-2817 FAILS TO CLOSE
SW--MOV-OO--4478	2.000E-003	3	MOV SW-4478 FAILS TO CLOSE (IN TO WT COOLERS)
SW--MOV-OO--4479	2.000E-003	3	MOV SW-4479 FAILS TO CLOSE (IN TO PAB COOLERS)
SW--MOV-OO-2927A	2.000E-003	3	MOV SW-2927A FAILS TO CLOSE SFP HX-13A INLET)
SW--MOV-OO-2927B	2.000E-003	3	MOV SW-2927B FAILS TO CLOSE SFP HX-13B INLET)
SW--MOV-OO-2930A	2.000E-003	3	MOV SW-2930A FAILS TO CLOSE (OUTLET SFP HX-13A)
SW--MOV-OO-2930B	2.000E-003	3	MOV SW-2930B FAILS TO CLOSE (OUTLET SFP-HX-13B)
SW--MOV-TM-90-91	1.460E-003	3	EAST SECTION VALVE GROUP UNAVAILTEST AND MAINT

SW--MV--CC-00322	4.406E-004	3	
SW--MV--CC-00360	4.406E-004	3	HX-12B BIG OUTLET VALVE SW-360 FAILS TO OPEN
SW--MV--PG-00047	2.988E-006	4	SW TO K-2B AND K-3BMANUAL VALVE 47 PLUGS
SW--MV--PG-00053	2.988E-006	4	SW TO K-2B AND K-3BMANUAL VALVE SW-53 PLUG
SW--MV--PG-00065	2.988E-006	4	SW VALVE MV-65 PLUGS
SW--MV--PG-00066	2.988E-006	4	
SW--MV--PG-00067	2.988E-006	4	
SW--MV--PG-00068	2.988E-006	4	
SW--MV--PG-00070	2.988E-006	4	
SW--MV--PG-00072	2.988E-006	4	
SW--MV--PG-00074	2.988E-006	4	
SW--MV--PG-00076	2.988E-006	4	
SW--MV--PG-00078	2.988E-006	4	
SW--MV--PG-00079	2.988E-006	4	
SW--MV--PG-00080	2.988E-006	4	
SW--MV--PG-00081	2.988E-006	4	
SW--MV--PG-00082	2.988E-006	4	
SW--MV--PG-00084	2.988E-006	4	
SW--MV--PG-00086	2.988E-006	4	
SW--MV--PG-00087	2.988E-006	4	
SW--MV--PG-00089	2.988E-006	4	
SW--MV--PG-00091	2.988E-006	4	
SW--MV--PG-00093	2.988E-006	4	
SW--MV--PG-00094	2.988E-006	4	SW VALVE MV-94 PLUGS
SW--MV--PG-00165	2.988E-006	4	SW TO CCW HXS ISOL.VALVE SW-165 PLUGS
SW--MV--PG-00286	2.988E-006	4	MANUAL VALVE SW-286FAILS TO REMAIN OP EN
SW--MV--PG-00322	2.988E-006	4	MANUAL VALVE SW-322PLUGS
SW--MV--PG-00346	2.988E-006	4	MANUAL VALVE SW-346PLUGS
SW--MV--PG-00360	2.988E-006	4	SW VALVE 360 BLOCKAGE
SW--MV--PG-0066A	2.988E-006	4	
SW--MV--PG-0094A	2.988E-006	4	SW VALVE 94A PLUGS
SW--MV--PG-0095A	2.988E-006	4	SW VALVE 95A PLUGS
SW--MV--PG-0095B	2.988E-006	4	
SW--MV--PG-0096A	2.988E-006	4	SW VALVE 96A PLUGS
SW--MV--PG-0096B	2.988E-006	4	
SW--MV--PG-0098A	2.988E-006	4	SW VALVE 98A SW TO HX50A PLUGS
SW--MV--PG-0098B	2.988E-006	4	SW VALVE 98B PLUGS

SW--MV--PG-0100A	2.988E-006	4	SW VALVE SW-100A PLUGS
SW--MV--PG-0100B	2.988E-006	4	
SW--MV--PG-0102A	2.988E-006	4	SW VALVE SW-102A SW FROM HX-50A PLUGS
SW--MV--PG-0102B	2.988E-006	4	SW VALVE 102B PLUGS
SW--MV--PG-0103A	2.988E-006	4	SW VALVE SW-103A PLUGS
SW--MV--PG-0103B	2.988E-006	4	
SW--MV--PG-0288A	2.988E-006	4	MANUAL VALVE SW-288A PLUGS
SW--MV--PG-0289A	2.988E-006	4	MANUAL VALVE SW-289A PLUGS
SW--MV--PG-0322A	2.988E-006	4	MANUAL VALVE SW-322A PLUGS
SW--MV--PG-0360A	2.988E-006	4	MANUAL VALVE SW-360A PLUGS
SW--SOV-CC-02820	2.051E-003	3	SOV SW-2820 FAILS TO OPERATE
SW--SOV-CC-02826	2.051E-003	3	SOV SW-2826 FAILS TO OPEN
SW--SOV-CC-2832A	2.051E-003	3	SOLENOID VALVE SW-2832A FAILS TO OPEN
SW--SOV-CC-2832B	2.051E-003	3	SOV SW-2832B FAILS TO OPEN
SW--SOV-OC-02820	4.006E-005	4	
SW--SOV-OC-02826	4.006E-005	4	SOV SW-2826 OPERATES SPURIOUSLY
SW--SOV-OC-2832A	4.006E-005	4	SOV SW-2832A SPURIOUS OPERATION
SW--SOV-OC-2832B	4.006E-005	4	SOV SW-2832B SPURIOUS OPERATION
SW--SOV-PG-02820	4.006E-005	4	
SW--SOV-PG-02826	4.006E-005	4	
SW--SOV-PG-2832B	4.006E-005	4	
SW--STR-CM-PG-BS	1.300E-005	3	STRAINERS BS-2911 AND BS-2912 PLUG DUE TO CCF.
SW--STR-CMO-1112	1.330E-006	3	COMMON CAUSE FAIL TO OPERATE. STRN 2911 AND 2912
SW--STR-FO--2911	2.820E-005	3	SW NORTH HEADER STRAINER BS-2911 FAILS TO OPERATE
SW--STR-FO--2912	2.820E-005	3	SW STRAINER BS-2912FAILS TO OPERATE
SW--STR-PG--2911	1.200E-004	4	SW STRAINER BS-2911 PLUGS
SW--STR-PG--2912	1.200E-004	4	SW STRAINER BS-2912 PLUGS
SW--STR-PG1-2998	1.200E-004	4	BLOCK 28 SERVICE WATER COOLING FOR 1P-29
SW--STR-PG2-2998	1.200E-004	4	BLOCK 49 SERVICE WATER COOLING FOR 2P-29
SW--VLV-CC1-2090	4.406E-004	3	BLOCK 28 SERVICE WATER COOLING TO TDP 1P-29
SW--VLV-CC2-2090	4.406E-004	3	BLOCK 49 SERVICE WATER COOLING FOR TDP 2P-29
SW--VLV-CM1-2090	7.940E-006	3	SERVICE WATER COOLING FOR 1P29
SW--VLV-CM2-2090	7.940E-006	3	SERVICE WATER COOLING FOR 2P29
SW--VLV-OC---003	2.989E-006	4	SOUTH SUPPLY HEADERBYPASS VALVE SW-03 TRANSFERS CLOSED
SW--VLV-OC---004	2.989E-006	4	SOUTH SUPPLY HEADERVALVE SW-04 TRANSFERS CLOSED
SW--VLV-OC---009	2.989E-006	4	SW SOUTH HEADER VALVE SW-9 TRANSFERS CLOSED
SW--VLV-OC---010	2.989E-006	4	SW PUMP ISOLATION VALVE SW-10 TRANSFERS CLOSED

SW--VLV-OC---011	2.989E-006	4	SW PUMP ISOLATION VALVE SW-11 TRANSFERS CLOSED
SW--VLV-OC---012	2.989E-006	4	SW PUMP ISOLATION VALVE SW-12 TRANSFERS CLOSED
SW--VLV-OC---013	2.989E-006	4	SW PUMP ISOLATION VALVE SW-13 TRANSFERS CLOSED
SW--VLV-OC---014	2.989E-006	4	SW PUMP ISOLATION VALVE SW-14 TRANSFERS CLOSED
SW--VLV-OC---015	2.989E-006	4	SW PUMP ISOLATION VALVE SW-15 TRANSFERS CLOSED
SW--VLV-OC---016	2.989E-006	4	NORTH SUPPLY HEADERSW-16 STRAINER ISOLVLV TRANSFERS CLOSE
SW--VLV-OC---021	2.989E-006	4	NORTH SUPPLY HEADERSW-21 STRAINER ISOLVLV TRANSFERS CLOSE
SW--VLV-OC---022	2.989E-006	4	NORTH SUPPLY HEADERBYPASS VALVE SW-22 TRANSFERS CLOSED
SW--VLV-OC---042	2.989E-006	4	SW SOUTH HEADER VALVE SW-42 TRANSFERS CLOSED
SW--VLV-OC---063	2.989E-006	4	NORTH SUPPLY HEADERVALVE SW-63 TRANSFERS CLOSED
SW--VLV-OC---104	2.989E-006	4	SW DISCHARGE VALVE 104 FAILS (OC) SOMETIME DURING THE YR
SW--VLV-OC---111	2.989E-006	4	BLOCK 47 SW HAND VLV TO TDP 2P-29 0-SW-111
SW--VLV-OC---113	2.989E-006	4	BLOCK 34 ALTERNATE SW FEED TO TDP 2P-29
SW--VLV-OC---120	2.989E-006	4	BLOCK 33 SERVICE WATER NORM. FEED PATH TO MDP P38B
SW--VLV-OC---121	2.989E-006	4	BLOCK 27 ALTERNATE SW FEED TO P-38B
SW--VLV-OC---129	2.989E-006	4	BLOCK 25 SERVICE WTNORM. FEED PTH MAN.VLV TO MDP P-38A
SW--VLV-OC---130	2.989E-006	4	BLOCK 26 ALTERNATE SW FEED TO P38A
SW--VLV-OC---140	2.989E-006	4	BLOCK 8 SERVICE WTRMAN. VLV FROM SW SOUTH HEADER
SW--VLV-OC---146	2.989E-006	4	SW DISCHARGE VALVE SW-146 TRANSFERS CLOSED. YEARLY
SW--VLV-OC---221	2.989E-006	4	SW SOUTH HEADER VALVE SW-221 TRANSFERS CLOSED
SW--VLV-OC---224	2.989E-006	4	NORTH SUPPLY HEADERISOL VLV. SW-224 TRANSFERS CLOSED
SW--VLV-OC-1-134	2.989E-006	4	BLOCK 23 SW ALTERNATE FEED TO 1P29
SW--VLV-OC-1-135	2.989E-006	4	BLOCK 7 SERVICE WTRNORM. FEED PTH MAN.VLV TO TDP 1P29
SW--VLV-OC-1-137	2.989E-006	4	BLOCK 28 MAN. VLV FROM SERVICE WATER TO 1P-29 COOLING
SW--VLV-OC-1-139	2.989E-006	4	BLOCK 28 GLOBE VLV ON DISCHARGE SIDE OF 1P-29 COOLING
SW--VLV-OC-2-110	2.989E-006	4	BLOCK 49 GLOBE VLV ON DISCHARGE SIDE OF 2P-29 COOLING
SW--VLV-OC-2-112	2.989E-006	4	BLOCK 45 NORMAL SW FEED TO TDP 2P29
SW--VLV-OC-2-115	2.989E-006	4	BLOCK 49 MAN. VLV FROM SERVICE WATER TO 2P-29 COOLING
SW--VLV-OC1-137B	2.989E-006	4	BLOCK 28 MAN. VLV FROM SERVICE WATER TO 1P-29 COOLING
SW--VLV-OC2-115B	2.989E-006	4	BLOCK 49 MAN. VLV FROM SERVICE WATER TO 2P-29 COOLING
SW--VLV-OC2-2090	2.989E-006	4	BLOCK 49 SERVICE WATER COOLING FOR TDP 2P-29
SW--VLV-OO---010	4.406E-004	3	SW PUMP ISOLATION VALVE SW-10 FAILS OPEN
SW--VLV-OO---011	4.406E-004	3	SW PUMP ISOLATION VALVE SW-11 FAILS OPEN
SW--VLV-OO---012	4.406E-004	3	SW PUMP ISOLATION VALVE SW-12 FAILS OPEN
SW--VLV-OO---013	4.406E-004	3	SW PUMP ISOLATION VALVE SW-13 FAILS OPEN
SW--VLV-OO---014	4.406E-004	3	SW PUMP ISOLATION VALVE SW-14 FAILS OPEN
SW--VLV-OO---015	4.406E-004	3	SW PUMP ISOLATION VALVE SW-15 FAILS OPEN

SW--VLV-RE---104	1.000E-003	3	FAILURE TO RESTORE DISCHARGE VALVE SW-104
SW--VLV-RE---111	1.000E-003	3	BLOCK 47 SW HAND VLV TO TDP 2P-29 0-SW-111
SW--VLV-RE---120	1.000E-003	3	BLOCK 33 SERVICE WATER NORM. FEED PATH TO MDP P38B
SW--VLV-RE---129	1.000E-003	3	BLOCK 25 SERVICE WTNORM. FEED PTH MAN.VLV TO MDP P-38A
SW--VLV-RE---140	1.000E-003	3	BLOCK 8 SERVICE WTRMAN. VLV FROM SW SOUTH HEADER
SW--VLV-RE---146	1.000E-003	3	FAILURE TO RESTORE DISCHARGE VALVE SW-146
SW--VLV-RE---221	1.000E-003	3	SOUTH WEST VALVE GROUP OPERATOR RESTORATION ERROR
SW--VLV-RE---224	1.000E-003	3	NORTH WEST VALVE GROUP OPERATOR RESTORATION ERROR
SW--VLV-RE-1-135	1.000E-003	3	BLOCK 7 SERVICE WTRNORM. FEED PTH MAN.VLV TO TDP 1P29
SW--VLV-RE-1-139	1.000E-003	3	BLOCK 28 GLOBE VALVON DISCHARGE SIDE OF 1P-29 COOLING
SW--VLV-RE-2-110	1.000E-003	3	BLOCK 49 GLOBE VLV ON DISCHARGE SIDE OF 2P-29 COOLING
SW--VLV-RE-2-112	1.000E-003	3	BLOCK 45 NORMAL SW FEED TO TDP 2P29
SW--VLV-RE42-4-9	1.000E-003	3	FAILURE TO RESTORE A VALVE IN THE SE VALVE GROUP
SW--VLV-RE632116	1.000E-003	3	FAILURE TO RESTORE A VALVE IN THE NE VALVE GROUP
SW--VLV-TM---104	1.460E-003	3	SW DISCHARGE VALVE SW-104 IN TEST AND MAINTENANCE
SW--VLV-TM---146	1.460E-003	3	SW DISCHARGE VALVE SW-146 IN TEST AND MAINTENANCE
SW--VLV-TM---221	1.460E-003	3	TEST AND MAINT. ON THE SOUTH WEST VALVE GROUP
SW--VLV-TM---224	1.460E-003	3	TEST AND MAINT. ON THE NORTH EAST VALVE GROUP
SW--VLV-TM42-4-9	1.460E-003	3	SOUTH SUPPLY HEADERVLV GROUP UNAVAIL. TEST AND MAINT
SW--VLV-TM632116	1.460E-003	3	NE VALVE GROUP UNAVAIL DUE TO TEST AND MAINT
SW--YS--PG-02919	1.200E-004	4	STRAINER YS-2919 PLUGS
SW--YS--PG-02920	1.200E-004	4	STRAINER YS-2920 PLUGS
SW--YS--PG-2918A	1.200E-004	4	SW STRAINER 2918A PLUGS
SW--YS--PG-2918B	1.200E-004	4	
SW-1STR-PG1-2998	5.000E-006	4	BLOCK 28 SERVICE WATER COOLING FOR 1P-29
SW-1STR-PG2-2998	5.000E-006	4	BLOCK 49 SERVICE WATER COOLING FOR 2P-29
SW-1VLV-OC---111	1.245E-007	4	BLOCK 47 SW HAND VLV TO TDP 2P-29 0-SW-111
SW-1VLV-OC---140	1.245E-007	4	BLOCK 8 SERVICE WTRMAN. VLV FROM SW SOUTH HEADER
SW-1VLV-OC-1-135	1.245E-007	4	BLOCK 7 SERVICE WTRNORM. FEED PTH MAN.VLV TO TDP 1P29
SW-1VLV-OC-1-137	1.245E-007	4	BLOCK 28 MAN. VLV FROM SERVICE WATER TO 1P-29 COOLING
SW-1VLV-OC-1-139	1.245E-007	4	BLOCK 28 GLOBE VLV ON DISCHARGE SIDE OF 1P-29 COOLING
SW-1VLV-OC-2-110	1.245E-007	4	BLOCK 49 GLOBE VLV ON DISCHARGE SIDE OF 2P-29 COOLING
SW-1VLV-OC-2-112	1.245E-007	4	BLOCK 45 NORMAL SW FEED TO TDP 2P29
SW-1VLV-OC-2-115	1.245E-007	4	BLOCK 49 MAN. VLV FROM SERVICE WATER TO 2P-29 COOLING
SW-1VLV-OC1-137B	1.245E-007	4	BLOCK 28 MAN. VLV FROM SERVICE WATER TO 1P-29 COOLING
SW-1VLV-OC1-2090	1.245E-007	4	BLOCK 28 SERVICE WATER COOLING TO TDP 1P29
SW-1VLV-OC2-115B	1.245E-007	4	BLOCK 49 MAN. VLV FROM SERVICE WATER TO 2P-29 COOLING

SW-1VLV-OC2-2090	1.245E-007	4	BLOCK 49 SERVICE WATER COOLING FOR TDP 2P-29
SWI-PIP-RP-N-S-W	2.740E-008	3	ISOLATABE SW HEADER RUPTURE
SWI-PIP-RP-NONIS	2.740E-009	3	NON-ISOLATABLE SW RUPTURE
SWI-PIP-RP-SEC-A	1.350E-007	3	P-32A - B - C HEADER RUPTURE
SWI-PIP-RP-SEC-B	1.350E-007	3	P-32D - E - F HEADER RUPTURE
SWI-STR-CM-PG-BS	1.300E-005	3	BS-2911 AND BS-2912COMMON CAUSE PLUG
TSB-TFB-A	5.000E-001	3	FRACTION OF STM/FW LINE BREAKS INSIDE CTMT IN TRAIN "A"
TSB-TFB-B	5.000E-001	3	FRACTION OF STM/FW LINE BREAKS INSIDE CTMT IN TRAIN "B"
VCC-AOV-CO-03212	3.862E-005	4	VCC-3212 FAILS OPENCI PEN. V1
VCC-AOV-CO-03213	3.862E-005	4	VCC-3213 FAILS OPENCI PEN. V1
VCC-AOV-CO-03244	3.862E-005	4	VCC-3244 FAILS OPENCI PEN. V2
VCC-AOV-CO-03245	3.862E-005	4	VCC-3245 FAILS OPENCI PEN. V2
VDG-W---CM----12	5.300E-005	3	DG G-03/04 ROOM FANS W-183B AND W-183C
VDG-W---CM----13	5.300E-005	3	DG G-03/04 ROOM FANS W-183B AND W-184B
VDG-W---CM----14	5.300E-005	3	DG G-03/04 ROOM FANS W-183B AND W-184C
VDG-W---CM----23	5.300E-005	3	DG G-03/04 ROOM FANS W-183C AND W-184B
VDG-W---CM----24	5.300E-005	3	DG G-03/04 ROOM FANS W-183C AND W-184C
VDG-W---CM----34	5.300E-005	3	DG G-03/04 ROOM FANS W-184B AND W-184C
VDG-W---CM---123	3.770E-005	3	DG G-03/04 ROOM FANS W-183B/W-183C/W184B
VDG-W---CM---124	3.770E-005	3	DG G-03/04 ROOM FANS W-183B/W-183C/W184C
VDG-W---CM---134	3.770E-005	3	DG G-03/04 ROOM FANS W-183B/W-184B/W184C
VDG-W---CM---234	3.770E-005	3	DG G-03/04 ROOM FANS W-183C/W-184B/W184C
VDG-W---CM--12AB	5.300E-005	3	DG G-01/02 ROOM FANS W-12A AND W-12B
VDG-W---CM--12AC	5.300E-005	3	DG G-01/02 ROOM FANS W-12A AND W-12C
VDG-W---CM--12AD	5.300E-005	3	DG G-01/02 ROOM FANS W-12A AND W-12D
VDG-W---CM--12BC	5.300E-005	3	DG G-01/02 ROOM FANS W-12B AND W-12C
VDG-W---CM--12BD	5.300E-005	3	DG G-01/02 ROOM FANS W-12B AND W-12D
VDG-W---CM--12CD	5.300E-005	3	DG G-01/02 ROOM FANS W-12C AND W-12D
VDG-W---CM--ALL4	2.780E-004	3	DG G-03/04 ROOM FANS W183B W183C W184B W184C
VDG-W---CM-12ABC	3.770E-005	3	DG G-01/02 ROOM FANS W-12A W-12B W-12C
VDG-W---CM-12ABD	3.770E-005	3	DG G-01/02 ROOM FANS W-12A W-12B W-12D
VDG-W---CM-12ACD	3.770E-005	3	DG G-01/02 ROOM FANS W-12A W-12C W-12D
VDG-W---CM-12BCD	3.770E-005	3	DG G-01/02 ROOM FANS W-12B W-12C W-12D
VDG-W---CM-AB123	2.760E-004	3	CM FAILURE OF FOUR OR MORE FANS FOR DG-03 AND DG-04
VDG-W---CM-CCA12	9.210E-005	3	DG-03 RADIATOR FANSW181A1 AND W181A2
VDG-W---CM-CCA13	9.210E-005	3	DG-03 RADIATOR FANSW181A1 AND W181A3
VDG-W---CM-CCA23	9.210E-005	3	DG-03 RADIATOR FANSW181A2 AND W181A3

