
REVISED RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

APR1400 Design Certification

Korea Electric Power Corporation / Korea Hydro & Nuclear Power Co., LTD

Docket No. 52-046

RAI No.: 434-8352
SRP Section: SRP 19
Application Section: 19.1
Date of RAI Issue: 03/08/2016

Question No. 19-92

10 CFR 52.47(a)(27) states that a design certification (DC) application must contain an FSAR that includes a description of the design-specific PRA and its results. In addition, SRP Chapter 19.0, draft Revision 3, Section II "Acceptance Criteria," Item 4 on Page 19.0-13 states "The staff will determine that the applicant has identified risk-informed safety insights based on systematic evaluations of the risk associated with the design such that the applicant can identify and describe the following: A. The design's robustness, levels of defense-in-depth, and tolerance of severe accidents initiated by either internal or external events and B. The risk significance of potential human errors associated with the design." In addition, Item 13 on Page 19.0-16 states "The staff will determine that the assumptions made in the applicant's PRA during design development and certification, in which a specific site may not have been identified or all aspects of the design (e.g., balance of plant) may not have been fully developed, are identified in the DC application and either remain valid or are adequately addressed within the COL application." Furthermore, Item 14 on Page 19.0-16 states that "The staff will determine that FSAR Chapter 19 includes PRA qualitative results, including the identification of key PRA assumptions, the identification of PRA-based insights, and discussion of the results and insights from importance, sensitivity, and uncertainty analyses."

Thus, in this context, the staff reviewed APR1400 DCD Table 19.1-4 "Risk Insights and Key Assumptions" and found this table is not comprehensive in identifying the APR1400 PRA-related key assumptions and insights. Therefore, in order for the staff to reach a reasonable assurance finding, please enhance Table 19.1-4 of the DCD to identify all PRA key assumptions and PRA-based insights, and also the insights from the importance, sensitivity, and uncertainty analyses.

Response – (Rev.2)

The DCD Table 19.1-4 "Risk Insights and Key Assumptions" provides risk insights that are based on key design features, severe accident design features, and PRA that includes key assumptions, importance, and sensitivity analyses. There were total of fifty-eight (58) specific

items listed in Table 19.1-4, and ten (10) additional items, mostly related to LPSD conditions, were added during the DCD review.

Table 19.1-4 was reviewed during the PRA update, and incorporated the changes to several key PRA assumptions, to ensure that risk insights listed in the table are consistent with the risk insights and the key assumptions, and also the insights from the importance, sensitivity, and uncertainty analyses. The detailed sensitivity and uncertainty analysis will be documented in APR1400-K-P-NR-01308-P, "APR1400 PRA Sensitivity and Uncertainty Analysis," which will be made available in the Electronic Reading Room.

- a) A comprehensive assessment of the impact of uncertainties in key assumptions will be performed with considerations of risk insights and risk quantifications of CDF and LRF using the PRA update, and the assessment will be documented in APR1400-K-P-NR-01308-P, "APR1400 PRA Sensitivity and Uncertainty Analysis."

Some example assumptions (not limited to these examples) that were evaluated for uncertainty are as follows:

- fire ignition frequencies (e.g., consideration of more recent fire ignition frequency estimates)
 - RCP seal failure probability and model (e.g., based on new technical bases), Assumption No. 1 in DCD Table 19.1-4.
 - Room heat-up calculations (e.g., based on new calculations), Assumption No. 5 in DCD Table 19.1-4
- b) The uncertainty assessment will consider all PRA models included in the APR1400 DC PRA (i.e., all operating modes, hazards, and PRA levels) using the PRA update.
- c) The uncertainty and key assumptions related to the PRA update were identified in DCD Table 19.1-4, see Assumptions 1, 5, 7, 11, 14, 15, 21, and 66.

The DCD markups from the PRA update results and insights are provided in Attachments 1 and 2. The attached [Table 1](#) to this RAI response shows the update status of the DCD Section 19.1 tables from 2017 PRA update.

[The attached Table 2 to this RAI response shows the update status of the DCD Section 19.1 table to add basic event probability in CDF and LRF cutsets in table.](#)

Impact on DCD

DCD Section 19.1 & DCD Table 1.8-2 will be revised as indicated in the Attachment 1 & 2.

[In this revised response\(Rev.2\), the attachment only includes the tables changed from RAI 434-8352\(92R\).](#)

Impact on PRA

There is no impact on the PRA.

Impact on Technical Specifications

There is no impact on the Technical Specifications.

Impact on Technical/Topical/Environmental Reports

There is no impact on any Technical, Topical, or Environmental Report.

Table 1 - Section 19.1 Table Update Status from 2017 PRA Update

Table Number	Table Title	Update Status
Table 19.1-1	Characterization of PRA Relative to Supporting Requirements in ASME PRA Standard	Unchanged
Table 19.1-2	Key Design Features in APR1400	Unchanged
Table 19.1-3	Design Features Addressing Potential Risk Challenges	Unchanged
Table 19.1-4	Risk Insights and Key Assumptions	Partial Update
Table 19.1-5	Relation of the Plant Safety Functions and the Initiating Events Types	Unchanged
Table 19.1-6	Internal Events PRA Initiating Event Frequencies	Table Replaced
Table 19.1-7	Level 1 Internal Events PRA Event Tree List	Unchanged
Table 19.1-8	Event Tree Top Events and Success Criteria	Unchanged
Table 19.1-9	PRA Modeled Systems	Unchanged
Table 19.1-10a	Dependency between Initiating Events and Front Line Systems	Unchanged
Table 19.1-10b	Dependency between Initiating Events and Support Systems	Unchanged
Table 19.1-11a	Front Line System Dependencies on Support Systems	Unchanged
Table 19.1-11b	Support System Dependencies on Other Support Systems	Unchanged
Table 19.1-12	RELAP Thermal-Hydraulic Run Summaries	Unchanged
Table 19.1-13	MAAP Thermal-Hydraulic Run Summaries	Unchanged
Table 19.1-14	Component Failure Rate Data	Table Replaced
Table 19.1-14a	Component Unavailability Data	New Table
Table 19.1-15	Component Boundaries	Unchanged
Table 19.1-16	Special Basic Events	Table Replaced
Table 19.1-17	Level 1 Internal Events CDF Contribution by Initiating Events	Table Replaced
Table 19.1-18	Level 1 Internal Events Top Accident Sequences	Table Replaced
Table 19.1-19	Level 1 Internal Events Top 100 CDF Cutsets	Table Replaced
Table 19.1-20	Level 1 Internal Events Key Basic Events RAW (CDF)	Table Replaced
Table 19.1-21	Level 1 Internal Events Key Basic Events by FV (CDF)	Table Replaced
Table 19.1-22	Level 1 Internal Events Key CCF Events by RAW (CDF)	Table Replaced
Table 19.1-23	Level 1 Internal Events Key CCF Events by FV (CDF)	Table Replaced
Table 19.1-24	Level 1 Internal Events Key Operator Actions by RAW (CDF)	Table Replaced
Table 19.1-25	Level 1 Internal Events Key Operator Actions by FV (CDF)	Table Replaced
Table 19.1-26	PDS Grouping Parameters	Unchanged
Table 19.1-27	Frequency of Dominant PDSs	Table Replaced
Table 19.1-28	Containment Failure Modes and Results	Unchanged

Table 1 - Section 19.1 Table Update Status from 2017 PRA Update

Table Number	Table Title	Update Status
Table 19.1-28a	Comparison of Containment Pressure Between 19.1, 19.2 and 19.3	Unchanged
Table 19.1-29	Summary of Source Term Evaluation	Unchanged
Table 19.1-30	Source Term Category Frequencies and Contributions to LRF for Internal Events	Table Replaced
Table 19.1-30a	Source Term Category Frequencies and Contributions to LRF for Internal Fire Events	Table Replaced
Table 19.1-30b	Source Term Category Frequencies and Contributions to LRF for Internal Flooding Events	Table Replaced
Table 19.1-31	Level 2 Internal Events Top 100 LRF Cutsets	Table Replaced
Table 19.1-32	Level 2 Internal Events LRF Contributions by Initiating Events	Table Replaced
Table 19.1-33	Significant PDS Contributors to LRF	Table Deleted
Table 19.1-34	Level 2 Internal Events Key Basic Events by RAW (LRF)	Table Replaced
Table 19.1-35	Level 2 Internal Events Key Basic Events by FV (LRF)	Table Replaced
Table 19.1-36	Level 2 Internal Events Key CCF Events by RAW (LRF)	Table Replaced
Table 19.1-37	Level 2 Internal Events Key CCF Events by FV (LRF)	Table Replaced
Table 19.1-38	Level 2 Internal Events Key Operator Actions by RAW (LRF)	Table Replaced
Table 19.1-39	Level 2 Internal Events Key Operator Actions by FV (LRF)	Table Replaced
Table 19.1-40	Results of LRF Sensitivity Analyses	Table Replaced
Table 19.1-41	Systems Considered for Seismic Equipment List	See RAI 19-10 Response
Table 19.1-42	Seismic Equipment List	See RAI 19-10 Response
Table 19.1-43	Seismic Fragility Analysis Results Summary	See RAI 19-10 Response
Table 19.1-44	Dominant Contributors to the Plant HCLPF	Table Replaced
Table 19.1-45	Fire Compartment Initiator Development and Screening	Unchanged
Table 19.1-46a	Internal Fire PRA Fire – Induced Initiators IEF	Table Replaced
Table 19.1-46b	Internal Fire PRA CDF Contribution by Top Fire Induced Initiators	Table Replaced
Table 19.1-46c	Internal Fire PRA LRF Contribution by Top Fire Induced Initiators	Table Replaced
Table 19.1-47	Internal Fire PRA CDF Contribution by Top Fire Scenario	Table Replaced
Table 19.1-48	Internal Fire PRA LRF Contribution by Top Fire Scenario	Table Replaced
Table 19.1-49	Internal Fire PRA Top 100 CDF Cutsets	Table Replaced
Table 19.1-50	Internal Fire PRA Top 100 LRF Cutsets	Table Replaced

Table 1 - Section 19.1 Table Update Status from 2017 PRA Update

Table Number	Table Title	Update Status
Table 19.1-51	Internal Fire PRA Key Basic Events by RAW (CDF)	Table Replaced
Table 19.1-52	Internal Fire PRA Key Basic Events by FV (CDF)	Table Replaced
Table 19.1-53	Internal Fire PRA Key CCF Events by RAW (CDF)	Table Replaced
Table 19.1-54	Internal Fire PRA Key CCF Events by FV (CDF)	Table Replaced
Table 19.1-55	Internal Fire PRA Key Operator Actions by RAW (CDF)	Table Replaced
Table 19.1-56	Internal Fire PRA Key Operator Actions by FV (CDF)	Table Replaced
Table 19.1-57	Internal Fire PRA Key Basic Events by RAW (LRF)	Table Replaced
Table 19.1-58	Internal Fire PRA Key Basic Events by FV (LRF)	Table Replaced
Table 19.1-59	Internal Fire PRA Key CCF Events by RAW (LRF)	Table Replaced
Table 19.1-60	Internal Fire PRA Key CCF Events by FV (LRF)	Table Replaced
Table 19.1-61	Internal Fire PRA Key Operator Actions by RAW (LRF)	Table Replaced
Table 19.1-62	Internal Fire PRA Key Operator Actions by FV (LRF)	Table Replaced
Table 19.1-62a	Flood Sources by Flood Area	Unchanged
Table 19.1-63	Internal Flooding Initiating Event Summary	Table Replaced
Table 19.1-64	Internal Flooding PRA CDF Contribution by Top Flooding Induced Initiators	Table Replaced
Table 19.1-65	Internal Flooding PRA LRF Contribution by Top Flooding Induced Initiators	Table Replaced
Table 19.1-66	Internal Flooding PRA Top 100 CDF Cutsets	Table Replaced
Table 19.1-67	Internal Flooding PRA Top 100 LRF Cutsets	Table Replaced
Table 19.1-68	Internal Flooding PRA Key Basic Events by RAW (CDF)	Table Replaced
Table 19.1-69	Internal Flooding PRA Key Basic Events by FV (CDF)	Table Replaced
Table 19.1-70	Internal Flooding PRA Key CCF Events by RAW (CDF)	Table Replaced
Table 19.1-71	Internal Flooding PRA Key CCF Events by FV (CDF)	Table Replaced
Table 19.1-72	Internal Flooding PRA Key Operator Actions by RAW (CDF)	Table Replaced
Table 19.1-73	Internal Flooding PRA Key Operator Actions by FV (CDF)	Table Replaced
Table 19.1-74	Internal Flooding PRA Key Basic Events by RAW (LRF)	Table Replaced
Table 19.1-75	Internal Flooding PRA Key Basic Events by FV (LRF)	Table Replaced
Table 19.1-76	Internal Flooding PRA Key CCF Events by RAW (LRF)	Table Replaced
Table 19.1-77	Internal Flooding PRA Key CCF Events by FV (LRF)	Table Replaced
Table 19.1-78	Internal Flooding PRA Key Operator Actions by RAW (LRF)	Table Replaced
Table 19.1-79	Internal Flooding PRA Key Operator Actions by FV (LRF)	Table Replaced
Table 19.1-80	Summary of External Hazard Dispositions	See RAI 19-14 Response