VDG-W---CM-CCB12	9.210E-005	3	DG-03 RADIATOR FANSW181B1 AND W181B2
VDG-W---CM-CCB13	9.210E-005	3	DG-03 RADIATOR FANSW181B1 AND W181B3
VDG-W---CM-CCB23	9.210E-005	3	DG-03 RADIATOR FANSW181B2 AND W181B3
VDG-W---CM12ABCD	2.780E-004	3	DG G-01/02 ROOM FANS W-12A W-12B W-12C W-12D
VDG-W---FR---12A	2.538E-004	4	DG-01 ROOM FAN W-12A
VDG-W---FR---12B	2.538E-004	4	DG-01 ROOM FAN W-12B
VDG-W---FR---12C	2.538E-004	4	DG-02 ROOM FAN W-12C
VDG-W---FR---12D	2.538E-004	4	DG-02 ROOM FAN W-12D
VDG-W---FR--183B	2.538E-004	4	DG-02 ROOM FAN W-183B
VDG-W---FR--183C	2.538E-004	4	DG-02 ROOM FAN W-183C
VDG-W---FR--184B	2.538E-004	4	DG-02 ROOM FAN W-184B
VDG-W---FR--184C	2.538E-004	4	DG-02 ROOM FAN W-183B
VDG-W---FR-181A1	2.538E-004	4	DIESEL GENERATOR RADIATOR FAN W181A1FAILS TO RUN
VDG-W---FR-181A2	2.538E-004	4	DIESEL GENERATOR RADIATOR FAN W181A2FAILS TO RUN
VDG-W---FR-181A3	2.538E-004	4	DIESEL GENERATOR RADIATOR FAN W181A3FAILS TO RUN
VDG-W---FR-181B1	2.538E-004	4	DIESEL GENERATOR RADIATOR FAN W181B1FAILS TO RUN
VDG-W---FR-181B2	2.538E-004	4	DIESEL GENERATOR RADIATOR FAN W181B2FAILS TO RUN
VDG-W---FR-181B3	2.538E-004	4	DIESEL GENERATOR RADIATOR FAN W181B3FAILS TO RUN
VDG-W---FS---12A	7.367E-003	3	DG-01 ROOM FAN W-12A
VDG-W---FS---12B	7.367E-003	3	DG-01 ROOM FAN W-12B
VDG-W---FS---12C	7.367E-003	3	DG-02 ROOM FAN W-12C
VDG-W---FS---12D	7.367E-003	3	DG-02 ROOM FAN W-12D
VDG-W---FS--183B	7.367E-003	3	DG-02 ROOM FAN W-183B
VDG-W---FS--183C	7.367E-003	3	DG-02 ROOM FAN W-183C
VDG-W---FS--184B	7.367E-003	3	DG-02 ROOM FAN W-184B
VDG-W---FS--184C	7.367E-003	3	DG-02 ROOM FAN W-184C
VDG-W---FS-181A1	7.367E-003	3	DIESEL GENERATOR RADIATOR FAN W181A1FAILS TO START
VDG-W---FS-181A2	7.367E-003	3	DIESEL GENERATOR RADIATOR FAN W181A2FAILS TO START
VDG-W---FS-181A3	7.367E-003	3	DIESEL GENERATOR RADIATOR FAN W181A2FAILS TO START
VDG-W---FS-181B1	7.367E-003	3	DIESEL GENERATOR RADIATOR FAN W181B1FAILS TO START
VDG-W---FS-181B2	7.367E-003	3	DIESEL GENERATOR RADIATOR FAN W181B2FAILS TO START
VDG-W---FS-181B3	7.367E-003	3	DIESEL GENERATOR RADIATOR FAN W181B2FAILS TO START
WG--HX--IL-0048A	2.400E-005	4	WASTE GAS HX-48A TUBE LEAKAGE TO CCW
WL--AOV-CM--1003	1.260E-004	3	COMMON MODE FAILUREOF WL-1003A - B C I PEN. 9
WL--AOV-CM-17238	8.230E-005	3	CM FAILURE WL-1723 - 1728 CI PEN. 71
WL--AOV-CO-01698	3.862E-005	4	AOV-1698 FAILS OPENCI PEN. 9
WL--AOV-CO-01723	3.862E-005	4	WL-1723 FAILS OPEN CI PEN. 71

WL--AOV-CO-01728	3.862E-005	4	WL-1728 FAILS OPEN CI PEN. 71
WL--AOV-CO-1003A	3.862E-005	4	WL-1003A FAILS OPENCI PEN. 9
WL--AOV-CO-1003B	3.862E-005	4	WL-1003B FAILS OPENCI PEN. 9
WL--AOV-OO-01721	1.732E-003	3	AOV-1721 FAILS TO CLOSE ISOLATE PEN. 9
XHOS-0D49-0D51	0.000E+000	6	DC PANEL 0D-49 SUPPLYING 0D-51
XHOS-0D49-0D52	1.000E+000	6	DC PANEL 0D-49 SUPPLYING 0D-52
XHOS-0D49-0D53	1.000E+000	6	DC PANEL 0D-49 SUPPLYING 0D-53
XHOS-0D50-0D51	1.000E+000	6	DC PANEL 0D-50 SUPPLYING 0D-51
XHOS-0D50-0D52	0.000E+000	6	DC PANEL 0D-50 SUPPLYING 0D-52
XHOS-0D50-0D53	0.000E+000	6	DC PANEL 0D-50 SUPPLYING 0D-53
XHOS-1A03-1A01	0.000E+000	6	1A-01 POWER SOURCE FROM 1A-03 1 = TRUE 0 = FALSE
XHOS-1A03-2A03	0.000E+000	6	BUS 1A-03 SUPPLYING 2A-03
XHOS-1A04-1A02	0.000E+000	6	1A-02 POWER SOURCE FROM 1A-04 1 = TRUE 0 = FALSE
XHOS-1A04-2A04	0.000E+000	6	BUS 1A-04 SUPPLYING 2A-04
XHOS-1A05-1B03	1.000E+000	6	BUS 1A-05 SUPPLIES BUS 1B-03
XHOS-1A06-1B04	1.000E+000	6	BUS 1A-06 SUPPLIES BUS 1B-04
XHOS-1B03-1B04	0.000E+000	6	BUS 1B-03 SUPPLIES BUS 1B-04
XHOS-1B04-1B03	0.000E+000	6	BUS 1B-04 SUPPLIES BUS 1B-03
XHOS-1B32-D302	1.000E+000	6	BUS 1B-32 SUPPLIES BUS D-302
XHOS-1B39-D01	1.000E+000	6	BUS 1B-39 SUPPLYING D-01
XHOS-1B49-D04	1.000E+000	6	BUS 1B-49 SUPPLYING D-04
XHOS-1B49-D301	0.000E+000	6	BUS 1B49 SUPPLYING BUS-D301
XHOS-1DY01-1Y01	1.000E+000	6	INVERTER 1DY-01 SUPPLYING 1Y-01
XHOS-1DY02-1Y02	1.000E+000	6	INVERTER 1DY-02 SUPPLYING 1Y-02
XHOS-1DY03-1Y03	1.000E+000	6	INVERTER 1DY-03 SUPPLYING 1Y-03
XHOS-1P29-ALT	0.000E+000	6	SERVICE WATER ALT. ALIGNMENT FOR TDP 1P29
XHOS-1P29-NORMAL	1.000E+000	6	SERVICE WATER NORM.ALIGNMENT FOR TDP 1P29
XHOS-1X01-1X02	0.000E+000	6	MAIN STEP UP TRANSFORMER 1X-01 BACKFED TO 1X-02
XHOS-1X02-1A01	1.000E+000	6	1A-01 POWER SOURCE FROM 1X-02 1 = TRUE 0 = FALS
XHOS-1X02-1A02	1.000E+000	6	1A-02 POWER SOURCE FROM 1X-02 1 = TRUE 0 = FALSE
XHOS-1X04-1A03	1.000E+000	6	TRANSFORMER 1X-04 SUPPLYING 1A-03
XHOS-1X04-1A04	1.000E+000	6	TRANSFORMER 1X-04 SUPPLYING 1A-04
XHOS-2A01-2B01	1.000E+000	6	BUS2A-01 SUPPLIES BUS 2B-01
XHOS-2A02-2B02	1.000E+000	6	BUS 2A-02 SUPPLIES BUS 2B-02
XHOS-2A03-1A03	0.000E+000	6	BUS 2A-03 SUPPLYING 1A-03
XHOS-2A03-2A01	0.000E+000	6	2A-01 POWER SOURCE FROM 2A-03 1 = TRUE 0 = FALSE
XHOS-2A04-1A04	0.000E+000	6	BUS 2A-04 SUPPLYING 1A-04

XHOS-2A04-2A02	0.000E+000	6	2A-02 POWER SOURCE FROM 2A-04 1 = TRUE 0 = FALSE
XHOS-2A05-2B03	1.000E+000	6	BUS 2A-05 SUPPLIES BUS 2B-03
XHOS-2A06-2B04	1.000E+000	6	BUS 2A-06 SUPPLIES BUS 2B-04
XHOS-2B01-2B43	1.000E+000	6	BUS 2B-01 SUPPLYING BUS 2B-43
XHOS-2B02-2B43	0.000E+000	6	BUS 2B-02 SUPPLYING BUS 2B-43
XHOS-2B03-2B01	0.000E+000	6	BUS 2B-03 SUPPLYING2B-01
XHOS-2B03-2B04	0.000E+000	6	BUS 2B-03 SUPPLIES BUS 2B-04
XHOS-2B04-2B02	0.000E+000	6	BUS 2B-04 SUPPLYING2B-02
XHOS-2B04-2B03	0.000E+000	6	BUS 2B-04 SUPPLIES BUS 2B-03
XHOS-2B39-D03	1.000E+000	6	BUS 2B-39 SUPPLYING D-03
XHOS-2B39-D301	1.000E+000	6	BUS 2B39 SUPPLYING BUS D301
XHOS-2B42-D302	0.000E+000	6	BUS 2B42 SUPPLIES BUS D-302
XHOS-2B49-D02	1.000E+000	6	BUS 2B-49 SUPPLYING D-02
XHOS-2DY01-2Y01	1.000E+000	6	INVERTER 2DY-01 SUPPLYING 2Y-01
XHOS-2DY02-2Y02	1.000E+000	6	INVERTER 2DY-02 SUPPLYING 2Y-02
XHOS-2P29-ALT	0.000E+000	6	SERVICE WATER ALT. ALIGNMENT FOR TDP 2P-29
XHOS-2P29-NORMAL	1.000E+000	6	SERVICE WATER NORM.ALIGNMENT FOR TDP 2P-29
XHOS-2X01-2X02	0.000E+000	6	MAIN STEP UP TRANSFORMER 2X-01 BACKFED TO 2X-02
XHOS-2X02-2A01	1.000E+000	6	2A-01 POWER SOURCE FROM 2X-02 1 = TRUE 0 = FALSE
XHOS-2X02-2A02	1.000E+000	6	2A-02 POWER SOURCE FROM 2X-02 1 = TRUE 0 = FALSE
XHOS-2X04-2A03	1.000E+000	6	TRANSFORMER 2X-04 SUPPLYING 2A-03
XHOS-2X04-2A04	1.000E+000	6	TRANSFORMER 2X-04 SUPPLYING 2A-04
XHOS-ADV-AIR	1.000E+000	3	REMOVES AIR TO ADV =1.0 AIR REQUIRED =0.0 NO AIR NEEDED
XHOS-AFWAIR	1.000E+000	6	CASE 22 AFWAIR =1.0 NORMAL =0.0 AFWAIR
XHOS-AFWDC	1.000E+000	6	CASE 25 AFWDC =1.0 NORMAL =0.0 AFWDC
XHOS-B03-P32B--N	1.000E+000	6	DUMMY EVENT TO MAP SAFETY MONITOR LOSSOF NORMAL POWER
XHOS-B03-P32F--N	1.000E+000	6	DUMMY EVENT TO MAP SAFETY MONITOR LOSSOF NORMAL POWER
XHOS-B04-32E--N	1.000E+000	6	DUMMY EVENT TO MAP SAFETY MONITOR LOSSOF NORMAL POWER
XHOS-B04-P32C--N	1.000E+000	6	DUMMY EVENT TO MAP SAFETY MONITOR LOSSOF NORMAL POWER
XHOS-B08-P32B--A	0.000E+000	6	DUMMY EVENT TO MAP SAFETY MONITOR LOSSOF ALTERNATE POWER
XHOS-B08-P32F--A	0.000E+000	6	DUMMY EVENT TO MAP SAFETY MONITOR LOSSOF ALTERNATE POWER
XHOS-B09-32E--A	0.000E+000	6	DUMMY EVENT TO MAP SAFETY MONITOR LOSSOF ALTERNATE POWER
XHOS-B09-P32C--A	0.000E+000	6	DUMMYU EVENT TO MAPSAFETY MONITOR LOSSOF ALTERNATE POWER
XHOS-B81-D302	0.000E+000	6	BUS B-81 SUPPLIES BUS D-302
XHOS-BKR-21-OPEN	0.000E+000	6	BREAKER H52-21 OPEN 1= OPEN 0 = CLOSED
XHOS-BKR-31-OPEN	1.000E+000	6	BREAKER H52-31 OPEN 1= OPEN 0 = CLOSED
XHOS-BKR11B-1B32	1.000E+000	6	BREAKER 1B52-11B SUPPLYING BUS 1B32

XHOS-BKR14B-1B32	0.000E+000	6	BREAKER 1B52-14B SUPPLYING BUS 1B32
XHOS-BKR23A-1B42	1.000E+000	6	BREAKER 1B52-23A SUPPLYING BUS 1B-42
XHOS-BKR23C-1B42	0.000E+000	6	BREAKER 1B52-23C SUPPLYING BUS 1B-42
XHOS-BKR31B-2B42	1.000E+000	6	BREAKER 2B52-31B SUPPLYING BUS 2B-42
XHOS-BKR32C-2B42	0.000E+000	6	BREAKER 2B52-32C SUPPLYING BUS 2B-42
XHOS-BKR35C-2B32	1.000E+000	6	BREAKER 2B52-35C SUPPLYING BUS 2B32
XHOS-BKR38B-2B32	0.000E+000	6	BREAKER 2B52-38B SUPPLYING BUS 2B-32
XHOS-CCHXA-STBY	0.000E+000	6	EVENT USED TO SET CCW HX-A LOGIC TO STANDBY MODE
XHOS-CCHXB-STBY	1.000E+000	6	EVENT USED TO SET CCW HX-B LOGIC TO STANDBY MODE
XHOS-CCW2A-STBY	0.000E+000	6	EVENT USED TO SET U2 CCW PMP A LOGIC TO STANDBY MODE
XHOS-CCW2B-STBY	1.000E+000	6	EVENT USED TO SET U2 CCW PMP 2B LOGICTO STANDBY MODE
XHOS-CCWA-STBY	0.000E+000	6	EVENT USED TO SET U1 CCW PMP A LOGIC TO STANDBY MODE
XHOS-CCWB-STBY	1.000E+000	6	EVENT USED TO SET U1 CCW PMP B LOGIC TO STANDBY MODE
XHOS-CCWECCS	1.000E+000	6	CASE 6 CCWECCS =1.0 NORMAL =0.0 CCWECCS
XHOS-D04-D28	1.000E+000	6	DC PANEL D-04 SUPPLYING D-28
XHOS-D05-D01	1.000E+000	6	BATTERY D05 SUPPLIES BUS D-01
XHOS-D06-D02	1.000E+000	6	BATTERY D06 SUPPLIES BUS D-02
XHOS-D105-D03	0.000E+000	6	BATTERY D-105 SUPPLIES BUS D-03
XHOS-D106-D04	0.000E+000	6	BATTERY D-106 SUPPLIES BUS D-04
XHOS-D11-1A01	1.000E+000	6	NORMAL CONTROL POWER TO 1A-01 FROMDC DIST PANEL D-11
XHOS-D11-1A02	0.000E+000	6	ALTERNATE CONTROL POWER TO 1A-02 FROMDC DIST PANEL D-11
XHOS-D11-1A03	1.000E+000	6	NORMAL CONTROL POWER TO 1A-03 FROMDC DIST PANEL D-11
XHOS-D11-1A04	0.000E+000	6	ALTERNATE CONTROL POWER TO 1A-04 FROMDC DIST PANEL D-11
XHOS-D11-1A05	1.000E+000	6	NORMAL CONTROL POWER TO 1A-05 FROMDC DIST PANEL D-11
XHOS-D11-1B01	1.000E+000	6	NORMAL CONTROL POWER TO 1B-01 FROMDC DIST PANEL D-11
XHOS-D11-1B02	0.000E+000	6	ALTERNATE CONTROL POWER TO 1B-02 FROMDC DIST PANEL D-11
XHOS-D11-1B03	1.000E+000	6	NORMAL CONTROL POWER TO 1B-03 FROMDC DIST PANEL D-11
XHOS-D12-2A01	1.000E+000	6	NORMAL CONTROL POWER TO 2A-01 FROMDC DIST PANEL D-12
XHOS-D12-2A02	0.000E+000	6	NORMAL CONTROL POWER TO 2A-02 FROMDC DIST PANEL D-12
XHOS-D12-2A03	1.000E+000	6	NORMAL CONTROL POWER TO 2A-03 FROMDC DIST PANEL D-12
XHOS-D12-2A04	0.000E+000	6	NORMAL CONTROL POWER TO 2A-04 FROMDC DIST PANEL D-12
XHOS-D12-2A05	0.000E+000	6	ALTERNATE CONTROL POWER TO 2A-05 FROMDC DIST PANEL D-12
XHOS-D12-2B01	1.000E+000	6	NORMAL CONTROL POWER TO 2B-01 FROMDC DIST PANEL D-12
XHOS-D12-2B02	0.000E+000	6	ALTERNATE CONTROL POWER TO 2B-02 FROMDC DIST PANEL D-12
XHOS-D12-2B03	0.000E+000	6	ALTERNATE CONTROL POWER TO 2B-03 FROMDC DIST PANEL D-12
XHOS-D12-2B04	0.000E+000	6	ALTERNATE CONTROL POWER TO 2B-04 FROMDC DIST PANEL D-12
XHOS-D13-2A01	0.000E+000	6	ALTERNATE CONTROL POWER TO 2A-01 FROMDC DIST PANEL D-13

XHOS-D13-2A02	1.000E+000	6	NORMAL CONTROL POWER TO 2A-02 FROMDC DIST PANEL D-13
XHOS-D13-2A03	0.000E+000	6	ALTERNATE CONTROL POWER TO 2A-03 FROMDC DIST PANEL D-13
XHOS-D13-2A04	1.000E+000	6	NORMAL CONTROL POWER TO 2A-04 FROMDC DIST PANEL D-13
XHOS-D13-2B01	0.000E+000	6	ALTERNATE CONTROL POWER TO 2B-01 FROMDC DIST PANEL D-13
XHOS-D13-2B02	1.000E+000	6	NORMAL CONTROL POWER TO 2B-02 FROMDC DIST PANEL D-13
XHOS-D13-2B04	1.000E+000	6	NORMAL CONTROL POWER TO 2B-04 FROMDC DIST PANEL D-13
XHOS-D14-D40	1.000E+000	6	DC PANEL D-14 SUPPLYING D-40
XHOS-D27-1A01	0.000E+000	6	ALTERNATE CONTROL POWER TO 1A-01 FROMDC DIST PANEL D-27
XHOS-D27-1A02	1.000E+000	6	NORMAL CONTROL POWER TO 1A-02 FROMDC DIST PANEL D-27
XHOS-D27-1A03	0.000E+000	6	ALTERNATE CONTROL POWER TO 1A-03 FROMDC DIST PANEL D-27
XHOS-D27-1A04	1.000E+000	6	NORMAL CONTROL POWER TO 1A-04 FROMDC DIST PANEL D-27
XHOS-D27-1A05	0.000E+000	6	ALTERNATE CONTROL POWER TO 1A-05 FROMDC DIST PANEL D-27
XHOS-D27-1B01	0.000E+000	6	ALTERNATE CONTROL POWER TO 1B-01 FROMDC DIST PANEL D-27
XHOS-D27-1B02	1.000E+000	6	NORMAL CONTROL POWER TO 1B-02 FROMDC DIST PANEL D-27
XHOS-D27-1B03	0.000E+000	6	ALTERNATE CONTROL POWER TO 1B-03 FROMDC DIST PANEL D-27
XHOS-D27-1B04	0.000E+000	6	ALTERNATE CONTROL POWER TO 1B-04 FROMDC DIST PANEL D-27
XHOS-D28-D40	0.000E+000	6	DC PANEL D-28 SUPPLYING D-40
XHOS-D301-D01	0.000E+000	6	BUS D-301 SUPPLYING D-01
XHOS-D301-D02	0.000E+000	6	BUS D301 SUPPLYING D02
XHOS-D302-D03	0.000E+000	6	BUS D-302 SUPPLYING D-03
XHOS-D302-D04	0.000E+000	6	BUS D302 SUPPLYING D04
XHOS-D305-D301	1.000E+000	6	BATTERY D305 SUPPLYING BUS D301
XHOS-D305-D302	0.000E+000	6	BATTERY D-305 SUPPLIES BUS D-302
XHOS-D31-0B08	1.000E+000	6	NORMAL CONTROL POWER TO 0B-08 FROMDC DIST PANEL D-31
XHOS-D31-0B09	0.000E+000	6	ALTERNATE CONTROL POWER TO 0B-09 FROMDC DIST PANEL D-31
XHOS-D31-2A05	1.000E+000	6	NORMAL CONTROL POWER TO 2A-05 FROMDC DIST PANEL D-31
XHOS-D31-2B03	1.000E+000	6	NORMAL CONTROL POWER TO 2B-03 FROMDC DIST PANEL D-31
XHOS-D40-D28	0.000E+000	6	DC PANEL D-40 SUPPLYING D-28
XHOS-D41-0B08	0.000E+000	6	ALTERNATE CONTROL POWER TO 0B-08 FROMDC DIST PANEL D-41
XHOS-D41-0B09	1.000E+000	6	NORMAL CONTROL POWER TO 0B-09 FROMDC DIST PANEL D-41
XHOS-D41-1B04	1.000E+000	6	NORMAL CONTROL POWER TO 1B-04 FROMDC DIST PANEL D-41
XHOS-DG	0.000E+000	2	
XHOS-DGCOOL	1.000E+000	6	CASE 3 DGCOOL =1.0 NORMAL =0.0 CASE 3
XHOS-DY0A-1Y01	0.000E+000	6	INVERTER 0DY-0A SUPPLYING 1Y-01
XHOS-DY0A-2Y01	0.000E+000	6	INVERTER 0DY-0A SUPPLYING 2Y-01
XHOS-DY0B-1Y02	0.000E+000	6	INVERTER 0DY-0B SUPPLYING 1Y-02
XHOS-DY0B-2Y02	0.000E+000	6	INVERTER 0DY-0B SUPPLYING 2Y-02