Table 1 - Section 19.1 Table Update Status from 2017 PRA Update

Table Number	Table Title	Update Status
Table 19.1-81	LPSD Plant Operating States	Unchanged
Table 19.1-82	LPSD PRA Loss of SCS Initiators	Unchanged
Table 19.1-83	LPSD PRA General LOCA Initiators	Table Replaced
Table 19.1-84	LPSD PRA Shutdown-Specific LOCA Initiators	Unchanged
Table 19.1-85	LPSD PRA (LOOP)(SBO) Initiators	Table Replaced
Table 19.1-86	LPSD PRA Loss of Supporting System Initiators	Table Replaced
Table 19.1-87	LPSD PRA Transient Events Initiators	Table Replaced
Table 19.1-88	LPSD PRA Accident Sequences Summary	Unchanged
Table 19.1-89	LPSD PRA Success Criteria Summary for Events Involving Loss of Operating SCS Train	Unchanged
Table 19.1-90	LPSD PRA Success Criteria Summary for Events Involving RCS Inventory	Unchanged
Table 19.1-91	LPSD PRA Success Criteria Summary for SBO Events	Unchanged
Table 19.1-92	LPSD PRA Success Criteria Summary for TLOCCW/TLOESW Events	Unchanged
Table 19.1-92a	The Results of Thermal-Hydraulic Analyses for POS 12B	Unchanged
Table 19.1-92b	Summary of Analysis Results for Plant Operating States	Unchanged
Table 19.1-93	LPSD PRA Internal Events CDF Contributions for Initiating Event - All POS	Table Replaced
Table 19.1-94	LPSD PRA Internal Events CDF Contributions for Initiating Event – Reduced Inventory	Table Replaced
Table 19.1-95	LPSD Internal Events PRA CDF Contributions by Plant Operating State	Table Replaced
Table 19.1-96	LPSD Internal Events PRA Top 100 CDF Cutsets - All POS	Table Replaced
Table 19.1-97	LPSD Internal Events PRA Top 100 CDF Cutsets - Reduced Inventory	Table Replaced
Table 19.1-98	LPSD Internal Events PRA Key Basic Events by RAW (CDF) - All POS	Table Replaced
Table 19.1-99	LPSD Internal Events PRA Key Basic Events by RAW (CDF) - Reduced Inventory	Table Replaced
Table 19.1-100	LPSD Internal Events PRA Key Basic Events by FV (CDF) - All POS	Table Replaced
Table 19.1-101	LPSD Internal Events PRA Key Basic Events by FV (CDF) - Reduced Inventory	Table Replaced
Table 19.1-102	LPSD Internal Events PRA Key CCF Events by RAW (CDF)	Table Replaced
Table 19.1-103	LPSD Internal Events PRA Key CCF Events by FV (CDF)	Table Replaced
Table 19.1-104	LPSD Internal Events PRA Key Operator Actions by	Table Replaced

Table 1 - Section 19.1 Table Update Status from 2017 PRA Update

Table Number	Table Title	Update Status
	RAW (CDF)	
Table 19.1-105	LPSD Internal Events PRA Key Operator Actions by FV (CDF)	Table Replaced
Table 19.1-105a	LPSD Internal Events PRA Key Initiating Events by FV (CDF)	Table Replaced
Table 19.1-105b	LPSD Internal Events PRA Key Initiating Events by RAW (CDF)	Table Replaced
Table 19.1-105c	LPSD Internal Events PRA Key Initiating Events by RRW (CDF)	Table Replaced
Table 19.1-106	LPSD Internal Flooding PRA CDF Contributions for Initiating Events - All POS	Table Replaced
Table 19.1-107	LPSD Internal Flooding PRA CDF Contributions for Initiating Events - Reduced Inventory	Table Replaced
Table 19.1-107a	LPSD Internal Events PRA Key Initiating Events by RAW (CDF)	See Table 19.1-105b
Table 19.1-108	LPSD Internal Flooding PRA CDF Contributions by Plant Operating State	Table Replaced
Table 19.1-108a	LPSD Internal Events PRA Key Initiating Events by RRW (CDF)	See Table 19.1-105c
Table 19.1-109	LPSD Internal Flooding PRA CDF Top 100 Cutsets – All POS	Table Replaced
Table 19.1-110	LPSD Internal Flooding PRA CDF Top 100 Cutsets – Reduced Inventory	Table Replaced
Table 19.1-111	LPSD Internal Flooding PRA Key Basic Events by RAW (CDF) – All POS	Table Replaced
Table 19.1-112	LPSD Internal Flooding PRA Key Basic Events by RAW (CDF) – Reduce Inventory	Table Replaced
Table 19.1-113	LPSD Internal Flooding PRA Key Basic Events by FV (CDF) – All POS	Table Replaced
Table 19.1-114	LPSD Internal Flooding PRA Key Basic Events by FV (CDF) – Reduced Inventory	Table Replaced
Table 19.1-115	LPSD Internal Flooding PRA Key CCF by RAW (CDF)	Table Replaced
Table 19.1-116	LPSD Internal Flooding PRA Key CCF by FV (CDF)	Table Replaced
Table 19.1-117	LPSD Internal Flooding PRA Key Operator Actions by RAW (CDF)	Table Replaced
Table 19.1-118	LPSD Internal Flooding PRA Key Operator Actions by FV (CDF)	Table Replaced
Table 19.1-119	LPSD Fire PRA CDF Contributions by Plant Operating State	Table Replaced
Table 19.1-120	LPSD PRA CDF Contributions for Internal Fire Initiating Events - All POS	Table Replaced

Table 1 - Section 19.1 Table Update Status from 2017 PRA Update

Table Number	Table Title	Update Status
Table 19.1-121	LPSD PRA CDF Contributions for Internal Fire Initiating Events – Reduced Inventory	Table Replaced
Table 19.1-122	LPSD PRA CDF Internal Fire Top 100 Cutsets – All POS	Table Replaced
Table 19.1-123	LPSD PRA CDF Internal Fire Top 100 Cutsets – Reduced Inventory	Table Replaced
Table 19.1-124	LPSD Internal Fire PRA Key Basic Events by RAW (CDF) – All POS	Table Replaced
Table 19.1-125	LPSD Internal Fire PRA Key Basic Events by RAW (CDF) – Reduced Inventory	Table Replaced
Table 19.1-126	LPSD Internal Fire PRA Key Basic Events by FV (CDF) – All POS	Table Replaced
Table 19.1-127	LPSD Internal Fire PRA Key Basic Events by FV (CDF) – Reduced Inventory	Table Replaced
Table 19.1-128	LPSD Internal Fire PRA Key CCF by RAW (CDF)	Table Replaced
Table 19.1-129	LPSD Internal Fire PRA Key CCF by FV (CDF)	Unchanged
Table 19.1-130	LPSD Internal Fire PRA Key PRA Operator Actions by RAW (CDF)	Table Replaced
Table 19.1-131	LPSD Internal Fire PRA Key PRA Operator Actions by FV (CDF)	Table Replaced
Table 19.1-132	APR1400 Shutdown LRF Screening Methodology	Table Replaced
Table 19.1-133	APR1400 LPSD Internal Events Release Fractions	Table Replaced
Table 19.1-134	Internal Events LPSD LRF by POS	Table Replaced
Table 19.1-135	LPSD Internal Events PRA Top 100 Cutsets (LRF) – All POS	Table Replaced
Table 19.1-136	LPSD Internal Events PRA Top 100 Cutsets (LRF) – Reduced Inventory	Table Replaced
Table 19.1-137	LPSD Internal Events PRA LRF Contribution by Initiating Events – POS 4B to 12A	Table Replaced
Table 19.1-138	LPSD Internal Events PRA LRF Contribution by Initiating Events – Reduced Inventory POS	Table Replaced
Table 19.1-139	LPSD Internal Events PRA Key Basic Events by RAW (LRF) – POS 4B to 12A	Table Replaced
Table 19.1-140	LPSD Internal Events PRA Key Basic Events by RAW (LRF) – Reduced Inventory	Table Replaced
Table 19.1-141	LPSD Internal Events PRA Key Basic Events by FV (LRF) – POS 4B to 12A	Table Replaced
Table 19.1-142	LPSD Internal Events PRA Key Basic Events by RAW (LRF) – Reduced Inventory	Table Replaced
Table 19.1-143	LPSD Internal Events PRA Key CCF Events by RAW (LRF)	Table Replaced
Table 19.1-144	LPSD Internal Events PRA Key CCF Events by FV	Table Replaced