XHOS-DY0C-1Y03	0.000E+000	6	INVERTER 0DY-0C SUPPLYING 1Y-03
XHOS-G01-1A05	1.000E+000	6	EDG G-01 ALIGNED TO1A-05
XHOS-G01-2A05	0.000E+000	6	EDG G-01 ALIGNED TO2A-05
XHOS-G01-N1A5	0.000E+000	6	G01 NOT ALIGNED TO 1A-05
XHOS-G01-N2A5	1.000E+000	6	G01 NOT ALIGNED TO 2A-05
XHOS-G02-1A05	0.000E+000	6	EDG G-02 ALIGNED TO1A-05
XHOS-G02-2A05	1.000E+000	6	EDG G-02 ALIGNED TO2A-05
XHOS-G02-N1A5	1.000E+000	6	G02 NOT ALIGNED TO 1A-05
XHOS-G02-N2A5	0.000E+000	6	G02 NOT ALIGNED TO 2A05
XHOS-G03-1A06	1.000E+000	6	EDG G-03 ALIGNED TO1A-06
XHOS-G03-2A06	0.000E+000	6	EDG G-03 ALIGNED TO2A-06
XHOS-G03-N1A6	0.000E+000	6	G03 NOT ALIGNED TO 1A-06
XHOS-G03-N2A6	1.000E+000	6	G03 NOT ALIGNED TO 2A-06
XHOS-G04-1A06	0.000E+000	6	EDG G-04 ALIGNED TO1A-06
XHOS-G04-2A06	1.000E+000	6	EDG G-04 ALIGNED TO2A-06
XHOS-G04-N1A6	1.000E+000	6	G04 NOT ALIGNED TO 1A-06
XHOS-G04-N2A6	0.000E+000	6	G05 NOT ALIGNED TO 2A-06
XHOS-G05-RUN	0.000E+000	6	HOUSE EVENT TO SET G-05 IN RUNNING MODE
XHOS-G05-STBY	1.000E+000	6	HOUSE EVENT TO SET G-05 IN STANDBY MODE
XHOS-GT80F	0.000E+000	6	AMBIENT AIR TEMP IS GREATER THAN 80 DEG F
XHOS-IAPOORV	1.000E+000	6	CASE 20 IAPORV =1.0 NORMAL =0.0 IAPORT
XHOS-K-2A--STDBY	0.000E+000	6	EVENT SET TO 1.0 WHEN IAC K-2A IS INSTANDBY ELSE 0.0
XHOS-K-2B--STDBY	1.000E+000	6	EVENT SET TO 1.0 WHEN K-2B IS IN STANDBY ELSE 0.0
XHOS-K-3A--STDBY	0.000E+000	6	EVENT SET TO 1.0 WHEN SAC K3A IS IN STANDBY ELSE 0.0
XHOS-K-3B--STDBY	1.000E+000	6	EVENT SET TO 1.0 WHEN SAC K-3B IS INSTANDBY ELSE 0.0
XHOS-K2A-RUNNING	1.000E+000	6	EVENT SET TO 1.0 WHEN K-2A IS RUNNING ELSE 0.0
XHOS-K2B-RUNNING	0.000E+000	6	EVENT SET TO 1.0 WHEN K2B IS RUNNINGELSE 0.0
XHOS-K3A-RUNNING	1.000E+000	6	EVENT USED TO SET THE 3A SAC LOGIC TORUNNING MODE
XHOS-K3B-RUNNING	0.000E+000	6	EVENT USED TO SET THE 3B SAC LOGIC TORUNNING MODE
XHOS-LT60F	1.000E+000	6	AMBIENT AIR TEMP IS LESS THAN 60 DEG F
XHOS-MODE5-CSD	0.000E+000	6	MODE 5 (COLD SHDN) 1=MODE 5 0=OTHER MODE
XHOS-MODE6-CSD	0.000E+000	6	MODE 6 (REFUELING) 1=MODE 6 0=OTHER MODE
XHOS-P2A-RUNNING	1.000E+000	6	EVENT USED TO SET CHG PUMP 2A LOGIC TO RUNNING MODE
XHOS-P2A-STDBY	0.000E+000	6	EVENT USED TO SET CHG PUMP 2A LOGIC TO STANDBY MODE
XHOS-P2B-RUNNING	0.000E+000	6	EVENT USED TO SET CHG PUMP 2B LOGIC TO RUNNING MODE
XHOS-P2B-STDBY	1.000E+000	6	EVENT USED TO SET CHG PUMP 2B LOGIC TO STANDBY MODE
XHOS-P2C-RUNNING	0.000E+000	6	EVENT USED TO SET CHG PUMP 2C LOGIC TO RUNNING MODE

XHOS-P2C-STDBY	1.000E+000	6	EVENT USED TO SET CHG PUMP P2C LOGIC TO STANDBY MODE
XHOS-P38A-ALT	0.000E+000	6	SERVICE WATER ALT. ALIGNMENT FOR MDP P-38A
XHOS-P38A-NORMAL	1.000E+000	6	SERVICE WATER NORM.ALIGNMENT FOR MDP P-38A
XHOS-P38B-ALT	0.000E+000	6	SERVICE WATER ALT. ALIGNMENT FOR MDP P-38B
XHOS-P38B-NORMAL	1.000E+000	6	SERVICE WATER NORM.ALIGNMENT FOR MDP P-38B
XHOS-RC-515-OPEN	1.000E+000	6	SET TO 1.0 WHEN RC-515 IS OPEN ELSE SET TO 0.0
XHOS-RC-515-SHUT	0.000E+000	6	SET TO 1.0 WHEN RC-515 POSITIONED SHUT ELSE 0.0
XHOS-RC-516-OPEN	1.000E+000	6	SET TO 1.0 WHEN RC-515 IS OPEN ELSE SET TO 0.0
XHOS-RC-516-SHUT	0.000E+000	6	SET TO 1.0 WHEN RC-516 POSITIONED SHUT ELSE 0.0
XHOS-SW-NSTRN-ON	1.000E+000	6	EVENT USED TO SET SW N STRAINER LOGICTO ON
XHOS-SW-NSTRNOFF	0.000E+000	6	EVENT USED TO SET SW N STRAINER LOGICTO OFF
XHOS-SW-NW-FIRST	1.000E+000	6	SERVICE WATER NORTHWEST VALVES FAIL FIRST
XHOS-SW-SSTRN-ON	1.000E+000	6	EVENT USED TO SET SW S STRAINER LOGICTO ON
XHOS-SW-SSTRNOFF	0.000E+000	6	EVENT USED TO SET SW S STRAINER LOGICTO OFF
XHOS-SW-SW-FIRST	0.000E+000	6	SERVICE WATER SOUTHWEST VALVES FAIL FIRST
XHOS-SWPA-RUN	1.000E+000	6	EVENT USED TO SET SW PUMP P-32A LOGIC TO RUN MODE
XHOS-SWPA-STBY	0.000E+000	6	EVENT USED TO SET SW P-32A LOGIC TO STANDBY MODE
XHOS-SWPB-RUN	0.000E+000	6	EVENT USED TO SET SW PUMP P-32B LOGIC TO RUN MODE
XHOS-SWPB-STBY	1.000E+000	6	EVENT USED TO SET SW P-32B LOGIC TO STANDBY MODE
XHOS-SWPC-RUN	1.000E+000	6	EVENT USED TO SET SW PUMP P-32C LOGIC TO RUN MODE
XHOS-SWPC-STBY	0.000E+000	6	EVENT USED TO SET SW P-32C LOGIC TO STANDBY MODE
XHOS-SWPD-RUN	0.000E+000	6	EVENT USED TO SET SW PUMP P-32D LOGIC TO RUN MODE
XHOS-SWPD-STBY	1.000E+000	6	EVENT USED TO SET SW P-32D LOGIC TO STANDBY MODE
XHOS-SWPE-RUN	0.000E+000	6	EVENT USED TO SET SW PUMP P-32E LOGIC TO RUN MODE
XHOS-SWPE-STBY	1.000E+000	6	EVENT USED TO SET SW P-32E LOGIC TO STANDBY MODE
XHOS-SWPF-RUN	1.000E+000	6	EVENT USED TO SET SW PUMP P-32F LOGIC TO RUN MODE
XHOS-SWPF-STBY	0.000E+000	6	EVENT USED TO SET SW P-32F LOGIC TO STANDBY MODE
XHOS-TG01-1X02	1.000E+000	6	TURBINE GENERATOR 1TG-01 SUPPLYING 1X-02
XHOS-TG01-2X02	1.000E+000	6	TURBINE GENERATOR 2TG-01 SUPPLYING 2X-02
XHOS-TM-ALT--10A	1.000E+000	6	ALTERNATE POWER SUPPLY FOR P10A UNAVAILABLE
XHOS-TM-ALT--10B	1.000E+000	6	ALTERNATE POWER SUPPLY FOR P10B UNAVAILABLE
XHOS-TM-HX-0114A	0.000E+000	6	P10A COOLING HX UNAVAILABLE
XHOS-TM-HX-0114B	0.000E+000	6	P10B COOLING HX UNAVAILABLE
XHOS-TM-HX-0176A	0.000E+000	6	SI PUMP P15A COOLING HX UNAVAILABLE
XHOS-TM-HX-0176B	0.000E+000	6	SI PUMP P15B COOLING HX UNAVAILABLE
XHOS-TM-NORM-10A	0.000E+000	6	NORMAL POWER SUPPLY FOR P10A UNAVAILABLE
XHOS-TM-NORM-10B	0.000E+000	6	NORMAL POWER SUPPLY FOR P10B UNAVAILABLE

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XHOS-VLV104-OPEN 1.000E+000   6   HOUSE EVENT SETTINGSW-104 OPEN
XHOS-VLV104CLOSE 0.000E+000   6   HOUSE EVENT SETTINGSW-104 CLOSED
XHOS-VLV146-OPEN 1.000E+000   6   HOUSE EVENT SETTING SW-146 OPEN
XHOS-VLV146CLOSE 0.000E+000   6   HOUSE EVENT SETTING SW-146 CLOSED
ZERO             0.000E+000   3   MEX EVENT ZERO
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EVENT NAME	POINT EST.	F-V IMPORT	RISK RED	RRW Rank	RSK ACMT	RAW Rank
INIT-R	6.90E-03	2.44E-01	1.323	1	36.1	61
INIT-T2	1.90E-01	1.78E-01	1.217	2	1.76	255
HEP-HHR-EOP13-23	1.25E-02	1.62E-01	1.194	3	13.83	92
HEP-ODC-EOP-3-21	2.00E-02	1.50E-01	1.177	4	8.37	126
HEP-RHR-EOP13-23	2.45E-02	1.41E-01	1.164	5	6.62	137
SGTR-A	5.00E-01	1.23E-01	1.14	6	1.12	400
INIT-TCC	3.65E+02	1.22E-01	1.139	7	0.88	586
SGTR-B	5.00E-01	1.21E-01	1.138	8	1.12	401
HEP-RCS-CSPH1-12	2.36E-02	1.19E-01	1.135	9	5.93	144
NON-SBO-FLG	1.00E+00	1.15E-01	1.13	10	1	523
INIT-T1	7.10E-03	1.15E-01	1.13	11	17.11	82
AF--HEP-CST-LOW-	3.90E-04	1.12E-01	1.127	12	288.87	36
REC-OPEN-CV0112	1.00E-01	9.82E-02	1.109	13	1.88	247
125-HEP-EOP10-08	4.20E-03	9.31E-02	1.103	14	23.08	66
AF--TDP-FR--1P29	3.21E-02	7.77E-02	1.084	15	3.34	184
INIT-TFB	4.30E-03	7.69E-02	1.083	16	18.81	77
INIT-TSW	3.65E+02	6.77E-02	1.073	17	0.93	585
TSB-TFB-A	5.00E-01	6.67E-02	1.071	18	1.07	433
TSB-TFB-B	5.00E-01	6.33E-02	1.068	19	1.06	440
IRB-INDUCED-SGTR	2.70E-02	6.25E-02	1.067	20	3.25	185
INIT-TSB	9.90E-03	5.31E-02	1.056	21	6.31	139
CCW-SYS-PR-LOWER	5.00E-01	5.21E-02	1.055	22	1.05	446
WG--HX--IL-0048A	2.40E-05	5.21E-02	1.055	23	2170.74	17
INIT-S1	1.10E-04	5.02E-02	1.053	24	457.33	28
CV--MOV-CC-0112B	2.57E-03	4.98E-02	1.052	25	20.33	70
FLAG-SW-SUPPLY	1.00E+00	4.84E-02	1.051	26	1	524
HEP-ECA-EOP31-32	7.70E-03	4.28E-02	1.045	27	6.52	138
CC--MDP-TM-0011B	1.22E-02	4.25E-02	1.044	28	4.44	161
480-BS--LP--1B03	2.40E-06	3.95E-02	1.041	29	16470.17	5
FP--MDP-TM-0035A	3.52E-02	3.67E-02	1.038	30	2.01	245
AF--HEP-CST-FW--	1.10E-02	3.47E-02	1.036	31	4.12	168
FLAG-1ASG-OUT	1.00E+00	3.31E-02	1.034	32	1	525
FLAG-B-SI-REC	1.00E+00	3.31E-02	1.034	33	1	526
FP--DDP-FR-0035B	2.63E-01	3.27E-02	1.034	34	1.09	419
FLAG-A-SI-REC	1.00E+00	3.23E-02	1.033	35	1	527
HEP-MS--EOP-3-02	4.75E-03	3.20E-02	1.033	36	7.7	132
FLAG-P38A-U2	5.00E-01	3.15E-02	1.032	37	1.03	463
AF--MDP-FR---38A	1.49E-02	3.09E-02	1.032	38	3.04	190
AF--MDP-TM---38A	1.82E-02	3.05E-02	1.031	39	2.65	204

EVENT NAME	POINT EST.	F-V IMPORT	RISK RED	RRW Rank	RSK ACMT	RAW Rank
AF--HEP-CST-SW--	4.60E-03	3.04E-02	1.031	40	7.57	133
HEP-RCS-CSPH1-13	2.05E-02	3.02E-02	1.031	41	2.44	229
FLAG-1BSG-OUT	1.00E+00	2.97E-02	1.031	42	1	528
AF--MDP-FR---38B	1.49E-02	2.83E-02	1.029	43	2.87	194
AF--MDP-TM---38B	1.82E-02	2.79E-02	1.029	44	2.5	226
INIT-EXC	9.90E-07	2.76E-02	1.028	45	27866.29	4
AF--HEP-MDP-FLOW	4.40E-02	2.74E-02	1.028	46	1.6	283
FLAG-P38B-U2	5.00E-01	2.71E-02	1.028	47	1.03	464
138-HEP-STARTG05	1.30E-01	2.62E-02	1.027	48	1.18	361
ATWS-FLAG	1.00E+00	2.35E-02	1.024	49	1	529
PLA-RX-POWER-HI	1.00E+00	2.35E-02	1.024	50	1	530
AF--HEP-CST-SWMD	1.50E-02	2.06E-02	1.021	51	2.35	234
REC-MAN-OPENVLV2	1.00E-01	2.01E-02	1.02	52	1.18	362
HEP-IA--FO-04748	1.00E-03	1.95E-02	1.02	53	20.49	68
FLAG-SW-DISCHARG	1.00E+00	1.93E-02	1.02	54	1	531
INIT-T3	6.60E-01	1.91E-02	1.019	55	1.01	492
RH--VLV-RE-0706B	1.00E-03	1.78E-02	1.018	56	18.82	75
RH--VLV-RE-0706A	1.00E-03	1.78E-02	1.018	57	18.82	76
IRA-INDUCED-SGTR	2.70E-03	1.76E-02	1.018	58	7.5	134
PRA-PRESS-RELIEF	2.00E-01	1.76E-02	1.018	59	1.07	434
HEP-SW--AOP9A-63	5.20E-02	1.72E-02	1.017	60	1.31	332
HEP-MFW-CSPH1-XX	1.00E-01	1.64E-02	1.017	61	1.15	384
FO--MDP-CM-CC44-	1.69E-04	1.57E-02	1.016	62	93.57	50
480-BS--TM--2B04	6.98E-03	1.54E-02	1.016	63	3.18	188
DGS-TO-A05-A06	1.00E+00	1.52E-02	1.015	64	1	532
AF--T---TM--T24A	2.60E-02	1.46E-02	1.015	65	1.55	287
AF--T---TM--T24B	2.60E-02	1.46E-02	1.015	66	1.55	288
AF--CKV-CC---117	5.00E-05	1.41E-02	1.014	67	283.17	37
FLAG-1BSG-INTACT	1.00E+00	1.33E-02	1.014	68	1	533
AF--AOV-CC1-4002	5.86E-03	1.31E-02	1.013	69	3.23	186
SW--MV--PG-00165	2.99E-06	1.29E-02	1.013	70	4322.53	10
B-LHR-FAIL-FLAG	1.00E+00	1.27E-02	1.013	71	1	534
A-LHR-FAIL-FLAG	1.00E+00	1.26E-02	1.013	72	1	535
INIT-SBO	7.10E-03	1.23E-02	1.012	73	2.72	201
SBO-INIT-FLG	1.00E+00	1.23E-02	1.012	74	1	536
FLAG-NON-ATWS	1.00E+00	1.21E-02	1.012	75	1	537
RP--CRD-FO-00000	1.80E-06	1.20E-02	1.012	76	6674.02	9
FLAG-1ASG-INTACT	1.00E+00	1.19E-02	1.012	77	1	538
AF--TDP-TM--1P29	7.76E-03	1.18E-02	1.012	78	2.51	225
AF--AOV-CC--4007	5.86E-03	1.16E-02	1.012	79	2.97	191

EVENT NAME	POINT EST.	F-V IMPORT	RISK RED	RRW Rank	RSK ACMT	RAW Rank
AF--AOV-CC--4012	5.86E-03	1.16E-02	1.012	80	2.97	192
AF--AOV-CC--4014	5.86E-03	1.07E-02	1.011	81	2.82	197
AF--AOV-CC--4019	5.86E-03	1.07E-02	1.011	82	2.82	198
138-GT--FS---G05	5.56E-02	1.05E-02	1.011	83	1.18	363
INIT-S2	3.20E-03	1.05E-02	1.011	84	4.28	166
B-HHI-FAIL-FLAG	1.00E+00	9.94E-03	1.01	85	1	539
A-HHI-FAIL-FLAG	1.00E+00	9.91E-03	1.01	86	1	540
138-GT--TM---G05	5.18E-02	9.77E-03	1.01	87	1.18	364
SW--VLV-OC---104	2.99E-06	9.66E-03	1.01	88	3230.99	12
SW--VLV-OC---146	2.99E-06	9.66E-03	1.01	89	3230.99	13
CV--CKV-CC-00357	5.00E-05	9.63E-03	1.01	90	193.5	41
AF--TDP-FS--1P29	4.31E-03	9.40E-03	1.009	91	3.17	189
345-GRD-LP--LOSP	1.42E-03	9.11E-03	1.009	92	7.41	135
DG--DG--TM---G03	4.72E-02	8.84E-03	1.009	93	1.18	365
DG--DG--TM---G04	4.72E-02	8.47E-03	1.009	94	1.17	370
MS--SV--CM---U18	6.51E-04	8.25E-03	1.008	95	13.66	94
CC--MDP-FR-0011A	1.31E-04	8.10E-03	1.008	96	62.91	53
DG--DG--FR---G03	4.04E-02	7.82E-03	1.008	97	1.19	360
HEP-MFW-CSPH1-06	5.00E-02	7.81E-03	1.008	98	1.15	385
HEP-ECC-ECA00-21	5.00E-01	7.76E-03	1.008	99	1.01	493
INIT-TD1	3.65E+02	7.68E-03	1.008	100	0.99	583
DG--DG--FR---G04	4.04E-02	7.52E-03	1.008	101	1.18	366
AF--VLV-RE---006	1.00E-03	7.27E-03	1.007	102	8.26	128
AF--VLV-RE---003	1.00E-03	7.27E-03	1.007	103	8.26	129
AF--VLV-RE---005	1.00E-03	7.27E-03	1.007	104	8.26	130
AF--VLV-RE---008	1.00E-03	7.27E-03	1.007	105	8.26	131
SW--VLV-TM42-4-9	1.46E-03	7.11E-03	1.007	106	5.86	146
SW--VLV-OC---009	2.99E-06	6.91E-03	1.007	107	2312	15
SW--VLV-OC---004	2.99E-06	6.91E-03	1.007	108	2312	16
125-BS--LP---D01	2.40E-06	6.37E-03	1.006	109	2655.36	14
INIT-TIA	3.65E+02	6.33E-03	1.006	110	0.99	584
FLAG-U2-REQ-AFW	1.00E+00	6.26E-03	1.006	111	1	541
RC--PIP-RP-00CLA	5.00E-01	6.03E-03	1.006	112	1.01	494
RC--PIP-RP-00CLB	5.00E-01	6.01E-03	1.006	113	1.01	495
RP--BKR-CM--RTAB	7.01E-05	5.98E-03	1.006	114	86.24	52
ESF-REL-FT-112BX	3.00E-04	5.74E-03	1.006	115	20.13	72
ESF-REL-FT-141BX	3.00E-04	5.74E-03	1.006	116	20.13	73
SW--VLV-TM---104	1.46E-03	5.74E-03	1.006	117	4.92	152
SW--VLV-TM---146	1.46E-03	5.74E-03	1.006	118	4.92	153
DG--DG--TM---G01	4.72E-02	5.66E-03	1.006	119	1.11	406