Table 1 - Section 19.1 Table Update Status from 2017 PRA Update

Table Number	Table Title	Update Status
	(LRF)	
Table 19.1-145	LPSD Internal Events PRA Key Operator Actions by RAW (LRF)	Table Replaced
Table 19.1-146	LPSD Internal Events PRA Key Operator Actions by FV (LRF)	Table Replaced
Table 19.1-147	LPSD Internal Events Source Term Category Frequencies and Contributions to LRF (POS 4B-12A)	Table Replaced
Table 19.1-148	LPSD Fire LRF by POS	Table Replaced
Table 19.1-149	LPSD Internal Fire PRA Top 100 Cutsets (LRF) – All POS	Table Replaced
Table 19.1-150	LPSD Internal Fire PRA Top 100 Cutsets (LRF) – Reduced Inventory	Table Replaced
Table 19.1-151	LPSD Internal Fire PRA LRF Contribution by Initiating Events – All POS	Table Replaced
Table 19.1-152	LPSD Internal Fire PRA LRF Contribution by Initiating Events – Reduced Inventory POS	Table Replaced
Table 19.1-153	LPSD Internal Fire PRA Key Basic Events by RAW (LRF) –All POS	Table Replaced
Table 19.1-154	LPSD Internal Fire PRA Key Basic Events by RAW (LRF) –Reduced Inventory	Table Replaced
Table 19.1-155	LPSD Internal Fire PRA Key Basic Events by FV (LRF) – All POS	Table Replaced
Table 19.1-156	LPSD Internal Fire PRA Key Basic Events by FV (LRF) – Reduced Inventory	Table Replaced
Table 19.1-157	LPSD Internal Fire PRA Key CCF Events by RAW (LRF)	Table Replaced
Table 19.1-158	LPSD Internal Fire PRA Key CCF Events by FV (LRF)	Table Replaced
Table 19.1-159	LPSD Internal Fire PRA Key Operator Actions by RAW (LRF)	Table Replaced
Table 19.1-160	LPSD Internal Events PRA Key Operator Actions by FV (LRF)	Table Replaced
Table 19.1-161	LPSD FPRA Source Term Category Frequencies and Contributions to LRF (POS 4B-12A)	Table Replaced
Table 19.1-162	AFWS Unreliability Results	See RAI 19-45

Table 2 - Section 19.1 Revised Table Update Status

Table Number	Table Title	Update Status
Table 19.1-31	Level 2 Internal Events Top 100 LRF Cutsets	Table Modified
Table 19.1-66	Internal Flooding PRA Top 100 CDF Cutsets	Table Modified
Table 19.1-67	Internal Flooding PRA Top 100 LRF Cutsets	Table Modified
Table 19.1-96	LPSD Internal Events PRA Top 100 CDF Cutsets - All POS	Table Modified
Table 19.1-97	LPSD Internal Events PRA Top 100 CDF Cutsets - Reduced Inventory	Table Modified
Table 19.1-109	LPSD Internal Flooding PRA CDF Top 100 Cutsets – All POS	Table Modified
Table 19.1-110	LPSD Internal Flooding PRA CDF Top 100 Cutsets – Reduced Inventory	Table Modified
Table 19.1-135	LPSD Internal Events PRA Top 100 Cutsets (LRF) – All POS	Table Modified
Table 19.1-136	LPSD Internal Events PRA Top 100 Cutsets (LRF) – Reduced Inventory	Table Modified

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Table 19.1-31 (1 of 30)

Level 2 Internal Events Top 100 LRF Cutsets

Rank	Frequency (/yr)	Cutsets			Contribution to LRF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
1	5.28E-09	6.56E-01 2.98E-07 2.70E-02	%GTRN I-ATWS-RPMCF PI-SGTR	GENERAL TRANSIENT CCF TO SCRAM DUE TO MECHANICAL FAILURES (1HR MT) PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB	5.3	5.3
2	4.45E-09	7.32E-03 2.25E-05 2.70E-02	%LSSB-D MSEVXQ2-011/13 PI-SGTR	LARGE SECONDARY SIDE BREAK (MSIV DOWNSTREAM) 2/2 CCF OF 2/4 MSIV 011/013 FAIL TO CLOSE PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB	4.4	9.7
3	4.45E-09	7.32E-03 2.25E-05 2.70E-02	%LSSB-D MSEVXQ2-011/14 PI-SGTR	LARGE SECONDARY SIDE BREAK (MSIV DOWNSTREAM) 2/2 CCF OF 2/4 MSIV 011/014 FAIL TO CLOSE PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB	4.4	14.1
4	4.45E-09	7.32E-03 2.25E-05 2.70E-02	%LSSB-D MSEVXQ2-012/13 PI-SGTR	LARGE SECONDARY SIDE BREAK (MSIV DOWNSTREAM) 2/2 CCF OF 2/4 MSIV 012/013 FAIL TO CLOSE PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB	4.4	18.6
5	4.45E-09	7.32E-03 2.25E-05 2.70E-02	%LSSB-D MSEVXQ2-012/14 PI-SGTR	LARGE SECONDARY SIDE BREAK (MSIV DOWNSTREAM) 2/2 CCF OF 2/4 MSIV 012/014 FAIL TO CLOSE PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB	4.4	23.0

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Table 19.1-31 (2 of 30)

Rank	Frequency (/yr)	Cutsets			Contribution to LRF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
6	2.37E-09	7.32E-03 1.20E-05 2.70E-02	%LSSB-D MSEVXQ3-011/12/13 PI-SGTR	LARGE SECONDARY SIDE BREAK (MSIV DOWNSTREAM) 2/2 CCF OF 3/4 MSIV 011/012/013 FAIL TO CLOSE PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB	2.4	25.4
7	2.37E-09	7.32E-03 1.20E-05 2.70E-02	%LSSB-D MSEVXQ3-011/12/14 PI-SGTR	LARGE SECONDARY SIDE BREAK (MSIV DOWNSTREAM) 2/2 CCF OF 3/4 MSIV 011/012/014 FAIL TO CLOSE PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB	2.4	27.7
8	2.37E-09	7.32E-03 1.20E-05 2.70E-02	%LSSB-D MSEVXQ3-011/13/14 PI-SGTR	LARGE SECONDARY SIDE BREAK (MSIV DOWNSTREAM) 2/2 CCF OF 3/4 MSIV 011/013/014 FAIL TO CLOSE PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB	2.4	30.1
9	2.37E-09	7.32E-03 1.20E-05 2.70E-02	%LSSB-D MSEVXQ3-012/13/14 PI-SGTR	LARGE SECONDARY SIDE BREAK (MSIV DOWNSTREAM) 2/2 CCF OF 3/4 MSIV 012/013/014 FAIL TO CLOSE PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB	2.4	32.5
10	1.99E-09	7.32E-03 1.01E-05 2.70E-02	%LSSB-D MSEVXQ4-011/12/13/14 PI-SGTR	LARGE SECONDARY SIDE BREAK (MSIV DOWNSTREAM) 2/2 CCF OF 4/4 MSIV 011/012/013/014 FAIL TO CLOSE PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB	2.0	34.4