EVENT NAME	POINT EST.	F-V IMPORT	RISK RED	RRW Rank	RSK ACMT	RAW Rank
DG--DG--TM---G02	4.72E-02	5.57E-03	1.006	120	1.11	407
AC-RECOVERED-2HR	7.20E-01	5.44E-03	1.005	121	1	542
SL-MINIMAL	7.90E-01	5.43E-03	1.005	122	1	543
HEP-RP--AOP9B-63	1.10E-04	5.38E-03	1.005	123	49.92	59
SW--CKV-CO---32D	1.20E-05	5.20E-03	1.005	124	433.89	30
DG--DG--FR---G01	4.04E-02	5.10E-03	1.005	125	1.12	402
AF--MDP-CM-R38AB	3.27E-04	5.05E-03	1.005	126	16.42	84
DG--DG--FR---G02	4.04E-02	5.03E-03	1.005	127	1.12	403
FP--AOV-CC-03771	1.73E-03	4.88E-03	1.005	128	3.81	174
SW--VLV-RE42-4-9	1.00E-03	4.84E-03	1.005	129	5.84	147
SW--VLV-OC---042	2.99E-06	4.61E-03	1.005	130	1541.66	18
HEP-480-AOP10C-6	1.00E-01	4.55E-03	1.005	131	1.04	455
480-BS--TM--2B03	6.98E-03	4.53E-03	1.005	132	1.64	276
SW--VLV-TM---221	1.46E-03	4.11E-03	1.004	133	3.81	175
SW--VLV-TM---224	1.46E-03	4.11E-03	1.004	134	3.81	176
RECISOLATE-1	5.00E-02	4.08E-03	1.004	135	1.08	425
SW--VLV-RE---104	1.00E-03	3.91E-03	1.004	136	4.91	154
SW--VLV-RE---146	1.00E-03	3.91E-03	1.004	137	4.91	155
INIT-A	5.00E-06	3.88E-03	1.004	138	777.6	19
HEP-CCW-AOP9B-74	7.00E-02	3.87E-03	1.004	139	1.05	447
IA--PIP-RP-NONIS	1.00E-07	3.85E-03	1.004	140	38540.39	2
SL-NONMINIMAL	2.10E-01	3.79E-03	1.004	141	1.01	496
CV--MDP-TM-0002C	9.99E-02	3.78E-03	1.004	142	1.03	465
SW--CKV-CO---32E	1.20E-05	3.73E-03	1.004	143	311.78	32
DG--DG--CM-G0304	2.05E-03	3.69E-03	1.004	144	2.79	200
CC--T---RP-00012	1.20E-05	3.61E-03	1.004	145	301.78	34
SW--CKV-CO---32B	1.20E-05	3.60E-03	1.004	146	301.36	35
HEP-ODA-EOP12-05	2.70E-03	3.58E-03	1.004	147	2.32	235
SW--CKV-OO---32F	1.00E-03	3.57E-03	1.004	148	4.57	158
HEP-CV--AOP6E-62	4.10E-02	3.57E-03	1.004	149	1.08	426
HEP-FP--FUEL-OIL	3.50E-02	3.52E-03	1.004	150	1.1	410
CC--CKV-OO-0724A	1.00E-03	3.43E-03	1.003	151	4.42	162
INIT-ISL	1.10E-07	3.07E-03	1.003	152	27866.31	3
SW--MDP-TM---32B	1.45E-02	3.04E-03	1.003	153	1.21	351
SW--MDP-TM---32E	1.45E-02	3.04E-03	1.003	154	1.21	352
SW--MDP-TM---32D	1.45E-02	2.94E-03	1.003	155	1.2	353
A-LHI-FAIL-FLAG	1.00E+00	2.87E-03	1.003	156	1	544
B-LHI-FAIL-FLAG	1.00E+00	2.81E-03	1.003	157	1	545
SW--VLV-RE---224	1.00E-03	2.80E-03	1.003	158	3.8	177
SW--VLV-RE---221	1.00E-03	2.80E-03	1.003	159	3.8	178

EVENT NAME	POINT EST.	F-V IMPORT	RISK RED	RRW Rank	RSK ACMT	RAW Rank
FP--MV--RE-00306	1.00E-03	2.76E-03	1.003	160	3.76	179
SW--CKV-OO-0135A	1.00E-03	2.76E-03	1.003	161	3.76	180
SW--VLV-TM632116	1.46E-03	2.74E-03	1.003	162	2.87	195
416-X---LP--1X13	1.94E-05	2.70E-03	1.003	163	140.25	47
138-GT--FR---G05	1.65E-02	2.67E-03	1.003	164	1.16	379
DG--DG--CM-G0102	2.05E-03	2.65E-03	1.003	165	2.29	238
HEP-RP--CSPS1-01	5.70E-03	2.64E-03	1.003	166	1.46	302
FP--DDP-TM-0035B	2.64E-02	2.62E-03	1.003	167	1.1	411
CC--MDP-FS-0011B	7.50E-04	2.57E-03	1.003	168	4.42	163
AF--CKV-CM100101	8.80E-06	2.42E-03	1.002	169	276.11	38
AF--AOV-CM-07-14	1.62E-04	2.40E-03	1.002	170	15.79	86
AF--AOV-CM--1219	1.62E-04	2.40E-03	1.002	171	15.79	87
AF--HEP-TDAFISOL	5.75E-03	2.39E-03	1.002	172	1.41	322
IA--K---TM-0002B	6.69E-02	2.38E-03	1.002	173	1.03	466
MS--MOV-CC1-2019	3.65E-03	2.37E-03	1.002	174	1.65	269
NONRECOVERAC-2H	2.80E-01	2.32E-03	1.002	175	1.01	497
SW--VLV-OC---063	2.99E-06	2.30E-03	1.002	176	771.33	20
SW--VLV-OC---221	2.99E-06	2.30E-03	1.002	177	771.33	21
SW--VLV-OC---224	2.99E-06	2.30E-03	1.002	178	771.33	22
SW--VLV-OC---021	2.99E-06	2.30E-03	1.002	179	771.33	23
SW--VLV-OC---016	2.99E-06	2.30E-03	1.002	180	771.33	24
MS--MOV-CC1-2020	3.65E-03	2.26E-03	1.002	181	1.62	278
SW--MDP-CM-RPUMP	5.10E-06	2.25E-03	1.002	182	442.88	29
HEP-CCW-OI-71-42	4.00E-02	2.24E-03	1.002	183	1.05	448
SWI-PIP-RP-SEC-B	1.35E-07	2.21E-03	1.002	184	16369.83	6
SWI-PIP-RP-SEC-A	1.35E-07	2.21E-03	1.002	185	16369.83	7
NONRECOVERAC-4H	1.30E-01	2.13E-03	1.002	186	1.01	498
ESF-REL-CM-MASTR	2.03E-05	2.08E-03	1.002	187	103.66	49
MS--MSV-OO-02018	7.81E-03	2.04E-03	1.002	188	1.26	342
MS--MSV-OO-02017	7.81E-03	2.04E-03	1.002	189	1.26	343
SA--K---TM-0003B	6.69E-02	2.02E-03	1.002	190	1.03	467
FLAG-A-SI-INJ	1.00E+00	1.99E-03	1.002	191	1	546
MS--SV--OO1-2010	3.14E-03	1.96E-03	1.002	192	1.62	279
DG--DG--FS---G03	1.26E-02	1.93E-03	1.002	193	1.15	386
MS--SV--OO1-2005	3.14E-03	1.92E-03	1.002	194	1.61	282
DG--DG--FS---G04	1.26E-02	1.91E-03	1.002	195	1.15	387
INIT-TD2	3.65E+02	1.88E-03	1.002	196	1	547
SW--VLV-RE632116	1.00E-03	1.87E-03	1.002	197	2.86	196
SW--VLV-RE-1-139	1.00E-03	1.82E-03	1.002	198	2.82	199
AF--CKV-OO-1-106	1.00E-03	1.72E-03	1.002	199	2.72	202

EVENT NAME	POINT EST.	F-V IMPORT	RISK RED	RRW Rank	RSK ACMT	RAW Rank
IA--K---FR-0002A	1.47E-03	1.67E-03	1.002	200	2.14	242
FLAG-SBO-NO-AC	1.00E+00	1.66E-03	1.002	201	1	548
AF--TDP-CMFR-P29	7.47E-04	1.66E-03	1.002	202	3.22	187
AF--CKV-OO-1-107	1.00E-03	1.62E-03	1.002	203	2.62	205
SI--MOV-RE-0841A	1.00E-03	1.61E-03	1.002	204	2.6	207
SI--MOV-RE-0841B	1.00E-03	1.61E-03	1.002	205	2.6	208
SI--MDP-CM-S15AB	1.35E-04	1.60E-03	1.002	206	12.81	99
416-BKR-CC1A5277	5.73E-04	1.57E-03	1.002	207	3.74	181
SW--VLV-RE---111	1.00E-03	1.53E-03	1.002	208	2.53	216
125-HEP-1B49D301	3.50E-02	1.50E-03	1.002	209	1.04	456
FP--DDP-FS-0035B	1.47E-02	1.44E-03	1.001	210	1.1	412
HEP-CV--EOP-0-49	4.10E-03	1.42E-03	1.001	211	1.34	329
AF--MDP-FS---38A	7.99E-04	1.33E-03	1.001	212	2.67	203
NONRECOVERAC-1H	4.10E-01	1.33E-03	1.001	213	1	549
SI--HOV-CM-850AB	8.08E-05	1.26E-03	1.001	214	16.62	83
AF--MDP-FS---38B	7.99E-04	1.25E-03	1.001	215	2.57	215
FLAG-B-SI-INJ	1.00E+00	1.25E-03	1.001	216	1	550
CV--MDP-FR-0002A	1.40E-03	1.22E-03	1.001	217	1.87	248
HEP-MFW-EOP01-06	2.30E-03	1.20E-03	1.001	218	1.52	295
DG--DG--FS---G01	1.26E-02	1.15E-03	1.001	219	1.09	420
DG--DG--FS---G02	1.26E-02	1.15E-03	1.001	220	1.09	421
SI--MDP-FS-0015B	2.42E-03	1.09E-03	1.001	221	1.45	303
480-MCC-TM--2B42	2.20E-03	1.08E-03	1.001	222	1.49	297
CC--HX--PG-0012A	6.30E-06	1.07E-03	1.001	223	171.45	42
416-X---LP--1X14	1.94E-05	1.07E-03	1.001	224	56.01	56
SI--MOV-CM-857AB	9.90E-05	1.04E-03	1.001	225	11.45	109
CC--REL-FT-639X2	3.00E-04	1.01E-03	1.001	226	4.36	164
SW--MOV-CC--4009	2.00E-03	9.64E-04	1.001	227	1.48	298
SW--MOV-CC--4016	2.00E-03	9.34E-04	1.001	228	1.47	300
VDG-W---FS--183C	7.37E-03	8.80E-04	1.001	229	1.12	404
AF--MDP-CM-S38AB	6.47E-05	8.79E-04	1.001	230	14.58	91
VDG-W---FS--184B	7.37E-03	8.77E-04	1.001	231	1.12	405
SWI-PIP-RP-NONIS	2.74E-09	8.53E-04	1.001	232	311142.97	1
SI--MDP-TM-0015B	3.36E-03	7.99E-04	1.001	233	1.24	344
AF--VLV-OC---001	2.99E-06	7.95E-04	1.001	234	267.01	39
125-INV-LP--0D07	2.21E-04	7.65E-04	1.001	235	4.47	159
SI--MDP-FS-0015A	2.42E-03	7.56E-04	1.001	236	1.31	333
SW--VLV-RE---140	1.00E-03	7.56E-04	1.001	237	1.75	256
SI--STR-PG--SUMP	5.00E-05	7.47E-04	1.001	238	15.93	85
AC-RECOVERED-4HR	8.70E-01	7.33E-04	1.001	239	1	551

EVENT NAME	POINT EST.	F-V IMPORT	RISK RED	RRW Rank	RSK ACMT	RAW Rank
416-HEP-G04-1A06	3.90E-03	7.24E-04	1.001	240	1.18	367
SW--VLV-CC1-2090	4.41E-04	7.16E-04	1.001	241	2.62	206
AF--CKV-CC-1-100	5.00E-05	6.95E-04	1.001	242	14.9	90
125-INV-CM-D0708	1.98E-06	6.52E-04	1.001	243	330.25	31
AF--CKV-CC-1-101	5.00E-05	6.40E-04	1.001	244	13.81	93
CC--MOV-CM-738AB	4.15E-05	6.10E-04	1.001	245	15.69	88
SW--MDP-FS---32B	3.04E-03	6.08E-04	1.001	246	1.2	354
SW--MDP-FS---32E	3.04E-03	6.08E-04	1.001	247	1.2	355
SW--MDP-FS---32D	3.04E-03	6.04E-04	1.001	248	1.2	356
MS--VLV-RE-1-237	1.00E-03	5.98E-04	1.001	249	1.6	284
AF--VLV-RE-1-019	1.00E-03	5.98E-04	1.001	250	1.6	285
SW--SOV-CC-2832A	2.05E-03	5.90E-04	1.001	251	1.29	335
AF--TDP-FR--2P29	3.21E-02	5.85E-04	1.001	252	1.02	480
AF--VLV-RE-1-018	1.00E-03	5.55E-04	1.001	253	1.55	289
MS--VLV-RE-1-235	1.00E-03	5.55E-04	1.001	254	1.55	290
HEP-IA--FO-START	6.90E-04	5.51E-04	1.001	255	1.8	251
138-BS--TM---H03	3.56E-03	5.41E-04	1.001	256	1.15	388
FP--MDP-FS-0035A	8.32E-04	5.17E-04	1.001	257	1.62	280
SW--MV--PG-00286	2.99E-06	5.09E-04	1.001	258	171.45	43
SW--MV--PG-00322	2.99E-06	5.09E-04	1.001	259	171.45	44
SW--MV--PG-00065	2.99E-06	5.08E-04	1.001	260	170.88	45
FP--MDP-FR-0035A	8.16E-04	5.07E-04	1.001	261	1.62	281
AF--MOV-CC1-4023	3.43E-04	5.03E-04	1.001	262	2.47	227
IA--AOV-CM-04748	2.59E-05	5.01E-04	1.001	263	20.34	69
HEP-CCW-EOP13-03	1.20E-04	4.84E-04	1	264	5.04	151
125-BS--LP---D02	2.40E-06	4.83E-04	1	265	202.31	40
AF--MOV-CC1-4021	3.43E-04	4.79E-04	1	266	2.39	231
RC--POR-CM-4301C	1.02E-04	4.76E-04	1	267	5.66	150
416-BKR-CC1A5257	5.73E-04	4.47E-04	1	268	1.78	252
480-HEP-1B041B03	1.00E-03	4.44E-04	1	269	1.44	304
SI--MDP-TM-0015A	3.36E-03	4.41E-04	1	270	1.13	394
SWI-PIP-RP-N-S-W	2.74E-08	4.41E-04	1	271	16080.09	8
480-BKR-CO-5216B	7.61E-06	4.38E-04	1	272	58.53	54
416-BKR-CO-A5258	7.61E-06	4.38E-04	1	273	58.53	55
ESF-REL-FT-38A1X	3.00E-04	4.37E-04	1	274	2.46	228
SW--MOV-OC--2870	5.98E-07	4.36E-04	1	275	730.51	25
CC--HX--RP-0012A	9.45E-07	4.33E-04	1	276	459.18	27
CC--MDP-FR-0011B	1.31E-04	4.26E-04	1	277	4.25	167
ESF-REL-FT-38B1X	3.00E-04	4.16E-04	1	278	2.39	232
SA--K---FR-0003A	1.47E-03	3.98E-04	1	279	1.27	341

EVENT NAME	POINT EST.	F-V IMPORT	RISK RED	RRW Rank	RSK ACMT	RAW Rank
SI--HOV-CC-0850B	1.72E-03	3.95E-04	1	280	1.23	346
OP--HEP--DGFOXFR	1.00E+00	3.84E-04	1	281	1	552
SA--K---TM-0003A	6.69E-02	3.83E-04	1	282	1.01	499
SI--MOV-CM-851AB	2.64E-05	3.81E-04	1	283	15.45	89
CS--MDP-FR-0028B	7.39E-03	3.81E-04	1	284	1.05	449
IAI-F---CM-3537A	2.29E-06	3.76E-04	1	285	165.14	46
AF--PT--SA--4042	2.52E-04	3.47E-04	1	286	2.38	233
416-X---LP--1X04	1.94E-05	3.38E-04	1	287	18.4	80
AC-RECOVERED-1HR	5.90E-01	3.37E-04	1	288	1	553
VDG-W---CM--ALL4	2.78E-04	3.37E-04	1	289	2.21	240
VDG-W---CM-AB123	2.76E-04	3.35E-04	1	290	2.21	241
AF--PT--SA1-4044	2.52E-04	3.32E-04	1	291	2.32	236
AF--PT--SA--4043	2.52E-04	3.32E-04	1	292	2.32	237
HEP-ESF-EOP-0-04	3.25E-03	3.27E-04	1	293	1.1	413
ESF-OPR-RE-SITSW	1.00E-03	3.27E-04	1	294	1.33	331
125-HEP-D305-D01	1.00E-03	3.04E-04	1	295	1.3	334
RH--MDP-TM-0010B	1.49E-03	3.00E-04	1	296	1.2	357
416-BKR-OO1A5255	5.73E-04	2.99E-04	1	297	1.52	296
416-BS--LP--1A05	2.40E-06	2.99E-04	1	298	125.6	48
SI--HOV-CC-0850A	1.72E-03	2.82E-04	1	299	1.16	380
120-BS--TM---Y16	5.71E-03	2.65E-04	1	300	1.05	450
120-BS--TM---Y15	5.71E-03	2.65E-04	1	301	1.05	451
480-BKR-OO15216C	5.73E-04	2.52E-04	1	302	1.44	305
AF--HEP-CST-SWTD	9.20E-03	2.48E-04	1	303	1.03	468
RC--POR-CC-00430	3.00E-03	2.48E-04	1	304	1.08	427
RH--MDP-CM-S10AB	2.45E-05	2.37E-04	1	305	10.69	116
SI--MOV-CC-0851B	1.26E-03	2.33E-04	1	306	1.18	368
480-MCC-TM--2B49	2.20E-03	2.32E-04	1	307	1.11	408
AF--CKV-CM-IAALL	2.20E-05	2.18E-04	1	308	10.92	115
CV--MOV-OO-0112C	2.57E-03	2.12E-04	1	309	1.08	428
HEP-ODB-CSPC1-14	1.05E-02	2.12E-04	1	310	1.02	481
SW--MDP-FR---32F	4.73E-04	2.10E-04	1	311	1.44	306
SW--MOV-CC-02880	2.00E-03	2.09E-04	1	312	1.1	414
RH--MDP-TM-0010A	1.49E-03	2.05E-04	1	313	1.14	390
SI--MOV-CC-0857B	1.26E-03	2.05E-04	1	314	1.16	381
SI--MOV-OO-0896B	1.26E-03	2.05E-04	1	315	1.16	382
AF--AOV-CM--4002	1.62E-04	2.01E-04	1	316	2.24	239
480-BS--TM---B08	2.38E-03	1.99E-04	1	317	1.08	429
RH--MOV-CO-00720	9.25E-06	1.94E-04	1	318	21.95	67
HEP-IA--AOP5B-74	2.00E-02	1.90E-04	1	319	1.01	500

EVENT NAME	POINT EST.	F-V IMPORT	RISK RED	RRW Rank	RSK ACMT	RAW Rank
RC--MDP-LK-RCPSL	1.60E-02	1.90E-04	1	320	1.01	501
IAI-PIP-RP-ISLOA	2.74E-07	1.84E-04	1	321	670.83	26
SW--CKV-OO---32A	1.00E-03	1.82E-04	1	322	1.18	369
VDG-W---CM12ABCD	2.78E-04	1.79E-04	1	323	1.64	277
CV--AOV-CC-00142	1.73E-03	1.75E-04	1	324	1.1	415
MS--ADV-CM1-1516	8.51E-04	1.75E-04	1	325	1.2	358
CS--MDP-FS-0028A	2.99E-02	1.73E-04	1	326	1.01	502
SA--CKV-CC-00493	5.00E-05	1.72E-04	1	327	4.45	160
SW--MDP-FR---32C	4.73E-04	1.72E-04	1	328	1.36	327
SW--CKV-OO---32C	1.00E-03	1.72E-04	1	329	1.17	371
SW--MDP-FR---32A	4.73E-04	1.72E-04	1	330	1.36	328
125-INV-CM-D0789	5.52E-07	1.67E-04	1	331	303.92	33
AF--TDP-CMFS-P29	1.46E-04	1.63E-04	1	332	2.12	243
416-HEP-G02-1A05	3.90E-03	1.62E-04	1	333	1.04	457
SI--MDP-CM-R15AB	1.71E-05	1.61E-04	1	334	10.43	117
SI--MOV-CC-0851A	1.26E-03	1.58E-04	1	335	1.13	395
SI--MOV-CM-896AB	1.76E-05	1.56E-04	1	336	9.87	120
ESF-REL-CM-38AB1	1.41E-05	1.55E-04	1	337	12.01	108
CC--CKV-CC-0724B	5.00E-05	1.55E-04	1	338	4.09	169
CS--MDP-CM-S28AB	1.40E-03	1.46E-04	1	339	1.1	416
ESF-LT--NO-00141	8.19E-06	1.45E-04	1	340	18.72	78
ESF-LT--NO-00112	8.19E-06	1.45E-04	1	341	18.72	79
CC--VLV-RE-HX11B	1.00E-03	1.45E-04	1	342	1.14	391
ESF-REL-FT-86B2B	3.00E-04	1.42E-04	1	343	1.47	301
480-BKR-CO15211B	7.61E-06	1.38E-04	1	344	19.14	74
IA--K---CM--ALL4	1.92E-04	1.37E-04	1	345	1.71	259
FO--MDP-FS-0206B	2.06E-03	1.31E-04	1	346	1.06	441
FO--MDP-FS-0207B	2.06E-03	1.31E-04	1	347	1.06	442
SI--VLV-RE-0829B	1.00E-03	1.30E-04	1	348	1.13	396
SI--MOV-OO-0896A	1.26E-03	1.30E-04	1	349	1.1	417
SI--MOV-CC-0857A	1.26E-03	1.30E-04	1	350	1.1	418
416-X---LP--2X13	1.94E-05	1.22E-04	1	351	7.29	136
416-BS--LP--1A06	2.40E-06	1.18E-04	1	352	50.26	57
480-BS--LP--1B04	2.40E-06	1.18E-04	1	353	50.26	58
CC--PIP-RP-HEADR	2.88E-08	1.18E-04	1	354	4100.05	11
CC--MOV-CC-0738B	8.82E-04	1.15E-04	1	355	1.13	397
CS--MDP-FS-0028B	2.99E-02	1.06E-04	1	356	1	554
480-BS--TM---B09	2.38E-03	1.06E-04	1	357	1.04	458
CV--MDP-CM-P2A2C	1.30E-04	1.02E-04	1	358	1.78	253
CV--MDP-CM-P2A2B	1.30E-04	1.02E-04	1	359	1.78	254

EVENT NAME	POINT EST.	F-V IMPORT	RISK RED	RRW Rank	RSK ACMT	RAW Rank
SW--MOV-CM-09-16	9.40E-05	9.90E-05	1	360	2.05	244
138-BKR-CO-H5222	7.61E-06	9.32E-05	1	361	13.24	95
SW--STR-PG1-2998	1.20E-04	8.96E-05	1	362	1.75	257
AF--CKV-CM--0204	8.80E-06	8.90E-05	1	363	11.11	110
AF--CKV-CM--0910	8.80E-06	8.90E-05	1	364	11.11	111
AF--CKV-CM115116	8.80E-06	8.90E-05	1	365	11.11	112
AF--CKV-CM--1213	8.80E-06	8.90E-05	1	366	11.11	113
CC--VLV-RE-HX11A	1.00E-03	8.76E-05	1	367	1.09	422
RH--CKV-CM-710AB	1.04E-05	8.70E-05	1	368	9.37	123
IA--AOV-CM-31479	2.59E-05	8.69E-05	1	369	4.35	165
SW--MDP-FR---32D	4.73E-04	8.27E-05	1	370	1.17	372
SW--MDP-FR---32E	4.73E-04	8.27E-05	1	371	1.17	373
SW--MDP-FR---32B	4.73E-04	8.27E-05	1	372	1.17	374
FP--AOV-CC1-3771	1.73E-03	8.24E-05	1	373	1.05	452
125-BS--LP--D301	2.40E-06	8.22E-05	1	374	35.26	62
125-BS--LP---D09	2.40E-06	8.22E-05	1	375	35.26	63
SW--YS--PG-02919	1.20E-04	8.03E-05	1	376	1.67	268
RP--BKR-CC-52RTA	1.07E-03	8.02E-05	1	377	1.07	435
RP--BKR-CC-52RTB	1.07E-03	8.02E-05	1	378	1.07	436
SW--MDP-CM-SPUMP	1.09E-05	8.02E-05	1	379	8.35	127
SI--CKV-CC-0867A	5.00E-05	8.01E-05	1	380	2.6	209
SI--CKV-CC-0867B	5.00E-05	8.01E-05	1	381	2.6	210
SI--CKV-CC-0842A	5.00E-05	8.01E-05	1	382	2.6	211
SI--CKV-CC-0842B	5.00E-05	8.01E-05	1	383	2.6	212
HEP-CV--ECA01-4B	2.30E-03	7.79E-05	1	384	1.03	469
AF--MOV-CM--2123	7.31E-06	7.39E-05	1	385	11.11	114
SI--VLV-RE-0829A	1.00E-03	7.33E-05	1	386	1.07	437
SI--CKV-CM-891AB	7.95E-06	7.29E-05	1	387	10.17	118
SI--CKV-CM-889AB	7.95E-06	7.29E-05	1	388	10.17	119
125-FU--SO3013F2	3.11E-06	7.27E-05	1	389	24.39	64
125-FU--SO3013F1	3.11E-06	7.27E-05	1	390	24.39	65
RH--MDP-CM-R10AB	8.45E-06	7.07E-05	1	391	9.37	124
CV--MDP-FS-0002C	2.06E-03	7.02E-05	1	392	1.03	470
CC--MOV-CC-0738A	8.82E-04	6.95E-05	1	393	1.08	430
MS--ADV-CC1-2016	1.73E-03	6.75E-05	1	394	1.04	459
ESF-REL-CM-MSAB1	1.41E-05	6.65E-05	1	395	5.71	148
ESF-REL-CM-MSAB2	1.41E-05	6.65E-05	1	396	5.71	149
MS--ADV-CC1-2015	1.73E-03	6.43E-05	1	397	1.04	460
FLAG-A-CL-REC	1.00E+00	6.32E-05	1	398	1	555
FLAG-B-CL-REC	1.00E+00	6.32E-05	1	399	1	556

EVENT NAME	POINT EST.	F-V IMPORT	RISK RED	RRW Rank	RSK ACMT	RAW Rank
SI--FCV-CO-0835B	4.01E-05	6.14E-05	1	400	2.53	217
SI--FCV-CO-0844B	4.01E-05	6.14E-05	1	401	2.53	218
SI--FCV-CO-0844A	4.01E-05	6.14E-05	1	402	2.53	219
SI--FCV-CO-0835A	4.01E-05	6.14E-05	1	403	2.53	220
416-BKR-CC2A5296	5.73E-04	6.04E-05	1	404	1.11	409
IA--F---PG-0037A	9.74E-05	5.79E-05	1	405	1.59	286
138-X---LP--1X03	1.94E-05	5.64E-05	1	406	3.91	172
CV--MDP-FS-0002B	2.06E-03	5.50E-05	1	407	1.03	471
AF--AOV-CC2-4002	5.86E-03	5.18E-05	1	408	1.01	503
AF--MOV-OO1-4001	3.43E-04	5.03E-05	1	409	1.15	389
AF--TDP-TM--2P29	7.76E-03	4.98E-05	1	410	1.01	504
SI--CKV-CM-867AB	5.32E-07	4.74E-05	1	411	90.17	51
CC--CKV-OO-0724B	1.00E-03	4.61E-05	1	412	1.05	453
138-BKR-OOH52-10	5.73E-04	4.55E-05	1	413	1.08	431
138-BKR-OOH52G05	5.73E-04	4.55E-05	1	414	1.08	432
IA--CKV-CM-11892	2.35E-06	4.52E-05	1	415	20.23	71
FO--MDP-FS-0207A	2.06E-03	4.52E-05	1	416	1.02	482
FO--MDP-FS-0206A	2.06E-03	4.52E-05	1	417	1.02	483
CV--MDP-FR-0002C	1.40E-03	4.50E-05	1	418	1.03	472
AF--MOV-OO1-4000	3.43E-04	4.47E-05	1	419	1.13	398
SI--RV--CO-0830B	2.91E-05	4.46E-05	1	420	2.53	221
SI--RV--CO-0830A	2.91E-05	4.46E-05	1	421	2.53	222
480-MCC-LP--1B32	2.40E-06	4.05E-05	1	422	17.87	81
480-BKR-OO152491	5.73E-04	3.77E-05	1	423	1.07	438
480-MCC-TM--2B39	2.20E-03	3.77E-05	1	424	1.02	484
SI--MDP-FR-0015B	4.08E-04	3.76E-05	1	425	1.09	423
SA--T---RP-0033A	1.20E-05	3.66E-05	1	426	4.05	170
SA--T---RP-0033D	1.20E-05	3.66E-05	1	427	4.05	171
AF--CKV-CC---109	5.00E-05	3.57E-05	1	428	1.71	260
AF--CKV-CC---110	5.00E-05	3.57E-05	1	429	1.71	261
AF--CKV-CC---113	5.00E-05	3.57E-05	1	430	1.71	262
AF--CKV-CC---116	5.00E-05	3.57E-05	1	431	1.71	263
AF--CKV-CC---112	5.00E-05	3.57E-05	1	432	1.71	264
AF--CKV-CC---115	5.00E-05	3.57E-05	1	433	1.71	265
AF--CKV-CC-1-102	5.00E-05	3.57E-05	1	434	1.71	266
AF--CKV-CC-1-104	5.00E-05	3.57E-05	1	435	1.71	267
CC--MDP-FS-0011A	7.50E-04	3.46E-05	1	436	1.05	454
SW--AOV-CC-2836A	1.69E-04	3.45E-05	1	437	1.2	359
CV--AOV-CC-00296	1.73E-03	3.40E-05	1	438	1.02	485
HEP-ECA00-U2-13	3.90E-03	3.37E-05	1	439	1.01	505

EVENT NAME	POINT EST.	F-V IMPORT	RISK RED	RRW Rank	RSK ACMT	RAW Rank
SI--CKV-CM853ABD	2.86E-06	3.30E-05	1	440	12.54	100
SI--CKV-CM853BCD	2.86E-06	3.30E-05	1	441	12.54	101
SI--CKV-CM853ABC	2.86E-06	3.30E-05	1	442	12.54	102
CV--MDP-FR-0002B	1.40E-03	3.28E-05	1	443	1.02	486
CS--MDP-CM-P25AB	8.50E-05	3.24E-05	1	444	1.38	325
CC--AOV-OC-0761B	3.86E-05	3.21E-05	1	445	1.83	249
CC--AOV-OC-0761A	3.86E-05	3.21E-05	1	446	1.83	250
CS--AOV-CM-480-1	8.23E-05	3.14E-05	1	447	1.38	326
SI--CKV-CM853ALL	2.70E-06	3.12E-05	1	448	12.54	103
AF--TDP-FS--2P29	4.31E-03	3.07E-05	1	449	1.01	506
CS--MDP-FR-0028A	7.39E-03	3.07E-05	1	450	1	557
CS--CKV-OO-2190A	1.00E-03	3.07E-05	1	451	1.03	473
SW--VLV-RE-1-135	1.00E-03	2.98E-05	1	452	1.03	474
138-BS--LP---H02	2.40E-06	2.94E-05	1	453	13.24	96
RC--POR-CC-0431C	3.00E-03	2.92E-05	1	454	1.01	507
AF--CKV-CM-131-3	7.03E-05	2.92E-05	1	455	1.42	307
AF--CKV-CM-151-3	7.03E-05	2.92E-05	1	456	1.42	308
480-BKR-CO25240B	7.61E-06	2.78E-05	1	457	4.65	156
416-BKR-CO2A5275	7.61E-06	2.78E-05	1	458	4.65	157
AF--AOV-OC--4019	3.86E-05	2.53E-05	1	459	1.65	270
AF--AOV-OC--4007	3.86E-05	2.53E-05	1	460	1.65	271
AF--AOV-OC--4014	3.86E-05	2.53E-05	1	461	1.65	272
AF--AOV-OC--4012	3.86E-05	2.53E-05	1	462	1.65	273
SI--VLV-OC-0897B	2.99E-06	2.52E-05	1	463	9.42	121
SI--VLV-OC-0897A	2.99E-06	2.52E-05	1	464	9.42	122
SI--CKV-CM-853BC	2.15E-06	2.48E-05	1	465	12.54	104
SI--CKV-CM-853CD	2.15E-06	2.48E-05	1	466	12.54	105
SI--CKV-CM-853AD	2.15E-06	2.48E-05	1	467	12.54	106
SI--CKV-CM-853AB	2.15E-06	2.48E-05	1	468	12.54	107
RP--SW--CM-PABCD	6.78E-07	2.41E-05	1	469	36.49	60
FP--CKV-CC-0304A	5.00E-05	2.40E-05	1	470	1.48	299
MS--SV--CM-10-13	5.72E-05	2.38E-05	1	471	1.42	309
MS--SV--CM1--5-8	5.72E-05	2.38E-05	1	472	1.42	310
SW--CKV-CO---32F	1.20E-05	2.36E-05	1	473	2.96	193
CS--MOV-CM-89-90	2.96E-04	2.22E-05	1	474	1.07	439
125-BKR-CO-D02-8	7.61E-06	2.17E-05	1	475	3.86	173
RCA-PTS-RUPTURE	1.00E-04	2.16E-05	1	476	1.22	350
AF--HEP-MINI-GAG	3.40E-03	2.13E-05	1	477	1.01	508
SI--CKV-CM-8ABEF	2.83E-06	2.12E-05	1	478	8.48	125
VDG-W---CM----23	5.30E-05	2.08E-05	1	479	1.39	323

EVENT NAME	POINT EST.	F-V IMPORT	RISK RED	RRW Rank	RSK ACMT	RAW Rank
IA--K---FS-0002B	2.07E-03	2.08E-05	1	480	1.01	509
SA--K---FS-0003B	2.07E-03	2.08E-05	1	481	1.01	510
SW--SOV-CC-02820	2.05E-03	2.06E-05	1	482	1.01	511
SW--SOV-CC-2832B	2.05E-03	2.06E-05	1	483	1.01	512
AF--MOV-CC1-4006	3.43E-04	1.99E-05	1	484	1.06	443
SW--YS--PG-2918A	1.20E-04	1.97E-05	1	485	1.16	383
HEP-OCC-EOP01-04	1.50E-02	1.91E-05	1	486	1	558
RCD-PORV-STUCK	1.00E-01	1.91E-05	1	487	1	559
480-BKR-CO-5217B	7.61E-06	1.86E-05	1	488	3.44	182
416-BKR-CO-A5264	7.61E-06	1.86E-05	1	489	3.44	183
FP--VLV-RE-1-306	1.00E-03	1.84E-05	1	490	1.02	487
FP--VLV-RE-1-243	1.00E-03	1.84E-05	1	491	1.02	488
SI--CKV-CO-0842B	1.20E-05	1.84E-05	1	492	2.53	223
SI--CKV-CO-0842A	1.20E-05	1.84E-05	1	493	2.53	224
125-HEP-D06--D02	3.50E-02	1.79E-05	1	494	1	560
AF--HEP-RECIRC4F	5.06E-03	1.75E-05	1	495	1	561
FO--CKV-CC--CC44	5.00E-05	1.70E-05	1	496	1.34	330
ESF-REL-FT-AMXA2	3.00E-04	1.68E-05	1	497	1.06	444
ESF-TDR-FT-AMTDR	3.00E-04	1.68E-05	1	498	1.06	445
FO--MDP-TM-0207B	6.63E-04	1.64E-05	1	499	1.02	489
FO--MDP-TM-0206B	6.63E-04	1.64E-05	1	500	1.02	490
IA--SOV-CC-3000S	2.05E-03	1.52E-05	1	501	1.01	513
IA--AOV-OC-00187	3.86E-05	1.52E-05	1	502	1.39	324
FLAG-SBO-WITH-AC	1.00E+00	1.50E-05	1	503	1	562
AF--VLV-OC---008	2.99E-06	1.49E-05	1	504	5.97	140
AF--VLV-OC---005	2.99E-06	1.49E-05	1	505	5.97	141
AF--VLV-OC---006	2.99E-06	1.49E-05	1	506	5.97	142
AF--VLV-OC---003	2.99E-06	1.49E-05	1	507	5.97	143
SA--K---FR-0003B	1.47E-03	1.47E-05	1	508	1.01	514
IA--K---FR-0002B	1.47E-03	1.47E-05	1	509	1.01	515
SI--MOV-CC-0852B	1.26E-03	1.44E-05	1	510	1.01	516
SI--MOV-CC-0852A	1.26E-03	1.44E-05	1	511	1.01	517
416-X---LP--2X14	1.94E-05	1.43E-05	1	512	1.74	258
SW--MV--CC-00360	4.41E-04	1.41E-05	1	513	1.03	475
CS--MDP-FR-0025B	7.39E-03	1.41E-05	1	514	1	563
CS--MDP-FR-0025A	7.39E-03	1.41E-05	1	515	1	564
CS--MOV-CC-02190	6.29E-03	1.41E-05	1	516	1	565
CS--MOV-CC-02189	6.29E-03	1.41E-05	1	517	1	566
CC--MV--OO-00774	4.41E-04	1.38E-05	1	518	1.03	476
RH--MDP-FS-0010B	3.88E-04	1.38E-05	1	519	1.04	461

EVENT NAME	POINT EST.	F-V IMPORT	RISK RED	RRW Rank	RSK ACMT	RAW Rank
MS--SV--OO1-2011	3.14E-03	1.35E-05	1	520	1	567
MS--SV--OO1-2006	3.14E-03	1.35E-05	1	521	1	568
MS--SV--CC1-2010	1.03E-02	1.35E-05	1	522	1	569
MS--SV--CC1-2005	1.03E-02	1.35E-05	1	523	1	570
SA--F---PG-0035A	9.74E-05	1.34E-05	1	524	1.14	392
138-BKR-CO-H5220	7.61E-06	1.21E-05	1	525	2.59	213
138-BKR-CO-H5205	7.61E-06	1.21E-05	1	526	2.59	214
125-BS--LP---D13	2.40E-06	1.17E-05	1	527	5.88	145
VDG-W---CM---234	3.77E-05	1.07E-05	1	528	1.28	338
VDG-W---CM---123	3.77E-05	1.07E-05	1	529	1.28	339
HEP-480-AOP10C-5	5.00E-01	9.56E-06	1	530	1	571
SW--AOV-OC-0012A	3.86E-05	9.13E-06	1	531	1.24	345
FO--MDP-CM-0304-	3.22E-05	9.10E-06	1	532	1.28	340
SW--SOV-PG-02826	4.01E-05	9.07E-06	1	533	1.23	347
SW--SOV-OC-02826	4.01E-05	9.07E-06	1	534	1.23	348
SW--AOV-OC-02830	3.86E-05	8.74E-06	1	535	1.23	349
SI--MDP-FR-0015A	4.08E-04	8.65E-06	1	536	1.02	491
AF--MOV-CO--4022	1.85E-05	7.68E-06	1	537	1.42	311
AF--MOV-CO--4020	1.85E-05	7.68E-06	1	538	1.42	312
125-HEP-D305-D02	1.00E-03	7.13E-06	1	539	1.01	518
125-INV-LP--0D08	2.21E-04	7.13E-06	1	540	1.03	477
IA--AOV-CC-03048	5.50E-04	5.82E-06	1	541	1.01	519
IA--AOV-CC-03047	5.50E-04	5.82E-06	1	542	1.01	520
125-BAT-TM---D06	1.73E-02	5.79E-06	1	543	1	572
IA--K---FS-0002A	2.07E-03	5.06E-06	1	544	1	573
SW--SOV-CC-02826	2.05E-03	5.02E-06	1	545	1	574
AF--CKV-CO-1-106	1.20E-05	4.99E-06	1	546	1.42	313
AF--CKV-CO-1-107	1.20E-05	4.99E-06	1	547	1.42	314
480-BKR-CO15213C	7.61E-06	4.97E-06	1	548	1.65	274
480-BKR-CO-52391	7.61E-06	4.97E-06	1	549	1.65	275
SW--CKV-CC-HX50A	5.00E-05	4.72E-06	1	550	1.09	424
480-BKR-CO-5236C	7.61E-06	4.17E-06	1	551	1.55	291
416-BKR-CO2A5289	7.61E-06	4.17E-06	1	552	1.55	292
480-BKR-CO252391	7.61E-06	4.17E-06	1	553	1.55	293
480-BKR-CO25225B	7.61E-06	4.17E-06	1	554	1.55	294
416-BKR-CMCC7796	2.21E-05	3.86E-06	1	555	1.17	375
AF--HEP-RECIRC-1	2.50E-02	3.80E-06	1	556	1	575
416-BKR-CMOO3755	2.21E-05	3.74E-06	1	557	1.17	376
SI--VLV-RE-0878F	1.00E-03	3.71E-06	1	558	1	576
SI--VLV-RE-0878E	1.00E-03	3.71E-06	1	559	1	577

EVENT NAME	POINT EST.	F-V IMPORT	RISK RED	RRW Rank	RSK ACMT	RAW Rank
FLAG-BSI-BCL-INJ	1.00E+00	3.71E-06	1	560	1	578
FLAG-BSI-ACL-INJ	1.00E+00	3.71E-06	1	561	1	579
SI--MOV-CM-852AB	2.64E-05	3.68E-06	1	562	1.14	393
ESF-BIS-FT-0141B	3.00E-07	3.66E-06	1	563	13.2	97
ESF-BIS-FT-112AB	3.00E-07	3.66E-06	1	564	13.2	98
IA--CKV-OO-00281	1.00E-03	3.45E-06	1	565	1	580
IA--CKV-OO-00282	1.00E-03	3.45E-06	1	566	1	581
IA--T---RP-0033C	1.20E-05	3.45E-06	1	567	1.29	336
IA--T---RP-0033B	1.20E-05	3.45E-06	1	568	1.29	337
COREUNCOVER-4HR	9.00E-04	3.40E-06	1	569	1	582
SA--CKV-CM-13839	2.35E-06	3.32E-06	1	570	2.41	230
416-X---LP--1X12	1.94E-05	3.29E-06	1	571	1.17	377
CV--F---PG-000F3	9.74E-05	3.23E-06	1	572	1.03	478
IA--HX--IL-0049A	2.40E-05	3.17E-06	1	573	1.13	399
480-BKR-CO15223A	7.61E-06	3.16E-06	1	574	1.42	315
125-BKR-CO-D1129	7.61E-06	3.16E-06	1	575	1.42	316
125-BKR-CO-D01-8	7.61E-06	3.16E-06	1	576	1.42	317
125-BKR-CO-D1330	7.61E-06	3.16E-06	1	577	1.42	318
480-BKR-CO25231B	7.61E-06	3.16E-06	1	578	1.42	319
125-BKR-CO-D1903	7.61E-06	3.16E-06	1	579	1.42	320
125-BKR-CO-D1703	7.61E-06	3.16E-06	1	580	1.42	321
AF--CKV-CM1XX1-3	7.03E-05	3.15E-06	1	581	1.04	462
SW--CKV-CM-CC-AF	3.26E-06	2.98E-06	1	582	1.91	246
CS--MDP-CM-R28AB	1.74E-05	2.95E-06	1	583	1.17	378
416-BKR-OO1A5280	5.73E-04	2.92E-06	1	584	1.01	521
416-BKR-OO1A5286	5.73E-04	2.92E-06	1	585	1.01	522
CV--MDP-CM-P4A4B	8.50E-05	2.81E-06	1	586	1.03	479

NRC Question:

d. A containment matrix describing the mapping of Level 1 results into the various accident sequences/release categories.