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Table 19.1-31 (3 of 30)

Rank	Frequency (/yr)	Cutsets			Contribution to LRF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
11	1.34E-09	1.31E-03	%SGTR	STEAM GENERATOR TUBE RUPTURE	1.3	35.8
		3.98E-03	AFMPM2A-MDP02A	AFW MDP PP02A UNAVAILABLE DUE TO T/M		
		3.52E-02	AFTPR1A-TDP01A	AFW TDP PP01A FAILS TO RUN FOR > 1HR		
		3.55E-02	H-SDR-POSRV-3WAY	Operator Fails to Open POSRV and 3way Valve		
		1.41E-02	RCOPH-S-SDSE-FW	Operator Fails to Open POSRVs in Early Phase for F&B Operation		
		1.46E+01	COMBINATION_2248	HEP dependency factor for RCOPH-S-SDSE-FW,H-SDR-POSRV-3WAY		
12	8.41E-10	1.31E-03	%SGTR	STEAM GENERATOR TUBE RUPTURE	0.8	36.6
		3.52E-02	AFTPR1A-TDP01A	AFW TDP PP01A FAILS TO RUN FOR > 1HR		
		3.55E-02	H-SDR-POSRV-3WAY	Operator Fails to Open POSRV and 3way Valve		
		1.41E-02	RCOPH-S-SDSE-FW	Operator Fails to Open POSRVs in Early Phase for F&B Operation		
		2.50E-03	VOHVM2A-HV33A	CUBICLE COOLER HV33A UAVAILABLE DUE TO T&M		
		1.46E+01	COMBINATION_2248	HEP dependency factor for RCOPH-S-SDSE-FW,H-SDR-POSRV-3WAY		
13	7.64E-10	2.40E-03	%SLOCA	SMALL LOSS OF COOLANT ACCIDENT	0.8	37.4
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-NO	DBCOOL DET: DCOOL = NO		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (one in base case)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (low pressure branch)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Table 19.1-31 (4 of 30)

Rank	Frequency (/yr)	Cutsets			Contribution to LRF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
14	7.64E-10	2.40E-03	%SLOCA	SMALL LOSS OF COOLANT ACCIDENT	0.8	38.1
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-YES	DBCOOL DET: DCOOL = YES		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (one in base case)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (low pressure branch)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
15	5.56E-10	1.31E-03	%SGTR	STEAM GENERATOR TUBE RUPTURE	0.6	38.7
		7.10E-04	AFOPH-S-ALT-LT	Operator Fails to Transfer AFW Source From AFWST to RWT/CST		
		3.55E-02	H-SDR-POSRV-3WAY	Operator Fails to Open POSRV and 3way Valve		
		2.00E-02	PFLOOP-SI	CONDITIONAL LOOP AFTER INITIATORS WHICH INITIATE AN SI SIGNAL		
		8.10E-03	RCOPH-S-SDSL	OPERATOR FAILS TO OPEN 1 OF 4 SDS VALVE LATE PHASE		
		1.04E+02	COMBINATION_2244	HEP dependency factor for AFOPH-S-ALT-LT,RCOPH-S-SDSL,H-SDR-POSRV-3WAY		
16	5.54E-10	1.31E-03	%SGTR	STEAM GENERATOR TUBE RUPTURE	0.6	39.3
		3.52E-02	AFTPR1A-TDP01A	AFW TDP PP01A FAILS TO RUN FOR > 1HR		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
17	5.27E-10	6.55E-02	%LOFW	LOSS OF MAIN FEEDWATER	0.5	39.8
		2.98E-07	I-ATWS-RPMCF	CCF TO SCRAM DUE TO MECHANICAL FAILURES (1HR MT)		
		2.70E-02	PI-SGTR	PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB		

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Table 19.1-31 (5 of 30)

Rank	Frequency (/yr)	Cutsets			Contribution to LRF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
18	4.48E-10	5.57E-02	%LOCV	LOSS OF CONDENSER VACCUM	0.4	40.2
		2.98E-07	I-ATWS-RPMCF	CCF TO SCRAM DUE TO MECHANICAL FAILURES (1HR MT)		
		2.70E-02	PI-SGTR	PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB		
19	4.30E-10	4.85E-04	%MLOCA	MEDIUM LOSS OF COOLANT ACCIDENT	0.4	40.7
		1.70E-05	CCMVWD2-097/8	2/2 CCF OF CCW MOV V097/098 FAIL TO OPEN		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.20E-01	L2-PROB-RBCM-RUPTURE	RBCM DET: CFBRB = CFBRB-RUPT		
20	3.97E-10	4.85E-04	%MLOCA	MEDIUM LOSS OF COOLANT ACCIDENT	0.4	41.0
		1.70E-05	CCMVWD2-097/8	2/2 CCF OF CCW MOV V097/098 FAIL TO OPEN		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		4.80E-01	L2-PROB-RBCM-LEAK	RBCM DET: CFBRB = CFBRB-LEAK		
21	3.90E-10	1.31E-03	%SGTR	STEAM GENERATOR TUBE RUPTURE	0.4	41.4
		2.98E-07	I-ATWS-RPMCF	CCF TO SCRAM DUE TO MECHANICAL FAILURES (1HR MT)		
22	3.62E-10	4.85E-04	%MLOCA	MEDIUM LOSS OF COOLANT ACCIDENT	0.4	41.8
		1.43E-05	CSMVWD2-003/004	2/2 CCF OF ISOL. MOV 003/004 IN CS TRS HX DISCH. PATH FAIL TO OPEN		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.20E-01	L2-PROB-RBCM-RUPTURE	RBCM DET: CFBRB = CFBRB-RUPT		
23	3.34E-10	4.85E-04	%MLOCA	MEDIUM LOSS OF COOLANT ACCIDENT	0.3	42.1
		1.43E-05	CSMVWD2-003/004	2/2 CCF OF ISOL. MOV 003/004 IN CS TRS HX DISCH. PATH FAIL TO OPEN		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		4.80E-01	L2-PROB-RBCM-LEAK	RBCM DET: CFBRB = CFBRB-LEAK		

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Table 19.1-31 (6 of 30)

Rank	Frequency (/yr)	Cutsets			Contribution to LRF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
24	3.22E-10	1.31E-03	%SGTR	STEAM GENERATOR TUBE RUPTURE	0.3	42.5
		7.10E-04	AFOPH-S-ALT-LT	Operator Fails to Transfer AFW Source From AFWST to RWT/CST		
		4.21E-03	HR-SGTR-ISOL	Operator Fails to Isolate the Ruptured SG		
		2.00E-02	PFLOOP-SI	CONDITIONAL LOOP AFTER INITIATORS WHICH INITIATE AN SI SIGNAL		
		8.10E-03	RCOPH-S-SDSL	OPERATOR FAILS TO OPEN 1 OF 4 SDS VALVE LATE PHASE		
		5.08E+02	COMBINATION_2243	HEP dependency factor for HR-SGTR-ISOL, AFOPH-S-ALT-LT, RCOPH-S-SDSL		
25	3.15E-10	4.85E-04	%MLOCA	MEDIUM LOSS OF COOLANT ACCIDENT	0.3	42.8
		2.50E-02	DGDGR-C-DGC	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01C		
		2.50E-02	DGDGR-D-DGD	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01D		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.20E-01	L2-PROB-RBCM-RUPTURE	RBCM DET: CFBRB = CFBRB-RUPT		
		2.00E-02	PFLOOP-SI	CONDITIONAL LOOP AFTER INITIATORS WHICH INITIATE AN SI SIGNAL		
26	3.14E-10	1.31E-03	%SGTR	STEAM GENERATOR TUBE RUPTURE	0.3	43.1
		2.00E-02	PFLOOP-SI	CONDITIONAL LOOP AFTER INITIATORS WHICH INITIATE AN SI SIGNAL		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
27	3.07E-10	7.32E-03	%LSSB-D	LARGE SECONDARY SIDE BREAK (MSIV DOWNSTREAM)	0.3	43.4
		7.76E-05	MSEVWQ4-101/2/3/4	4/4 CCF OF MS ADVs 101/102/103/104 FAIL TO OPEN		
		2.00E-02	PFLOOP-SI	CONDITIONAL LOOP AFTER INITIATORS WHICH INITIATE AN SI SIGNAL		
		2.70E-02	PI-SGTR	PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB		

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Table 19.1-31 (7 of 30)

Rank	Frequency (/yr)	Cutsets			Contribution to LRF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
28	2.91E-10	4.85E-04	%MLOCA	MEDIUM LOSS OF COOLANT ACCIDENT	0.3	43.7
		2.50E-02	DGDGR-C-DGC	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01C		
		2.50E-02	DGDGR-D-DGD	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01D		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		4.80E-01	L2-PROB-RBCM-LEAK	RBCM DET: CFBRB = CFBRB-LEAK		
		2.00E-02	PFLOOP-SI	CONDITIONAL LOOP AFTER INITIATORS WHICH INITIATE AN SI SIGNAL		
29	2.90E-10	6.56E-01	%GTRN	GENERAL TRANSIENT	0.3	44.0
		2.70E-02	PI-SGTR	PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB		
		1.64E-08	RPRBWO8-TCBALL	8/8 CCF FAILURE OF ALL TRIP CIRCUIT BRAKER TCB		
30	2.79E-10	1.31E-03	%SGTR	STEAM GENERATOR TUBE RUPTURE	0.3	44.2
		3.52E-02	AFTPR1A-TDP01A	AFW TDP PP01A FAILS TO RUN FOR > 1HR		
		3.55E-02	H-SDR-POSRV-3WAY	Operator Fails to Open POSRV and 3way Valve		
		1.41E-02	RCOPH-S-SDSE-FW	Operator Fails to Open POSRVs in Early Phase for F&B Operation		
		8.29E-04	VOHVS2A-HV33A	FAILS TO START OF MAFP ROOM A CUBICLE COOLER HV33A		
		1.46E+01	COMBINATION_2248	HEP dependency factor for RCOPH-S-SDSE-FW,H-SDR-POSRV-3WAY		
31	2.69E-10	7.32E-03	%LSSB-D	LARGE SECONDARY SIDE BREAK (MSIV DOWNSTREAM)	0.3	44.5
		2.72E-03	DCBTM-B-BT01B	CLASS 1E 125V DC BATTERY BT01B UNAVAILABLE DUE TO T&M		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		2.00E-02	PFLOOP-SI	CONDITIONAL LOOP AFTER INITIATORS WHICH INITIATE AN SI SIGNAL		
		2.70E-02	PI-SGTR	PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB		

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Table 19.1-31 (8 of 30)

Rank	Frequency (/yr)	Cutsets			Contribution to LRF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
32	2.47E-10	1.31E-03	%SGTR	STEAM GENERATOR TUBE RUPTURE	0.2	44.8
		3.98E-03	AFMPM2A-MDP02A	AFW MDP PP02A UNAVAILABLE DUE TO T/M		
		6.49E-03	AFTPS1A-TDP01A	AFW TDP PP01A FAILS TO START		
		3.55E-02	H-SDR-POSRV-3WAY	Operator Fails to Open POSRV and 3way Valve		
		1.41E-02	RCOPH-S-SDSE-FW	Operator Fails to Open POSRVs in Early Phase for F&B Operation		
		1.46E+01	COMBINATION_2248	HEP dependency factor for RCOPH-S-SDSE-FW,H-SDR-POSRV-3WAY		
33	2.37E-10	7.32E-03	%LSSB-D	LARGE SECONDARY SIDE BREAK (MSIV DOWNSTREAM)	0.2	45.0
		1.00E-01	CVOPV-S-MV509	LOCAL MANUAL FTO MV-509 FOR IRWST REFILL AFTER SIGNAL FAILURE		
		2.70E-02	PI-SGTR	PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
34	2.37E-10	7.32E-03	%LSSB-D	LARGE SECONDARY SIDE BREAK (MSIV DOWNSTREAM)	0.2	45.2
		1.00E-01	MSOPV-S-MSIS	OPERATOR FAILS TO RECOVERY FOR MSIS		
		2.70E-02	PI-SGTR	PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB		
		1.20E-05	PPSO-AP-GC	CCF OF PPS GC APPLICATION SOFTWARE		
35	2.37E-10	7.32E-03	%LSSB-D	LARGE SECONDARY SIDE BREAK (MSIV DOWNSTREAM)	0.2	45.5
		1.00E-01	MSOPV-S-MSIS	OPERATOR FAILS TO RECOVERY FOR MSIS		
		2.70E-02	PI-SGTR	PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		

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Table 19.1-31 (9 of 30)

Rank	Frequency (/yr)	Cutsets			Contribution to LRF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
36	2.37E-10	7.32E-03	%LSSB-D	LARGE SECONDARY SIDE BREAK (MSIV DOWNSTREAM)	0.2	45.7
		2.70E-02	PI-SGTR	PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		1.00E-01	VKOPH-S-ECCS	OPERATOR FAILS TO ACTUATE ECCS EXHAUST FAN AH01A/B		
37	2.05E-10	1.31E-03	%SGTR	STEAM GENERATOR TUBE RUPTURE	0.2	45.9
		3.98E-03	AFMPM2A-MDP02A	AFW MDP PP02A UNAVAILABLE DUE TO T/M		
		5.39E-03	AFTPM1A-TDP01A	AFW TDP PP01A UNAVAILABLE DUE TO T/M		
		3.55E-02	H-SDR-POSRV-3WAY	Operator Fails to Open POSRV and 3way Valve		
		1.41E-02	RCOPH-S-SDSE-FW	Operator Fails to Open POSRVs in Early Phase for F&B Operation		
		1.46E+01	COMBINATION_2248	HEP dependency factor for RCOPH-S-SDSE-FW,H-SDR-POSRV-3WAY		
38	1.98E-10	7.32E-03	%LSSB-D	LARGE SECONDARY SIDE BREAK (MSIV DOWNSTREAM)	0.2	46.1
		9.94E-04	CVOPH-S-IRWST	OPERATOR FAILS TO REFILL THE IRWST VIA CVCS		
		3.72E-04	HR-RCSCD1-ISOL	Operator Fails to Take Action for SG Cooldown, RC Depressurization and SG Isolation		
		2.70E-02	PI-SGTR	PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB		
		5.36E-05	SIOPH-S-LTC-SC	Operator Fails to Align SCS For Long Term Cooling		
		5.04E+04	COMBINATION_2032	HEP dependency factor for HR-RCSCD1-ISOL,SIOPH-S-LTC-SC,CVOPH-S-IRWST		