NMC Response:

This question is addressed in the NRC response to RAI 1.e.

NRC Question:

e. A description of the accident sequences used to represent each of the accident sequences/release categories shown in Table F.1-2, and a description of the methodology and criteria for binning endstates into the accident sequences/release categories shown in Table F.1-2 and used in the current Level 3 analysis.

NMC Response:

Table 4.7-2 (PBNP IPE) lists the Plant Damage States (PDSs) and the PDS tree characteristic sequences analyzed with MAAP. The PDS trees are included in Section 3.1.5 of the IPE. The sequences analyzed are described in Section 4.7.5. Important assumptions for the MAAP calculations are also outlined in Section 4.7.5. Source term calculation results are given in Section 4.7.6 and are summarized in Table 4.7-4 for each analyzed sequence. Only sequences in which the containment is bypassed or containment isolation has failed were found to have volatile release fractions greater than 1.E-04. Based on these results, the bypass source term categories of EARLY SGTR, LATE SGTR, ISLOCA, and ISOLATION FAILURE were defined. A further category, OTHER was defined to contain all other core melt sequences. Core damage sequences were assigned to these five classes based on initiator type for the first four or by default to the fifth one. These classes defined the input source terms for the MACCS2 consequence calculations. As a result of the use of the IPE Level 2 model in this manner, the containment matrix is not informative since it merely indicates the one-one correspondence of the five initiator groupings with the five similarly named source term categories.

The EARLY SGTR source term is from modeled sequence data for R16 in Table 4.7-4 augmented by data from an available MAAP run, RA-E5, for data not listed in the Table. The LATE SGTR source term was similarly based on sequence R4 augmented by MAAP run RA-E6C. No analysis was available for the ISLOCA case. For conservatism, the ISLOCA consequences were assumed to be six times larger than the early SGTR values (note that the early SGTR is the largest release listed in Table 4.7-4.) The ISOLATION FAILURE is based on

sequence AO2 of Table 4.7-4 augmented by MAAP run AFAL4-2. The OTHER class is based on MAAP run SB-HTLG1 for which the releases bound the non-bypass values listed for the other sequences in Table 4.7-4.

NRC Question:

2. In Section F.2.2, the CDF for internal events is given as 3.6×10^{-5} and the CDF for internal fires, seismic events, and internal flooding are given as, 1.2×10^{-5}, 1.3×10^{-6}, and 1.1×10^{-5} respectively. These internal fires, flooding and seismic CDFs, and the individual plant examination of external events (IPEEE) models, were not used in the identification and screening of SAMAs.

   Provide the following information:

   a. NUREG-1742 ("Perspectives Gained from the IPEEE Program," Final Report, April 2002), lists the significant fire area CDFs for PBNP (Page 3-24 of Volume 2). For each fire area, explain those measures that were taken to further reduce the CDF, and explain why these CDFs cannot be further reduced in a cost effective manner.

NMC Response:

NUREG-1742 ("Perspectives Gained from the IPEEE Program," Final Report, April 2002), lists the significant fire area CDFs for PBNP (Page 3-24 of Volume 2) as shown below. For each fire area, descriptions of risk-reduction measures taken to date are described below. No specific calculations have been performed to determine the new fire related CDF. Each fire area is discussed based on insights from the base PRA (internal events) and the evaluations made for other SAMAs.

Fire Area	CDF
Gas Turbine Room/Hall/Building	2.04E-05
Diesel Generator Room G02	5.84E-06
Diesel Generator Room G01	5.52E-06
Monitor Tank Room Auxiliary Operator's Station	4.95E-06
Main Control Room/Control Room	4.58E-06
Switchgear Room	3.70E-06
Cable Spreading Room	2.68E-06
Switchgear Room	2.51E-06
MCC 2B032 Room Outside Charging Pump Rooms	1.07E-06
Electrical Equipment Room/Auxiliary Relay Room	3E-07

Compartment 681 Gas Turbine Building
Two additional diesel generators have been installed. This greatly reduced the importance of the gas turbine. No further action is necessary.

Compartment 309 Diesel Generator Room G02
Two additional diesel generators have been installed. This greatly reduced the importance of an individual diesel generator. No further action is necessary.

Compartment 308 Diesel Generator Room G01
Two additional diesel generators have been installed. This greatly reduced the importance of an individual diesel generator. No further action is necessary.

Compartment 187 Monitor Tank Room Auxiliary Operator's Station
This area has a high fire initiating event frequency because of the large number of cables routed in this compartment and the number of adjacent compartments. There is automatic detection but no automatic suppression in this compartment. A fire in this area affects MSIVs, atmospheric steam dumps, auto start on 2/3 AFW pumps and the pressurizer PORVs. Plant personnel are trained on this particular area because it is a high-risk fire area. Operating crews are routinely trained on the procedures for controlling the plant using alternate shutdown locations. No other actions have been identified.

Compartment 326 Control Room
The risk in this area is dominated by failure of the operators to properly control the plant from outside the control room. The procedures and training for these tasks have been revised and enhanced. No further action is necessary.

Compartment 319 Non-Vital Switchgear Room
The IPEEE identified that a fire in this area would disable undervoltage auto start circuit for all auxiliary feedwater pumps. A modification has been installed to correct this condition. No further action is necessary.

Compartment 318 Cable Spreading Room
The IPEEE analysis of this area determined that the risk was dominated by the oil in oil-filled transformers spreading out over the entire zone thus impacting a large number of cables. It has since been determined that the particular oil used in these transformers is not combustible. Therefore, the risk due to fire spreading from the oil does not exist. No further action is necessary.

Compartment 305 Vital Switchgear Room
Two additional diesel generators with their own switchgear have been installed. This greatly reduced the importance of an individual diesel generator or vital bus. No further action is necessary.

Compartment 166 MCC 2B-32 Room Outside Unit 2 Charging Pump Rooms
The PRA model has been refined to add additional recovery actions that can be performed, given a failure of LCV-112B. This has reduced the importance of the valve failure. Evaluation of SAMAs related to RCP seal LOCA indicate a benefit of $13K. This demonstrates the low impact of RCP seal LOCA events based on the current PRA model. No further action is necessary.

Compartment 156 MCC 1B-32 Room Outside Unit 1 Charging Pump Rooms
The PRA model has been refined to add additional recovery actions that can be performed, given a failure of LCV-112B. This has reduced the importance of the valve failure. Evaluation of SAMAs related to RCP seal LOCA indicate a benefit of $13K. This demonstrates the low impact of RCP seal LOCA events based on the current PRA model. No further action is necessary.

Compartment 245 Unit 1 Electrical Equipment Room
The IPEEE analysis of this area determined that the risk was dominated by the oil in oil-filled transformers spreading out over the entire zone. It has since been determined that the particular oil used in these transformers is not combustible. Therefore, the risk due to fire spreading from the oil does not exist. No further action is necessary.

Compartment 246 Unit 2 Electrical Equipment Room
The IPEEE analysis of this area determined that the risk was dominated by the oil in oil-filled transformers spreading out over the entire zone. It has since been determined that the particular oil used in these transformers is not combustible. Therefore, the risk due to fire spreading from the oil does not exist. No further action is necessary.

NRC Question:

b. Identify those SAMAs from Table F.2-2 that could provide a significant risk benefit in the important internal fires, flooding and seismic events at PBNP. For each of these SAMAs, provide an estimate of the collective (internal and external event) benefit that these SAMAs would provide in the respective events.

NMC Response:

SAMAs for fire events are discussed in the response to RAI 2.a above.

Five seismic risk contributors were identified in the IPEEE, cable tray supports, 4kV transformers, 480V load centers, block walls, and surrogate elements. The cable tray supports have been modified to eliminate the concern. 480V load centers have been reanchored to eliminate the concern. The 4kv transformer issue has been mitigated by the addition of the third and fourth diesel generator

and switchgear. Other seismic issues have been addressed through changes in the procedures for use of remote shutdown equipment. The operator training addresses the use of the remote shutdown procedures and also the use of service water as a backup suction source for the AFW pumps. No further actions for seismic events are necessary.

There are no external flooding conditions of concern for Point Beach.

There are two internal flooding scenarios of concern at Point Beach. The first involves an auxiliary building flood due to firewater or service water pipe rupture. The second is an intake structure flood due to a rupture of a circulating water pipe expansion joint.

The following SAMAs are applicable to the auxiliary building flood: 71, 72, 119, 137, 142, 158, 181, and 190. SAMAs 71, 72, and 158 are estimated to cost more than the maximum attainable benefit. SAMAs 119, 137, and 142 are estimated to have a cost much greater than the benefit. SAMAs 181 and 190 are procedural improvements that have already been implemented.

The following SAMAs are applicable to the intake structure flood: 71, 72, 119, 137, 142, 177, and 189. SAMAs 71 and 72 are estimated to cost more than the maximum attainable benefit. SAMAs 119, 137, 142, and 177 are estimated to have a cost much greater than the benefit. SAMA 189 is a procedural improvement that has already been implemented.

Table F.2-2 of the ER provides the estimates of the benefits for the SAMAs discussed in the previous paragraphs, including our estimate of the impact of external events.

NRC Question:

3. According to Table F.2-1, NMC evaluated 202 SAMA candidates. As a result of initial screening, 137 SAMA candidates were eliminated, thereby leaving 65 SAMA candidates subject to the final evaluation process. It is not evident that the set of 65 SAMAs evaluated in the environmental report (ER) addresses the major risk contributors for PBNP.

   For each dominant contributor identified in the most current PRA (using, for example, Importance Measures), provide a cross-reference to the SAMAs evaluated in the ER which addresses that contributor. If a SAMA was not evaluated for a dominant risk contributor, provide the rationale to justify why SAMAs to reduce these contributors would not be cost beneficial.

NMC Response:

In addition to the industry sources, plant specific sources were also reviewed. The PBNP IPE and IPEEE were examined to determine whether any additional plant specific improvements were identified, however, there were none. The Point Beach plant staff provided several plant specific items that were included in the evaluation. Finally, the top 100 cutsets of the 1 PRA update and the basic events having the greatest potential for risk reduction were examined to determine whether additional SAMAs could be identified from these sources.

Use of Importance Measures

Risk reduction worth (RRW) of the basic events in the baseline model was used to identify those basic events that could have a significant potential for reducing risk. The approach taken was to determine the RRW that would correspond to a $30,000 benefit, if all the benefit were associated with a single containment event tree end state. Each CET end state was examined and the lowest RRW was selected to determine the list of important basic events to consider as SAMA candidates. Attachment 1 contains a listing of the basic event importances, with respect to CDF, for all basic events having RRW >1.01.

Use of the Top 100 Cutsets

After identifying the important basic events from the RRW approach described above, the top 100 cutsets were examined to determine whether they were addressed. Nearly all the top 100 cutsets were directly addressed by the important basic events. Those that were not addressed directly were examined separately and found to be either addressed by existing SAMA cases or small contributors to CDF. The top 100 cutsets constitute 67% of the internal events CDF.

From this process SAMAs 180-202 were identified. Table F.2.1 describes these SAMAs and describes the dominant contributors related to each.

NRC Question:

4. According to Section 4.20.3, the SAMA analysis was performed based on a single unit implementation. It is not evident which SAMAs would benefit both units, and how the single-unit cost for such SAMAs were estimated (i.e., were the implementation costs divided by 2 to arrive at the single unit implementation costs?). Provide a list of those SAMAs (both procedural and hardware based) where both units would benefit, and confirm that the reported costs and benefits were developed on a consistent basis (i.e., a single-unit basis).

NMC Response:

There are several situations related to benefits/costs associated with modifications at a multiple unit station.

- A hardware-related SAMA that affects only the systems in one unit but is applicable to both units: In this case, the benefit calculated is the same for both units. The cost at PBNP for the installation at two units is expected to be twice that for one. Therefore, the cost/benefit for each unit is the same as was calculated.
- A hardware-related SAMA that affects systems in both units: In this case the benefit to both units is expected to be the same as is calculated for one unit. The hardware cost, however, is expected to be incurred only once, but other modification-related costs that are unit specific, are still applicable to each unit. The net result is that the cost per unit is lower that for a similar installation at a single-unit station but the costs are not simply halved. It would be conservative to consider the cost per unit to be half the estimate and the cost-benefit ratio to be half that shown on the following table for each unit.
- A procedure-related SAMA that is applicable to systems in both units: Procedure related changes are written once, adapted to the other unit and all crews must have training. The benefit to each unit is expected to be the same as that calculated for one unit. Costs for the second unit are expected to be less than for the first but not negligible. It would be conservative to consider the cost per unit to be half the estimate and the cost-benefit ratio to be half that shown on the following table for each unit.

The following table identifies and describes those SAMAs that would be expected to affect both units. The costs were estimated based upon implementation at one unit, even for those cases in which the other unit would benefit. The benefits were calculated for one unit, even for those cases in which the other unit would benefit from the same SAMA.

RAI 10.d discusses the benefit calculations associated with HEPs. It is assumed that further refinements in PBNP procedures will not yield improvement in human error probabilities and the benefit associated with the human actions does not justify fully automating the actions. Procedure related changes have been implemented for cost beneficial SAMAs.

The cost-benefit of the hardware-related SAMAs is considered next. If the cost/benefit exceeds 2.0 and the cost per unit is considered to be conservatively calculated by halving the cost provided in the following table, the SAMA is still not cost-beneficial. SAMAs 142, 166 and 169, therefore, warrant further examination since a benefit calculation was not done for 142 and 166 and because the

cost/benefit calculation for 169 is shown to be 2. The other hardware related SAMAs have cost-benefit ratios that are so large as to not approach 2, even if the cost were reduced by a factor of 2 to represent equal cost sharing between the two units.

SAMA 142: This SAMA was initially examined from the perspective of comparing its cost to the benefit of totally eliminating all RCP seal LOCA contribution to CDF. The benefit of eliminating RCP Seal LOCA was determined to be <$14,000. The cost of this SAMA would be very high, estimated at >$1000K. Therefore, considering the cost to be shared between the units does not change the decision that this SAMA is not cost-beneficial.

SAMA 166: This SAMA was judged to be not cost beneficial by the expert panel because of the high cost and expected low benefit. Currently PBNP already has two CSTs that are shared by Units 1 and 2. PBNP also is equipped with a backup AFW suction connection to service water and to emergency CST makeup from the firewater system. Although a quantitative assessment of benefit was not performed, it was obvious that the benefit is low even considering its applicability to both units.

SAMA 169: This SAMA is the closest to being cost beneficial considering applicability to both units. The expert panel estimated the cost of implementing this SAMA to be in excess of $200K. The analysis of the benefit of this SAMA was calculated very conservatively, thereby overestimating the benefit of this modification. This SAMA provides a portable generator to supply DC power to the auxiliary feedwater system in the event of station blackout. The analysis of the benefit was performed assuming a perfect DC supply to AFW (accomplished by removing the DC dependency from the system). This approach is obviously very conservative considering that this SAMA would supply DC power from a manually operated, manually connected portable generator. The failure potentials associated with the portable supply are much less than perfect so the actual benefit is less than that calculated. The cost-benefit ratio is, therefore, actually greater than two and consideration of the other unit does not change the decision that this SAMA is not cost beneficial.

Point Beach SAMA Number	Potential Improvement	Discussion	Benefit with internal and external	Estimated Cost	Cost/ Benefit (with externals)
Human Error Related SAMAs					
98	Improvement of operator training on ISLOCA coping.	Decrease ISLOCA effects.	$13,628	>$50K (EP)	3.7
100	Revise EOPs to improve ISLOCA identification.	Salem had a scenario in which an RHR ISLOCA could direct initial leakage back to the PRT, giving indication that the LOCA was inside containment. Procedure enhancement would ensure LOCA outside containment would be observed.	$13,628	>$30K (EP)	2.2
151	Make procedural changes only for the RCS depressurization option.	Reduce RCS pressure without cost of a new system.	$305,873	Not Determined (EP)	
181	Provide procedural improvements and training to improve operator performance for the task of feed and bleed cooling without SI.	Reduce operator errors and their contribution to total plant risk.	$102,622	Not Determined (EP)	
184	Provide procedural improvements and training to improve operator performance for the task of manually controlling AFW following loss of instrument air.	Reduce operator errors and their contribution to total plant risk.	$23,104	~$30K	1.3

Point Beach SAMA Number	Potential Improvement	Discussion	Benefit with internal and external	Estimated Cost	Cost/ Benefit (with externals)
185	Provide procedural improvements and training to improve operator performance for the task of providing an alternate source of water for AFW following low CST level.	Reduce operator errors and their contribution to total plant risk.	$178,528	~$30K	0.2
186	Provide procedural improvements and training to improve operator performance for the task of manually starting the gas turbine generator.	Reduce operator errors and their contribution to total plant risk.	$22,492	~$30K	1.3
187	Provide procedural improvements and training to improve operator performance for the task of opening valve CV-112B (RWST - charging).	Reduce operator errors and their contribution to total plant risk.	$83,044	~$30K	0.4
188	Provide procedural improvements and training to improve operator performance for the task of diagnosing steam generator tube rupture.	Reduce operator errors and their contribution to total plant risk.	$36,885	~$30K	0.8
189	Provide procedural improvements and training to improve operator performance for the task of feed and bleed cooling with SI.	Reduce operator errors and their contribution to total plant risk.	$25,527	~$30K	1.2
190	Provide procedural improvements and training to improve operator performance for the task of isolating a service water header rupture.	Reduce operator errors and their contribution to total plant risk.	$14,422	Not Determined (EP)	

Point Beach SAMA Number	Potential Improvement	Discussion	Benefit with internal and external	Estimated Cost	Cost/ Benefit (with externals)
191	Provide procedural improvements and training to improve operator performance for the task of opening the instrument air valves to containment.	Reduce operator errors and their contribution to total plant risk. This item and #193 are an action/recovery pair.	$23,101	~$30K	1.3
192	Provide procedural improvements and training to improve operator performance for the task of opening/reopening air system valves 3047 or 3048.	Reduce operator errors and their contribution to total plant risk. This item and #192 are an action/recovery pair.	$22,472	~$30K	1.3
193	Provide procedural improvements and training to improve operator performance for the task of opening valve SW-2880 following an SI signal.	Reduce operator errors and their contribution to total plant risk.	$19,448	~$30K	1.5
Hardware Related SAMAs					
4	Install tornado protection on gas turbine generator.	If the unit has a gas turbine, the tornado-induced SBO frequency would be reduced.	$181,416	>$1000K (EP)	5.5
62	Provide additional DC battery capability.	Would ensure longer battery capability during a SBO, reducing frequency of long term SBO sequences.	$15.1K	>$150K (EP)	9.9
93	Provide Auxiliary Building Vent/Seal structure.	Enhance ventilation in AB.	$13.6K	>$200K (EP)	14.7

Point Beach SAMA Number	Potential Improvement	Discussion	Benefit with internal and external	Estimated Cost	Cost/ Benefit (with externals)
119	Create an independent RCP seal injection system, with dedicated diesel.	Would add redundancy to RCP seal cooling alternatives, reducing CDF from loss of CCW, SW or SBO.	$13K	>$1000K (EP)	76.9
137	Provide an additional high pressure injection pump with independent diesel.	Reduce frequency of core melt from small LOCA sequences, and from SBO sequences.	$4,151	>$1000K (EP)	241.2
138	Install independent AC high pressure injection system.	Would allow make up and feed and bleed capabilities during a SBO.	$4,151	>$1000K (EP)	241.2
142	Use firewater pumps as a backup seal injection and high-pressure makeup.	Reduce RCP seal LOCA frequency and SBO core damage frequency.		>$1000K (EP)	
148	Install nitrogen bottles as backup gas supply for SRVs.	Extend operation of Safety Relief Valves during SBO and loss of air events (BWRs).	$0	>$100K (EP)	Very large
166	Install a new CST (AFWST).	Either replace old tank with a larger one, or install a backup tank.		>$1000K (EP)	
169	Provide portable generators to be hooked in to the turbine driven AFW, after battery depletion.	Extend AFW availability in a SBO (assuming the turbine-driven AFW requires DC power).	$98,531	>$200K (EP)	2.0

Point Beach SAMA Number	Potential Improvement	Discussion	Benefit with internal and external	Estimated Cost	Cost/ Benefit (with externals)
177	Provide additional SW pump.	Providing another pump would decrease core damage frequency due to a loss of SW.	$6,652	>$5000K (EP)	752.3
195	Improve running reliability of Motor Driven AFW Pumps. AF—MDP-FR---38A, AF—MDP-FR---38B	Reduce risk through improving the reliability of the motor driven AFW pumps	$159.7K	>$1000K (EP)	6.3
197	Reduce likelihood of Check valve in recirc line from AFW pumps to CSTs failing to open. AF—CKV-CC---117	Reduce risk through improving the reliability of check valve in AFW recirc line to CSTs	$18.3K	>$22K	Implemented in 2002 by removal of valve internals.

NRC Question:

5. The list of references used to develop the candidate SAMAs for PBNP includes SAMAs from certain site-specific analyses (e.g., Watts Bar and Limerick) and design-specific analyses (e.g., CE System 80+), but it specifically does not enumerate which are identified from ERs from other plants seeking license renewal (see, pg. F-14). Provide the references for the other SAMA analyses that were considered and identify the SAMAs resulting from this review that were included in the PBNP analysis.

NMC Response:

The SAMAs that have been identified for consideration come from a variety of industry sources; the set of SAMAs considered is provided in Table F.2-1 in the Environmental Report. At the end of this table is a list of the source documents from which the SAMAs were derived; as discussed below, these sources did not include other SAMA evaluations.