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Table 19.1-31 (10 of 30)

Rank	Frequency (/yr)	Cutsets			Contribution to LRF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
39	1.98E-10	7.32E-03	%LSSB-D	LARGE SECONDARY SIDE BREAK (MSIV DOWNSTREAM)	0.2	46.3
		9.94E-04	CVOPH-S-IRWST	OPERATOR FAILS TO REFILL THE IRWST VIA CVCS		
		3.72E-04	HR-RCSCD1-ISOL	Operator Fails to Take Action for SG Cooldown, RC Depressurization and SG Isolation		
		1.30E-03	HR-RCSCD2	Operator Fails to Take Action for SG Cooldown, RC Depressurization		
		2.70E-02	PI-SGTR	PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB		
		2.08E+03	COMBINATION_2031	HEP dependency factor for HR-RCSCD1-ISOL,HR-RCSCD2,CVOPH-S-IRWST		
40	1.98E-10	7.32E-03	%LSSB-D	LARGE SECONDARY SIDE BREAK (MSIV DOWNSTREAM)	0.2	46.5
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		2.00E-03	IPINM-B-IN01B	CLASS 1E 120V AC INVERTER IN01B UNAVAILABLE DUE TO T&M		
		2.00E-02	PFLOOP-SI	CONDITIONAL LOOP AFTER INITIATORS WHICH INITIATE AN SI SIGNAL		
		2.70E-02	PI-SGTR	PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB		
41	1.95E-10	1.31E-03	%SGTR	STEAM GENERATOR TUBE RUPTURE	0.2	46.7
		2.04E-05	AFPVKQ2-TP01A/MP02A	2/4 CCF OF AFW TDP01A/MDP02A FAIL TO RUN		
		3.55E-02	H-SDR-POSRV-3WAY	Operator Fails to Open POSRV and 3way Valve		
		1.41E-02	RCOPH-S-SDSE-FW	Operator Fails to Open POSRVs in Early Phase for F&B Operation		
		1.46E+01	COMBINATION_2248	HEP dependency factor for RCOPH-S-SDSE-FW,H-SDR-POSRV-3WAY		

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Table 19.1-31 (11 of 30)

Rank	Frequency (/yr)	Cutsets			Contribution to LRF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
42	1.91E-10	1.31E-03	%SGTR	STEAM GENERATOR TUBE RUPTURE	0.2	46.9
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		3.55E-02	H-SDR-POSRV-3WAY	Operator Fails to Open POSRV and 3way Valve		
		2.00E-02	PFLOOP-SI	CONDITIONAL LOOP AFTER INITIATORS WHICH INITIATE AN SI SIGNAL		
		1.41E-02	RCOPH-S-SDSE-FW	Operator Fails to Open POSRVs in Early Phase for F&B Operation		
		4.00E-02	WOCHM2A-CH02A	ECW CHILLER 02A TRAIN UNAVAILABLE DUE TO T&M		
		1.46E+01	COMBINATION_2248	HEP dependency factor for RCOPH-S-SDSE-FW,H-SDR-POSRV-3WAY		
43	1.84E-10	7.32E-03	%LSSB-D	LARGE SECONDARY SIDE BREAK (MSIV DOWNSTREAM)	0.2	47.1
		2.50E-02	DGDGR-C-DGC	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01C		
		2.50E-02	DGDGR-D-DGD	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01D		
		7.45E-02	MSOPH-S-SGADV-HW	OPERATOR FAILS TO OPEN ADVS USING HAND WHEEL		
		2.00E-02	PFLOOP-SI	CONDITIONAL LOOP AFTER INITIATORS WHICH INITIATE AN SI SIGNAL		
		2.70E-02	PI-SGTR	PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB		
44	1.81E-10	4.85E-04	%MLOCA	MEDIUM LOSS OF COOLANT ACCIDENT	0.2	47.2
		1.44E-02	DGDGM-C-DGC	DG 01C UNAVAILABLE DUE TO T&M		
		2.50E-02	DGDGR-D-DGD	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01D		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.20E-01	L2-PROB-RBCM-RUPTURE	RBCM DET: CFBRB = CFBRB-RUPT		
		2.00E-02	PFLOOP-SI	CONDITIONAL LOOP AFTER INITIATORS WHICH INITIATE AN SI SIGNAL		

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Table 19.1-31 (12 of 30)

Rank	Frequency (/yr)	Cutsets			Contribution to LRF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
45	1.81E-10	4.85E-04	%MLOCA	MEDIUM LOSS OF COOLANT ACCIDENT	0.2	47.4
		1.44E-02	DGDGM-D-DGD	DG 01D UNAVAILABLE DUE TO T&M		
		2.50E-02	DGDGR-C-DGC	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01C		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.20E-01	L2-PROB-RBCM-RUPTURE	RBCM DET: CFBRB = CFBRB-RUPT		
		2.00E-02	PFLOOP-SI	CONDITIONAL LOOP AFTER INITIATORS WHICH INITIATE AN SI SIGNAL		
46	1.73E-10	7.32E-03	%LSSB-D	LARGE SECONDARY SIDE BREAK (MSIV DOWNSTREAM)	0.2	47.6
		4.10E-01	L2-PROB-RCSFAIL-1-2-LK	RCSFAIL DET - prob that SG-LEAK = 1OF2-LEAK		
		9.00E-01	L2-PROB-RCSFAIL-NOSG-DEP	RCSFAIL DET - prob that SGDEPRESS = NO-DEPRESS		
		9.76E-01	L2-PROB-RCSFAIL-NOSGSORV	RCSFAIL DET - prob that SGSORV = NO-DEPRESS		
		9.45E-01	L2-PROB-RCSFAIL-NO-SGTR-1D	RCSFAIL DET - prob that PI-SGTR = INTACT (1 SG depressurized)		
		8.89E-01	L2-PROB-RCSFAIL-NOSORV	RCSFAIL DET - probability that RCSSORV = Intact		
		5.00E-01	L2-PROB-RCSFAIL-RCSINT	RCSFAIL DET - prob that CSSORV_LATE = RCS-INTACT		
		1.30E-01	L2-PROB-TISGTR-B	RCSFAIL DET - prob that TI-SGTR = TI-SGTR (case B)		
		1.00E-01	MSOPV-S-MSIS	OPERATOR FAILS TO RECOVERY FOR MSIS		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		