In addition to the industry sources, plant specific sources were also reviewed. The PBNP IPE and IPEEE were examined to determine whether any additional plant specific improvements were identified, however, there were none. The Point Beach plant staff provided several plant specific items that were included in the evaluation. Finally, the top 100 cutsets of the level 1 PRA update and the basic events having the greatest potential for risk reduction were examined to determine whether additional SAMAs could be identified from these sources.

Use of Importance Measures

Risk reduction worth (RRW) of the basic events in the baseline model was used to identify those basic events that could have a significant potential for reducing risk. The approach taken was to determine the RRW that would correspond to a $30,000 benefit, if all the benefit were associated with a single containment event tree end state. Each CET end state was examined and the lowest RRW was selected to determine the list of important basic events to consider as SAMA candidates. Attachment 1 contains a listing of the basic event importances, with respect to CDF, for all basic events having RRW >1.01.

Use of the Top 100 Cutsets

After identifying the important basic events from the RRW approach described above, the top 100 cutsets were examined to determine whether they were addressed. Nearly all the top 100 cutsets were directly addressed by the important basic events. Those that were not

addressed directly were examined separately and found to be either addressed by existing SAMA cases or small contributors to CDF. The top 100 cutsets constitute 67% of the internal events CDF.

Since the IPEEE was based on a screening analysis approach, no cutsets were available for a similar type of assessment. It is believed, however, that some of the improvements evaluated would reduce the risk contribution from external events. No new improvement is assumed to be beneficial beyond current Appendix R or other regulations governing external events. Shutdown related improvements are not addressed explicitly. However, SAMAs that affect structures, systems, and components that may enhance mitigative functions during both at-power and shutdown conditions are addressed.

Consideration of the industry issues and consideration of the items that drive risk at Point Beach appropriately identified the set of SAMA candidates potentially impacting Point Beach. If the issues important to other plants are also important to Point Beach, the importance approach to SAMA selection used in the candidate selection process would identify those issues. If issues important to other plants are not important to Point Beach, then there would be no benefit in considering them and they would be eliminated by the evaluation process.

NRC Question:

6. For certain SAMAs considered in the ER, there may be lower-cost alternatives that could achieve much of the risk reduction at a lower cost. For the subset of plant-specific SAMAs identified Table F.2-2, identify any lower-cost alternatives to those considered in the ER and whether they would be viable and cost-beneficial. Specifically include consideration of the candidate SAMAs found to be cost-beneficial, for example, those identified in the recent SAMA reviews for Ft. Calhoun, R.E. Ginna, and D.C. Cook.

NMC Response:

Searching for lower-cost alternatives to issues is routinely practiced at PBNP. There have been many instances of implementation of low cost alternatives as a means of attaining a goal at a reduced cost, some of which have proven to be successful and some of which proved to be less beneficial than they appeared at implementation. For example, several years ago it was decided that as a backup power supply for a component, a portable generator could suffice. The generator was obtained and implemented as a backup but proved to be of inadequate reliability for the application; this "low cost alternative" had to be replaced with a hard-wired power supply.

However, as an example of a successful implementation of a low cost alternative, consider SAMA 197. This SAMA was identified from the review of important contributors to the CDF of PBNP from the PRA results input to this analysis. This SAMA related to the impact of potential failures of a check valve in the AFW system recirculation line. Rather than attempting to improve the reliability through replacement, redundancy and/or continued maintenance, which would have been very costly, the necessity for the valve was investigated and it was found to be unnecessary. A change was processed to remove the internals from the check valve, again as a lower cost alternative to removing the valve.

As a general practice in assessment of the list of SAMAs and because of the approach taken of examining the industry enhancement suggestions and the risk-important plant specific issues from the PRA, PBNP did not feel it necessary to examine each of the candidates from the industry for lower cost approaches to achieving some portion of the full benefit potential of each candidate. Examining the important contributors to the CDF of PBNP accomplishes this objective. This is exemplified by considering SAMA 161, 162 and 164. These SAMAs deal with improving the reliability of the AFW system and came from the industry list of potential power plant enhancements. SAMA 164 deals with the addition of AFW pump redundancy, a very costly alternative. Rather than looking for low cost alternatives to SAMA 164, the PRA was relied upon to provide plant-specific issues that could be considered relating to improving the availability of the AFW system (e.g., SAMA 197, discussed above). It could, therefore, be concluded that low cost alternatives were sought, but indirectly through the identification of plant specific risk reduction opportunities identified by the PRA results. Other SAMA analyses were not reviewed as a source of candidates. Candidates coinciding with those from other plants would have been identified and considered in our assessment process, if found to be important contributors to CDF of PBNP.

NRC Question:

7. SAMA candidates were considered potentially cost-beneficial if the cost of implementation was estimated to be less than two times the calculated benefit. The risk reduction benefit was assumed to be two times the calculated benefit from internal risk reduction to account for external events. This factor of two is not a universal substitute for consideration of external events.

   Provide the rationale to demonstrate that the adjustment is sufficient to encompass the collective impact of several potentially non-conservative assumptions in the baseline analysis, and the added impact of uncertainties in the analysis on the SAMA evaluation process and results. Include the following in the discussion:

a. A list and brief description of non-conservative (and conservative) assumptions used in the baseline benefit calculation, an estimate of the impact on the calculated benefit, and an assessment of how the results of the final screening of SAMAs would change. Examples identified by the staff that should be addressed in the response include:

   i. The total bounding benefit estimated for each of the SAMAs only accounts for the benefits obtained during the 20 year period of the proposed life extension. This could underestimate the total benefit by 10-15 percent since each PBNP unit has more than 5 years of operation remaining on its existing license.

NMC Response:

Underestimation of SAMA benefit by 10-15 percent would not impact the decisions made on whether any SAMA was cost-beneficial. The cost benefit ratio of the SAMAs evaluated were much larger than would be impacted by a 10-15 percent increase in benefit.

Of all the SAMAs for which cost-benefit analyses were performed, only two evaluated SAMAs related to hardware resulted in cost-benefit ratios of less than 2. The conservatively determined cost-benefit ratios of these were 1.2 and 1.7. The lower of these (SAMA 197) involved a check valve whose failure to open was important; the internals of this check valve were removed to eliminate the potential failure mechanism. The other item (SAMA 180) suggests implementing automatic re-powering of battery chargers following loss of offsite power which currently must be accomplished manually. The benefit was bounded by assuming perfect accomplishment of this manual action (by setting the failure rate of the manual action to zero). This bounding analysis also bounds the reliability of an automatic system to re-power the chargers. An automatic system would be to have some failure rate so the benefit would be less than that calculated and the actual cost benefit ratio would be greater that 1.7. Therefore, the 10-15 percent underestimation of benefit due to the time remaining in the current license would not impact the decision relating to this SAMA.

Several human actions resulted in calculated cost-benefit ratios of less than 2. As discussed in the response to RAI 10.d, procedure changes were implemented for these actions to optimize the operator response and to minimize the human error probability. Automated systems to replace the operator actions would increase the costs greatly and also the cost-benefit ratios.

NRC Question:

ii. Sensitivity analyses performed as part of previous SAMA evaluations for MACCS2 inputs such as evacuation and population assumptions could yield variations in population dose of as much as 20 percent.

NMC Response:

The effects of uncertainties in estimating offsite benefits are small and are not specifically calculated because of both the small absolute present value of the basis offsite costs and the small fraction that they contribute to the total costs. A hypothetical example is presented below to illustrate this situation. The estimated present value equivalents for severe accidents at PBNP (Internal) are presented in Table 4-4 of the PBNP Environmental Report. The offsite costs are seen to be 10% of the total value of $673,180. Making the assumption that the offsite costs are twice those estimated would increase the total by only 10%, i.e., to $740,740 from $673,180. The effect of this assumed much larger offsite cost basis on estimating SAMA benefits would be the same, an increase of 10% in potential benefits. This is far less than the margin between benefits and costs estimated for any of the SAMAs analyzed and would not result in any SAMA becoming cost beneficial.

An uncertainty of 100% in the offsite cost basis is far larger than would occur through bounding estimates of annual meteorology variations, population projections, evacuation effectiveness estimates, or core inventory increases due to extended burnup effects. Thus, no offsite sensitivity studies were or are considered necessary, as their results would be bounded by the above example.

NRC Question:

iii. The use of a reference pressurized water reactor (PWR) inventory scaled only for power (as opposed to a bounding operating cycle), could result in a significant underestimate of the fission product inventory of important long-lived radionuclides that dominate population dose (e.g., an underestimate of about 50 percent for Sr-90 and Cs-137) (See RAI #8b).

NMC Response:

PBNP has recently generated a listing of calculated fission product activities to be used in alternate source term calculations (Ref.: Computer Output File REAC-WEP-186 Part 1 of 17 associated with calculation

REAC-WEP-186, Rev. 0). These core total fission product activities are based on 102% of the uprated power of 1650 MWt. The core analyzed is composed of fuel of various enrichments from 4.40% to 4.95% and burnups ranging from 20,000 MWD/MTU to 64,000 MWD/MTU. The cycle burnup is 17,000 MWD/MTU (18 month equilibrium cycle). An examination of this data set shows the ratios of the activities of the various fission product radionuclides in this set compared to values used in the MACCS2 calculations to range from 0.9 to 2.0. (This bound does not consider the non-volatile actinides and one isotope with a relatively low inventory, Rb-86).

Conservatively doubling all the radioisotope inventories, from the values used in the reported MACCS2 analyses, would bound the radionuclide increases due to the extended cycle and the power upgrade. The offsite economic costs and the offsite population doses would then increase by about the same factor of 2 with this increase in inventory, all else remaining unchanged, as the offsite consequence effects are essentially linear with the release magnitude. This postulated limiting offsite consequence increase of 100% would lead to an increase of 10% in the total, as shown in the response to RAI 7.a.ii. This is well within the margin used to screen out the various SAMAs.

NRC Question:

b. The SAMA analysis did not include an assessment of the impact of PRA uncertainties. Provide the following information to address these concerns:

   i. An estimate of the uncertainties associated with the calculated core damage frequency (e.g., the mean and median internal events CDF estimates and the 5th and 95th percentile values of the uncertainty distribution).

NMC Response:

The uncertainty analysis results from the PBNP Version 3.02 model are as follows:

Point Estimate Mean Value	3.62E-05
5th Percentile Value	1.58E-05
Median Value	3.09E-05
95th Percentile Value	7.21E-05
95th/Point Estimate Ratio	1.99

NRC Question:

ii. An assessment of the impact on the final evaluation if risk reduction estimates are increased to account for uncertainties in the risk assessment. Consider the uncertainties due to both the averted cost-risk and the cost of implementation to determine changes in the net value for these SAMAs.

NMC Response:

As is seen in the response to RAI 7.b.i, the ratio of the 95th percentile CDF value and the point estimate CDF value is 1.99. It is assumed that this ratio holds through the Level 2 analysis. An examination of the cost/benefit ratios of the SAMAs for which these analyses were performed yields those for which this ratio is 2 or less; these are included in the following table.

SAMA	Cost/Benefit Ratio	Analysis Case
126	1.9	SWAP2
169	2.0	AFWDC
180	1.7	DC1
184	1.3	HEP33
185	0.2	HEP43
186	1.3	HEP53
187	0.4	HEP63
188	0.8	HEP73
189	1.2	HEP83
191	1.3	HEPA3
192	1.3	HEPB3
193	1.5	HEPC3
197	1.2	AF117

Those SAMAs related to human error probabilities (HEPs), items 184-193 in the table, are discussed in detail in the response to RAI 10.d. Based upon that discussion, no further improvement is feasible short of fully automating these actions, and that greatly increases the cost. These items are, therefore, not affected by consideration of an increase in the benefit of a factor of 2 to correspond to the 95th percentile of the CDF uncertainty.

SAMA 126 is shown to have a cost benefit ratio of 1.9 based upon an estimated cost of $1000k. Since the expert panel meeting at which the estimated cost of "greater than $1,000,000" was provided, a detailed cost estimate for this modification was performed ("Safety Injection System Sump Auto-Swap Design Modification Cost Estimate", LR-TOP-902-ESF, Point Beach, February 2004).

The estimated cost of this modification was determined to be $2426K per unit. This detailed cost estimate increases the cost/benefit ratio far above 2.0; this SAMA is not cost beneficial, even considering CDF uncertainty.

The benefit evaluations for SAMAs 169 and 180 were performed as conservative bounding analyses. The modeling approach used to evaluate SAMA 169 assumed that the turbine driven AFW train dependence on DC power was totally eliminated. Actual implementation of SAMA 169 would not, however, completely eliminate this dependence; the new equipment would be subject to equipment failure and human error during operation. SAMA 180 was evaluated by assuming perfect operator response (zero failure rate) in reconnecting the battery chargers following a loss of offsite power. This is also extremely conservative since any automatic actuation system to connect the chargers would be subject to equipment and operational failures.

In both cases, the conservatism in the modeling approaches used to estimate the bounding benefits are felt to be greater than the uncertainties in the calculations. SAMAs 169 and 180 are not cost beneficial even considering the impact of uncertainty in the cost/benefit analysis.

SAMA 197 involved the impact of failures of a check valve in the AFW system. The potential for these failures have been eliminated. A low-cost approach was taken to eliminate the risk associated with these failures. Instead of removing the check valve, the internals were removed by a plant modification; this modification removed the potential for the valve failing to open at a low cost. Therefore, this SAMA has been effectively implemented.

Considering a factor of 2 increase in the maximum attainable benefit (MAB) changes its value from $1.4M to $2.8M. The MAB was considered as the benefit basis on which several SAMAs were eliminated from further consideration. These SAMAs are 71, 72, 158, 166 and 176. This decision would not be affected by considering the larger MAB for SAMAs 71, 72, 158 and 176 due to the high cost of these items. SAMA 166 may not screen out on the basis of the larger MAB. However, this SAMA involves the installation of another condensate storage tank as a source of additional AFW. At PBNP, the benefit of this SAMA is actually expected to be much smaller than the MAB because of the existing redundancy of AFW supplies (other unit CST, service water, and firewater refill of the depleted).

Therefore, the current SAMA evaluations would not be impacted should the CDF be as high as 95th percentile of the CDF distribution.

NRC Question:

8. Provide the following information concerning the MELCOR Accident Consequences Code System (MACCS2) analyses:

   a. The discussion of meteorological data used in the analysis indicates that data for year 2000 were obtained from Point Beach NP (October to December) and Kewaunee NP (January to September), 3.6 miles north of PBNP. Please explain why a continuous year of data was not used for the analysis. Confirm that there were no significant gaps in time for the data sets (that the two data sets are continuous). Confirm that the 2000 meteorological data set is representative of the PBNP site and provide the rationale to justify its use, including the different stability typing schemes (i.e., sigma-theta and delta-T).

NMC Response:

The year 2000 was selected because that was the most recent year for which a full year of data were available. During the first three quarters of the year data from the Kewaunee Nuclear Plant meteorological system was used because the PBNP meteorological system was undergoing an upgrade to digital recorders and quality assurance acceptance testing and was unavailable. (NRC has approved the use of Kewaunee Nuclear Plant meteorological data for PBNP[1]). The PBNP data were available from September 10, 2000 through the end of the year. This arrangement yielded a data set with but a few missing values for wind speed, wind direction, temperature, and stability class. These missing values were filled in with data from temporally adjacent valid readings. Hourly precipitation data, a MACCS2 required parameter, was obtained from the Sheboygan, WI airport monitoring station and merged into the synthesized data set.

The MACCS2 model is relatively insensitive to the meteorological data, so the selection of a meteorological data set is not a critical factor for the analysis. Since the MACCS2 model will not run without a data set that is complete and within specified numerical bounds, the fact that it did not "error out" is demonstration of the completeness of the input data set.

The synthesized 2000 data set was compared with PBNP onsite meteorological data from 1997-1999 to address the question of representativeness.

2000 Data: Stability Class

[1] See NRC to Wisconsin Electric Power Company SER number 50-266/83-25 and 50-301/83-23 dated February 2, 1984.

The frequency of occurrence of each stability class was computed for each season, as well as for each data year reviewed (the 2000 synthesized data set, and each of the years 1997-1999). The year 2000 stability class data comparison with 1997-1999 found 2000 to be somewhat different, with a general greater tendency toward more neutral classes (Classes "C" and "D"), and lower frequency of very stable and very unstable conditions. These differences are more pronounced for certain seasons (e.g., winter). The year 2000 seasonal stability class frequencies were outside the 1997-1999 ranges for 25 of 28 stability class-season combinations. Even on an annual basis, only two of the year 2000 stability class frequencies fell within the range of frequencies for 1997-1999.

While 2000 stability class frequencies are markedly different from the 1997-1999 data, it should be noted that there exists significant inter-annual variation within the 1997-1999 data set. Based on this review, it appears that stability class is a parameter that experiences considerable differences at PBNP from year to year.

2000 Data: Wind Speed, Direction
Wind speed and direction data were categorized into one of sixteen, 22.5 degree, wind direction sectors and one of seven wind speed classes, with one class defined for calm conditions. In contrast to stability class, the joint frequencies of occurrence of wind speed and direction combinations are fairly consistent from year to year.

While the 2000 joint frequency values often represent the extreme of the four years of observations, they rarely strayed more than a percentage point or two from the corresponding values for 1997-1999. In this respect, the 2000 wind data were found to be representative of the overall period of record.

Stability Class Indicator
The Kewaunee Nuclear Plant stability class values used in the synthesized 2000 data set were derived from sigma theta (standard deviation of wind direction) observations. The PBNP stability class data were based on differential temperature ("delta T" or lapse rate) measurements. Both of these techniques have traditionally been used to estimate stability class, an indirect indicator of atmospheric stability or, conversely, turbulence[2]. In the past, NRC has approved both methods for use at nuclear power plants, including PBNP.

Given that the use of either stability class has been approved for use at PBNP, using a data set that combines the approach should not bias the resulting dose assessment calculations. Dose modeling is not particularly sensitive to stability class inputs, much less the source of their derivation.

[2] See, for instance, NRC:NUREG/BR -0150, EPA 454/R-99-005, and Point Beach Nuclear Plant Emergency Plan Implementing Procedures, Revision 96 April 7,2003.

Results of the comparison to the PBNP onsite meteorological data from 1997-1999 indicate that the synthesized 2000 data set is representative of PBNP site conditions.

NRC Question:

b. The MACCS2 analysis uses a reference PWR core inventory at end-of-cycle calculated using ORIGIN. The ORIGIN calculations were based on a 3-year fuel cycle (12 month reload), 3.3 percent enrichment, and three region burnup of 11,000, 22,000, and 33,000 MWd/MTU. Current PWR fuel management practices use higher enrichments and significantly higher fuel burnup (greater than 45,000 MWd/MTU discharge burnup). The use of a reference PWR core (scaled only for power) instead of a plant specific cycle could significantly underestimate the inventory of long-lived radionuclides important to population dose (such as Sr-90, Cs-134 and Cs-137), and thus impact the SAMA evaluation. The fission product scaling was based on 1518 MWt; however, the sensitivity analyses in F.2.5 discussed a power level of 1678 MWt. Provide an assessment of the impact on population dose and on the SAMA screening and dispositioning if the SAMA analysis were based on the fission product inventory for the highest burnup, higher fuel enrichment and higher power level.

NMC Response:

This question is addressed in RAI 7.a.iii.

NRC Question:

c. The year 2035 projected population within the emergency planning zone (0.65 to 10 miles) in Table F.1-3 appears to under-predict the population compared to the reported population distribution in SECPOP2000, NUREG/CR-6525, Rev. 1, pg. F-7 (to 10 miles). Specifically, Table F.1-3 of the ER indicates 22,789 people within the emergency planning zone in 2035. An updated report from Ref. F.1-14 ("Wisconsin Population 2003, A Report on Projected State, County and Municipal Populations and Households for the Period 2000-2030") indicates that a 30 percent growth is expected through 2030. A 30 percent growth applied to the reported SECPOP2000 "Licensee Reported Population" values in NUREG/CR-6525 would result in greater than 35,000 people in this zone at year 2035. Confirm that the ER reported value is appropriate. If it is not, then evaluate whether the impact is significant and provide justification for which distribution is appropriate.

NMC Response:

The Emergency Planning Zone for PBNP is located entirely within Manitowoc and Kewaunee Counties. In 1990, 87% of the population was in the Manitowoc County portion. State population projections are available for these counties. In the response to RAI 8.d, it is noted that county level data are the finest detail data available for population projections. This is what has been used for the PBNP analysis.

Wisconsin population projections are developed by the Demographic Services Center of the Wisconsin State Department of Administration. Their reports are available on the State web site at <http://www.doa.state.wi.us/> and include the latest Census 2000 corrections through November 25, 2003.

The Wisconsin State Demographic Services Center report entitled "Final Population Projections for Wisconsin Counties by Age and Sex: 2000 - 2030", in the section for Manitowoc County, lists a 2000 Census population of 82,893 and a population projection for 2030 of 91,327. This is an increase of 10% over 30 years. The same report gives a similar period increase from 20,187 to 23,266 for Kewaunee County, an increase of 15%. This gives a weighted (87%, 13%) increase of 10.7%. Furthermore, this report provides projections at the level of "communities" that indicate an even smaller growth rate than was used in this analysis.

Simply extrapolating this to the 45-year period between 1990 and 2035 would predict an increase of 16%, which is deemed consistent with the 14% utilized in this PBNP submittal, given the approximate extrapolation process used above.

NRC Question:

d. The ER aggregate population for the fifty-mile radius is reported as 644,800 and the aggregate 11 county population as 836,137 in 1990. The ER states that the population estimates are produced on an element/county area-weighted basis. The counties of Outagamie and Winnebago have large metropolitan areas just within the 50-mile radius. Provide a discussion of the weighting of the populations of these counties in the rosette distribution (i.e., did the area-weighted basis properly distribute these populations within the rosette?).

NMC Response:

The starting point is the rosette grid section allocations of population from SECPOP90 produced from the 1990 census tract population data. Since this is done by the code on a census block level basis, the assignment of the 1990 population is correct for each rosette grid section and is not dependent on county type data.

To estimate the year 2000 population and then to project the 2035 populations in each rosette grid section, it was assumed that the growth in each individual rosette grid section was in proportion to the area-weighted-fraction population growth of the counties in which that grid section was located. At the time of the analyses, no estimates or projections of intra-county population growths past 1990 were available, and the countywide data (Census 2000 county data and then State county projections) were the finest-level data available out to 2020. Past that date, only statewide and then later only nation-wide projections are available.

The first step was to project the county level population percentage changes (relative to the year 1990) out to the year 2035 based on the available county, state and national population change data.

Then the fractional area of each county in each of the MACCS2 rosette sections was approximated. As an example, the grid section in the west azimuthal segment between 40 and 50 miles was estimated to be 10%, 70% and 20% in the counties of Calumet, Outagamie, and Winnebago, respectively. The population change for this grid section was then calculated as the weighted (by the percentages given above) average of the percentage population changes for each of these three counties. The 1990 grid section population was then multiplied by this weighted percentage change to give the 2035 projection for this section. The process was repeated for each radial ring section of each azimuthal segment of the compass rosette grid.

NRC Question:

9. The calculated Offsite Economic Cost and Offsite Exposure Cost for Point Beach are factors of 30 and 10, respectively, lower than for the R.E. Ginna plant, which is also a Westinghouse 2-loop PWR. Much of the difference appears to be in the assumed release fractions, i.e., the fission product release factions for SGTR sequences appear small relative to R.E. Ginna. For the release classes that dominate the population doses at PBNP, provide a discussion of the bases for the release fractions, and a comparison of the release fractions to the results of recent industry or NRC calculations or studies (e.g., NUREG-1150).

NMC Response:

Bases for Release Fractions:

Late SGTR, early SGTR and ISLOCA dominate the population doses. The bases for the SGTR fission product release fractions are those reported in Table 4.7-4 of the PBNP IPE (PBNP IPE PRA FINAL REPORT, Wisconsin Electric Power Co., 1992.). In Table 4.7-4 the volatile and non-volatile FP release fractions reported are based on the CsI and SrO release fractions, respectively, for the modeled PDS sequences, as noted in item (4) of IPE Section 4.7.5. The noble gas release fractions are reported directly. The ISLOCA PDS was not listed in Table 4.7-4, its IPE frequency being 8E-08/Ry. The early SGTR results (R16) were used here for the ISLOCA as R16 is the largest early release listed in Table 4.7-4. The results for the other FP species required for the MACCS analyses were developed from available MAAP3 analyses outputs for the IPE.

Comparison of Release Fractions:

A comparison of the release fractions associated with PBNP with those of other plants requires detailed knowledge of the bases for the release fractions from those other plants. Although the bases for other plants' analyses are not readily available to PBNP to make the requested comparison, PBNP is confident that the release fractions determined for this analysis is representative of the PBNP IPE reported results.

NRC Question:

10. Provide the requested information on the following issues:

    a. In Table F.2-1, SAMA #10 was screened out as PBNP does not have high head injection pumps. However, the underlying issue is an inadvertent actuation of a safety system due to a failure (e.g., loss of two 120VAC busses). Explain whether this more general situation (inadvertent initiation of a safety system) applies to PBNP as a contributor to CDF.

NMC Response:

SAMA 10 (Train operations crew for response to inadvertent actuation signals). was screened from further consideration at PBNP because the high head injection pumps do not generate sufficient head to inject to the primary system in case of an inadvertent initiation. This means that their inadvertent initiation would not cause abnormal pressurizer level and other plant parameters would be

expected to be unaffected. A plant trip would occur due to the actuation signal, initiating a plant transient with a portion of the plant safety systems already in operation. Even though the plant is not expected to be affected by an inadvertent actuation of a safety system, the initiating event frequencies for transients do contain a contribution from the industry average frequency for these events and, therefore, the CDF results also include this contributor.

Inadvertent actuation is a small contributor to the Init-T3 initiator (transients with power conversion system available). Industry information (NUREG-5750) places this event in the General Transient category. NUREG-5750 indicates that approximately 2% of General Transient events are due to Inadvertent Actuation of safety systems.

Although a specific analysis of the benefit of this SAMA was not performed, its benefit can be related to the importance of the INIT-T3 initiator (Risk Reduction Worth (RRW) = 1.019). This means that the total CDF for PBNP would be reduced by approximately 2% if all the contribution from INIT-T3 were eliminated. This reduction would represent a benefit (due to reduction in CDF) of approximately 2% of the maximum attainable benefit or approximately $27.1K. However, since the inadvertent actuation contribution to General Transient is very small (see previous paragraph), it can be seen that the benefit associated with improvements in response to inadvertent actuation events would be very small and not cost beneficial.

NRC Question:

b. SGTR-related improvements (e.g., SAMA 108) and automatic swap-over of recirculation (e.g., SAMA 126) stand out in terms of overall benefits ($565,000 and $531,000, respectively). Provide details of the benefit assessment of these SAMAs (i.e., SAMAs 108, 126, 149, 154, 155, 157). In addition, describe the modifications considered for these SAMAs, including any low cost options. The implication in the assessment of SAMA 108 is that the operator needs further information (e.g., instrumentation) to reduce the human error likelihood. Explain why the human error probability cannot be reduced by other means (e.g., training, procedures, etc.).

Carolina Power and Light developed a detailed cost estimate of $265,000 for implementation of SAMA 126 at the H.B. Robinson plant (NUREG-1437, Supplement 13, pg. G-17). Table F.2-2 of the Point Beach ER indicates that the cost of implementation of this SAMA at "PTN" would be $450,000. Clarify the meaning of "PTN" and "EP" in Table F.2-2, and provide the justification for cost of implementation of this SAMA at Point Beach at greater than $1,000,000 per unit, given the much lower cost estimates for other plants.

NMC Response:

SAMA 108 was interpreted for PBNP as the need for improved instrumentation to detect SGTR or additional systems to scrub fission product releases. Human responses to the initiating event were not addressed specifically but rather the ability to determine that a tube rupture had occurred. As discussed in the response to RAI 10.d, the plant has taken steps to optimize operator actions (and minimize the likelihood of failure).

PTN is the acronym for Turkey Point Nuclear Plant.

EP in this context means the Expert Panel that reviewed the SAMA candidates.

The detailed cost estimate for the implementation of automatic swap-over at PBNP provides the requested justification for the cost presented in Table F.2-2. Refer to the Point Beach License Renewal Topical Report, LR-TOP-902-ESF, Revision 0, dated February 2004, for this cost estimate. The cost of installation of the automatic swap-over capability was estimated at $2426k per unit.

NRC Question:

c. SAMAs 169 and 180 would appear to be marginally cost beneficial (within a factor 2) based on Table F.2-2 and F.2-3 results. Address whether these SAMAs would be cost beneficial when the impact of uncertainty in the cost/benefit assessment is considered.

NMC Response:

This question is addressed in RAI 7.b.ii

NRC Question:

d. SAMAs 181 through 193 include PRA-based procedural enhancements which appear cost beneficial (especially considering uncertainty). In Table F.2-2, these SAMAs have conclusions which state "Use of procedure step mark offs implemented." Clarify whether the CDF reduction presented in Table F.2-2 includes credit for this implementation. If it does, then there appears be a large benefit to further action; explain what additional options could be implemented and their costs. If it does not, then provide the residual benefit after implementation; explain why further action is not cost beneficial.

NMC Response:

The human actions referred to in the subject SAMAs were identified as being important to the overall risk profile of the plant as a result of examining the ranking of importances of the basic events in the PRA model. Prior to the SAMA analysis, the plant had already recognized that these actions were important and had proactively taken steps to determine what could be done to improve operator performance. The human reliability analysis (HRA) techniques used to calculate human error probabilities (HEPs) were examined to determine areas in which improvements could yield reduction in the HEP. These improvements were those that could be made in training or procedures that could realistically improve operator performance and demonstrate that improvement by reduction in the HEPs. The only area in which improvements could be made that would be reflected in reduced HEPs was in the implementation of procedure step mark-offs. The HRA technique used to develop the HEPs indicates that the use of such mark-offs improves the overall performance of the operator by maintaining a positive indication of the operator's location in the procedure, eliminating the need for the operator to locate his position by reviewing previously completed steps.

The plant implemented this procedure enhancement prior to the SAMA analysis but the HRA analyses had not been redone at the time of the SAMA analysis, so the PRA did not include the updated HEPs. The benefit of enhancing the procedures was estimated based upon knowledge of the HRA technique that the implementation of procedure mark-offs could reduce the resultant HEP by as much as a factor of 3 (see NUREG/CR-1278, Table 20-7, Items 2 and 4). Although the PRA had not been updated with the revised HEPs at the time of the SAMA analysis, without these changes, the PRA is more conservative so it was determined that the PRA change could be delayed until a future update. (The response to RAI 10.g also relates to this issue.)

Plant modifications to reduce the impact of these HEPs were not considered because, unless the actions represented by the HEPs were fully automated, the PRA would retain HEPs similar to those in the current model. Based upon the capability of the HRA techniques to determine improvements in operator performance, no further improvement could be gained in the HEPs by refinement of procedures or training. Full automation of any of these actions would exceed their benefit, especially considering that the current benefit would be reduced when the HEPs were revised to account for procedure step mark-offs.

NRC Question:

e. SAMAs 62 and 63 both provide for extended DC power during SBO. However, the difference in estimated benefits is significant. Discuss the rationale for the difference in benefit for these two SAMAs. In addition, address whether removing the AFW DC dependency would significantly improve DC lifetime during SBO.

NMC Response:

The description of the evaluations performed for these SAMAs indicate that two significantly different modeling approaches were applied to addressing the same basic concern of extending DC lifetime during SBO for the purpose of extending the availability of AFW. Since it is critical that AFW be available for as long as possible, these SAMAs are looking at methods of extending DC life. In keeping with the screening approach to evaluation, SAMAs that are similar in purpose are examined by first using a single screening benefit calculation. If all the related SAMAs screen out (provide benefits that are lower than the costs) then no further calculations are needed. If, however, one or more of the SAMAs do not screen out, then the unscreened SAMA(s) must be further evaluated. That is the case with SAMAs 62 and 63. Since the benefit associated with the evaluation applied to SAMA 63 did not also eliminate SAMA 62, it was necessary to refine the benefit calculation for SAMA 62 only.

SAMA 62 and 63 were initially examined by assuming their incorporation would eliminate all CDF contribution from LOSP. Since SBO is a subset of LOSP, this is an extremely conservative modeling approach. This resulted in a benefit that was smaller than the estimated cost of implementing SAMA 63, thereby eliminating the need for further refinement of the cost/benefit calculations for this SAMA. The cost estimate for implementation of SAMA 62, however, was much smaller and the assumption of elimination of all LOSP contribution to CDF was too conservative. A different evaluation was, therefore, used for SAMA 62, in which it was assumed that all CDF associated with SBO would be eliminated; although this is less conservative, it is still a very conservative assumption. The benefit for eliminating the CDF associated with SBO was found to be much less than the estimated cost of implementation of SAMA 62, thus eliminating need for further evaluation of SAMA 62.

The result of the approach used to eliminate SAMAs from further consideration is apparent in these two SAMAs. They are similar in intent but the evaluations were conducted differently. These SAMAs exemplify that the benefit calculations are not performed on equivalent bases and are not directly comparable between SAMAs. The evaluation approach used the drill down techniques from the maximum amount of conservatism (comparison of the SAMA cost with the elimination of all plant risk) until sufficient conservatism is eliminated allowing

removal of the SAMA from further consideration. There has been no attempt made to "realistically" estimate the benefit associated with any SAMA because of the lack of design information that would be required to do so and, therefore, the model results used to evaluate different SAMAs are not meant to be directly compared with other SAMA benefits.

In response to the additional question regarding AFW/DC lifetime, the purpose of these SAMAs is to extend DC life to maximize the availability of AFW during a SBO event. AFW is necessary for the removal of decay heat in this scenario. Removal of the DC dependency from AFW would require a radically different AFW system (independent of AC and DC) and it's design is expected to far exceed the benefits associated with elimination of all SBO contribution to CDF.

NRC Question

f. The basis of conclusion for SAMA 151 indicates that "some credit can now be taken for use of placekeeping aids." Provide a description of the meaning of such aids and estimates of the associated benefit and implementation costs of this SAMA.

NMC Response:

The placekeeping aids discussed in the "Basis for Conclusion" for SAMA 151 on Table F.2-2 are the procedure step mark-offs discussed in the "Conclusion" and described in the response to RAI 10.d. SAMA 151 was evaluated in the most bounding manner, by setting the related human actions to zero (simulating perfect reliability). The action being performed by the operator in this SAMA would be extremely costly to fully automate and, therefore, it can be expected that operator actions represented by this SAMA would not be eliminated. This SAMA has been implemented in the same manner as discussed in 10.d, the benefit was not explicitly calculated because the HRA had not been performed to update the PRA model from it's currently conservative representation of this action.

NRC Question:

g. Provide the justification for using a factor of three reduction in the human error rate assumed for some procedure improvement SAMAs (i.e., SAMA 181, 183-189, 191, 192) rather than the factor of 10 used for others (i.e., SAMA 190 and 193).

NMC Response:

The evaluations performed on HEP was actually done in two steps, an initial evaluation using a factor of 10 reduction and a final evaluation using a more realistic factor of 3 (discussed above under 10.d) for those HEPs that were not eliminated from further refinement by the factor of 10 evaluation. The SAMAs that are described as having been evaluated using a factor of 10 were found to have a very low benefit even when an unrealistic reduction (extremely conservative assumption) was applied to the associated HEP. The evaluation used to eliminate them from further consideration was reported and, therefore, there are results from both the initial HEP evaluations and the final HEP evaluations included in the ER.

Although these SAMAs were evaluated using different sensitivity values, the overall process is consistent with the approach of continued refinement of the analyses until sufficient conservatism is removed to determine whether the SAMA is cost-beneficial.

NRC Question:

11. As part of the sensitivity analyses (pg. F-19), NMC assumed a net power level of 564 MWe per unit for calculating the cost of replacement power and used incremental factors of 10 percent and 100 percent on the Level 3 results (dose and economic impacts) to consider the effect of higher power levels on candidate SAMAs. NMC concluded that the onsite cleanup and replacement power cost overwhelm any changes to the cost/benefit analyses. Discuss whether the cost/benefit analyses could change a conclusion for a low-cost candidate SAMA (see, RAI #6).

NMC Response:

This question is addressed in RAI 7.a.iii.

Attachment 1 – Importance to CDF (RRW>1.01)

CUT SET EQUATION PARAMETERS

Data Base BASIS (.BED) C:\MODELS\PBNP0502\DATA\TOPLOGIC.BED
Cut set equation (.EQN) C:\MODELS\PBNP0502\EQNS\BASE1.EQN
IMPORTANCES using event probabilities as shown (not BED values)

Rank	EVENT NAME	POINT EST.	F-V IMPORT	RSK ACMT	RISK RED
1	INIT-R	6.900E-003	2.439E-001	36.10	1.323
2	INIT-T2	1.900E-001	1.784E-001	1.76	1.217
3	HEP-HHR-EOP13-23	1.250E-002	1.624E-001	13.83	1.194
4	HEP-ODC-EOP-3-21	2.000E-002	1.504E-001	8.37	1.177
5	HEP-RHR-EOP13-23	2.450E-002	1.412E-001	6.62	1.164
6	SGTR-A	5.000E-001	1.226E-001	1.12	1.140
7	INIT-TCC	3.650E+002	1.224E-001	0.88	1.139
8	SGTR-B	5.000E-001	1.212E-001	1.12	1.138
9	HEP-RCS-CSPH1-12	2.360E-002	1.192E-001	5.93	1.135
10	NON-SBO-FLG	1.000E+000	1.152E-001	1.00	1.130
11	INIT-T1	7.100E-003	1.152E-001	17.11	1.130
12	AF--HEP-CST-LOW-	3.900E-004	1.123E-001	288.87	1.127
13	REC-OPEN-CV0112	1.000E-001	9.816E-002	1.88	1.109
14	125-HEP-EOP10-08	4.200E-003	9.312E-002	23.08	1.103
15	AF--TDP-FR--1P29	3.211E-002	7.771E-002	3.34	1.084
16	INIT-TFB	4.300E-003	7.691E-002	18.81	1.083
17	INIT-TSW	3.650E+002	6.770E-002	0.93	1.073
18	TSB-TFB-A	5.000E-001	6.672E-002	1.07	1.071
19	TSB-TFB-B	5.000E-001	6.326E-002	1.06	1.068
20	IRB-INDUCED-SGTR	2.700E-002	6.248E-002	3.25	1.067
21	INIT-TSB	9.900E-003	5.307E-002	6.31	1.056
22	CCW-SYS-PR-LOWER	5.000E-001	5.207E-002	1.05	1.055
23	WG--HX--IL-0048A	2.400E-005	5.207E-002	2170.74	1.055
24	INIT-S1	1.100E-004	5.020E-002	457.33	1.053
25	CV--MOV-CC-0112B	2.570E-003	4.979E-002	20.33	1.052
26	FLAG-SW-SUPPLY	1.000E+000	4.839E-002	1.00	1.051
27	HEP-ECA-EOP31-32	7.700E-003	4.280E-002	6.52	1.045
28	CC--MDP-TM-0011B	1.220E-002	4.253E-002	4.44	1.044
29	480-BS--LP--1B03	2.400E-006	3.953E-002	16470.17	1.041
30	FP--MDP-TM-0035A	3.520E-002	3.671E-002	2.01	1.038
31	AF--HEP-CST-FW--	1.100E-002	3.469E-002	4.12	1.036
32	FLAG-1ASG-OUT	1.000E+000	3.311E-002	1.00	1.034
33	FLAG-B-SI-REC	1.000E+000	3.305E-002	1.00	1.034
34	FP--DDP-FR-0035B	2.627E-001	3.266E-002	1.09	1.034
35	FLAG-A-SI-REC	1.000E+000	3.232E-002	1.00	1.033
36	HEP-MS--EOP-3-02	4.750E-003	3.198E-002	7.70	1.033
37	FLAG-P38A-U2	5.000E-001	3.145E-002	1.03	1.032
38	AF--MDP-FR---38A	1.494E-002	3.086E-002	3.04	1.032
39	AF--MDP-TM---38A	1.820E-002	3.053E-002	2.65	1.031
40	AF--HEP-CST-SW--	4.600E-003	3.035E-002	7.57	1.031
41	HEP-RCS-CSPH1-13	2.050E-002	3.018E-002	2.44	1.031
42	FLAG-1BSG-OUT	1.000E+000	2.965E-002	1.00	1.031
43	AF--MDP-FR---38B	1.494E-002	2.832E-002	2.87	1.029
44	AF--MDP-TM---38B	1.820E-002	2.785E-002	2.50	1.029

45	INIT-EXC	9.900E-007	2.759E-002	27866.29	1.028
46	AF--HEP-MDP-FLOW	4.400E-002	2.742E-002	1.60	1.028
47	FLAG-P38B-U2	5.000E-001	2.707E-002	1.03	1.028
48	138-HEP-STARTG05	1.300E-001	2.619E-002	1.18	1.027
49	ATWS-FLAG	1.000E+000	2.347E-002	1.00	1.024
50	PLA-RX-POWER-HI	1.000E+000	2.347E-002	1.00	1.024
51	AF--HEP-CST-SWMD	1.500E-002	2.058E-002	2.35	1.021
52	REC-MAN-OPENVLV2	1.000E-001	2.006E-002	1.18	1.020
53	HEP-IA--FO-04748	1.000E-003	1.951E-002	20.49	1.020
54	FLAG-SW-DISCHARG	1.000E+000	1.931E-002	1.00	1.020
55	INIT-T3	6.600E-001	1.906E-002	1.01	1.019
56	RH--VLV-RE-0706B	1.000E-003	1.784E-002	18.82	1.018
57	RH--VLV-RE-0706A	1.000E-003	1.784E-002	18.82	1.018
58	IRA-INDUCED-SGTR	2.700E-003	1.759E-002	7.50	1.018
59	PRA-PRESS-RELIEF	2.000E-001	1.757E-002	1.07	1.018
60	HEP-SW--AOP9A-63	5.200E-002	1.717E-002	1.31	1.017
61	HEP-MFW-CSPH1-XX	1.000E-001	1.640E-002	1.15	1.017
62	FO--MDP-CM-CC44-	1.690E-004	1.565E-002	93.57	1.016
63	480-BS--TM--2B04	6.980E-003	1.535E-002	3.18	1.016
64	DGS-TO-A05-A06	1.000E+000	1.524E-002	1.00	1.015
65	AF--T---TM--T24A	2.600E-002	1.456E-002	1.55	1.015
66	AF--T---TM--T24B	2.600E-002	1.456E-002	1.55	1.015
67	AF--CKV-CC---117	5.000E-005	1.411E-002	283.17	1.014
68	FLAG-1BSG-INTACT	1.000E+000	1.334E-002	1.00	1.014
69	AF--AOV-CC1-4002	5.860E-003	1.313E-002	3.23	1.013
70	SW--MV--PG-00165	2.988E-006	1.291E-002	4322.53	1.013
71	B-LHR-FAIL-FLAG	1.000E+000	1.266E-002	1.00	1.013
72	A-LHR-FAIL-FLAG	1.000E+000	1.260E-002	1.00	1.013
73	INIT-SBO	7.100E-003	1.229E-002	2.72	1.012
74	SBO-INIT-FLG	1.000E+000	1.229E-002	1.00	1.012
75	FLAG-NON-ATWS	1.000E+000	1.212E-002	1.00	1.012
76	RP--CRD-FO-00000	1.800E-006	1.201E-002	6674.02	1.012
77	FLAG-1ASG-INTACT	1.000E+000	1.191E-002	1.00	1.012
78	AF--TDP-TM--1P29	7.760E-003	1.182E-002	2.51	1.012
79	AF--AOV-CC--4007	5.860E-003	1.160E-002	2.97	1.012
80	AF--AOV-CC--4012	5.860E-003	1.160E-002	2.97	1.012
81	AF--AOV-CC--4014	5.860E-003	1.071E-002	2.82	1.011
82	AF--AOV-CC--4019	5.860E-003	1.071E-002	2.82	1.011
83	138-GT--FS---G05	5.560E-002	1.053E-002	1.18	1.011
84	INIT-S2	3.200E-003	1.051E-002	4.28	1.011