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Table 19.1-31 (13 of 30)

Rank	Frequency (/yr)	Cutsets			Contribution to LRF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
47	1.73E-10	7.32E-03	%LSSB-D	LARGE SECONDARY SIDE BREAK (MSIV DOWNSTREAM)	0.2	47.8
		4.10E-01	L2-PROB-RCSFAIL-1-2-LK	RCSFAIL DET - prob that SG-LEAK = 1OF2-LEAK		
		9.00E-01	L2-PROB-RCSFAIL-NOSG-DEP	RCSFAIL DET - prob that SGDEPRESS = NO-DEPRESS		
		9.76E-01	L2-PROB-RCSFAIL-NOSGSORV	RCSFAIL DET - prob that SGSORV = NO-DEPRESS		
		9.45E-01	L2-PROB-RCSFAIL-NO-SGTR-1D	RCSFAIL DET - prob that PI-SGTR = INTACT (1 SG depressurized)		
		8.89E-01	L2-PROB-RCSFAIL-NOSORV	RCSFAIL DET - probability that RCSSORV = Intact		
		5.00E-01	L2-PROB-RCSFAIL-RCSINT	RCSFAIL DET - prob that CSSORV_LATE = RCS-INTACT		
		1.30E-01	L2-PROB-TISGTR-B	RCSFAIL DET - prob that TI-SGTR = TI-SGTR (case B)		
		1.00E-01	MSOPV-S-MSIS	OPERATOR FAILS TO RECOVERY FOR MSIS		
		1.20E-05	PPSO-AP-GC	CCF OF PPS GC APPLICATION SOFTWARE		
		1.41E-02	RCOPH-S-SDSE-FW	Operator Fails to Open POSRVs in Early Phase for F&B Operation		
		7.10E+01	COMBINATION_2038	HEP dependency factor for MSOPV-S-MSIS,RCOPH-S-SDSE-FW		
48	1.68E-10	1.31E-03	%SGTR	STEAM GENERATOR TUBE RUPTURE	0.2	47.9
		3.52E-02	AFTPR1A-TDP01A	AFW TDP PP01A FAILS TO RUN FOR > 1HR		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		3.55E-02	H-SDR-POSRV-3WAY	Operator Fails to Open POSRV and 3way Valve		
		2.00E-02	PFLOOP-SI	CONDITIONAL LOOP AFTER INITIATORS WHICH INITIATE AN SI SIGNAL		
		1.41E-02	RCOPH-S-SDSE-FW	Operator Fails to Open POSRVs in Early Phase for F&B Operation		
		1.46E+01	COMBINATION_2248	HEP dependency factor for RCOPH-S-SDSE-FW,H-SDR-POSRV-3WAY		

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Table 19.1-31 (14 of 30)

Rank	Frequency (/yr)	Cutsets			Contribution to LRF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
49	1.68E-10	1.31E-03	%SGTR	STEAM GENERATOR TUBE RUPTURE	0.2	48.1
		3.98E-03	AFMPM2A-MDP02A	AFW MDP PP02A UNAVAILABLE DUE TO T/M		
		4.42E-03	AFTPL1A-TDP01A	AFW TDP PP01A FAILS TO RUN FOR < 1HR		
		3.55E-02	H-SDR-POSRV-3WAY	Operator Fails to Open POSRV and 3way Valve		
		1.41E-02	RCOPH-S-SDSE-FW	Operator Fails to Open POSRVs in Early Phase for F&B Operation		
		1.46E+01	COMBINATION_2248	HEP dependency factor for RCOPH-S-SDSE-FW,H-SDR-POSRV-3WAY		
50	1.68E-10	4.85E-04	%MLOCA	MEDIUM LOSS OF COOLANT ACCIDENT	0.2	48.3
		1.44E-02	DGDGM-C-DGC	DG 01C UNAVAILABLE DUE TO T&M		
		2.50E-02	DGDGR-D-DGD	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01D		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		4.80E-01	L2-PROB-RBCM-LEAK	RBCM DET: CFBRB = CFBRB-LEAK		
		2.00E-02	PFLOOP-SI	CONDITIONAL LOOP AFTER INITIATORS WHICH INITIATE AN SI SIGNAL		
51	1.68E-10	4.85E-04	%MLOCA	MEDIUM LOSS OF COOLANT ACCIDENT	0.2	48.4
		1.44E-02	DGDGM-D-DGD	DG 01D UNAVAILABLE DUE TO T&M		
		2.50E-02	DGDGR-C-DGC	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01C		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		4.80E-01	L2-PROB-RBCM-LEAK	RBCM DET: CFBRB = CFBRB-LEAK		
		2.00E-02	PFLOOP-SI	CONDITIONAL LOOP AFTER INITIATORS WHICH INITIATE AN SI SIGNAL		

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Table 19.1-31 (15 of 30)

Rank	Frequency (/yr)	Cutsets			Contribution to LRF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
52	1.60E-10	2.34E-04	%TLOCCW	TOTAL LOSS OF COMPONENT COOLING WATER	0.2	48.6
		3.52E-02	AFTPR1A-TDP01A	AFW TDP PP01A FAILS TO RUN FOR > 1HR		
		3.52E-02	AFTPR1B-TDP01B	AFW TDP PP01B FAILS TO RUN FOR > 1HR		
		2.11E-02	FWOPH-S-ERY	Operate Fails to Align Startup Feedwater pump PP07 (Early Phase)		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-NO	DBCOOL DET: DCOOL = NO		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (one in base case)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (low pressure branch)		
53	1.60E-10	2.34E-04	%TLOCCW	TOTAL LOSS OF COMPONENT COOLING WATER	0.2	48.8
		3.52E-02	AFTPR1A-TDP01A	AFW TDP PP01A FAILS TO RUN FOR > 1HR		
		3.52E-02	AFTPR1B-TDP01B	AFW TDP PP01B FAILS TO RUN FOR > 1HR		
		2.11E-02	FWOPH-S-ERY	Operate Fails to Align Startup Feedwater pump PP07 (Early Phase)		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-YES	DBCOOL DET: DCOOL = YES		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (one in base case)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (low pressure branch)		

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Table 19.1-31 (16 of 30)

Rank	Frequency (/yr)	Cutsets			Contribution to LRF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
54	1.60E-10	2.34E-04	%TLOESW	TOTAL LOSS OF ESSENTIAL SERVICE WATER	0.2	48.9
		3.52E-02	AFTPR1A-TDP01A	AFW TDP PP01A FAILS TO RUN FOR > 1HR		
		3.52E-02	AFTPR1B-TDP01B	AFW TDP PP01B FAILS TO RUN FOR > 1HR		
		2.11E-02	FWOPH-S-ERY	Operate Fails to Align Startup Feedwater pump PP07 (Early Phase)		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-NO	DBCOOL DET: DCOOL = NO		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (one in base case)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (low pressure branch)		
55	1.60E-10	2.34E-04	%TLOESW	TOTAL LOSS OF ESSENTIAL SERVICE WATER	0.2	49.1
		3.52E-02	AFTPR1A-TDP01A	AFW TDP PP01A FAILS TO RUN FOR > 1HR		
		3.52E-02	AFTPR1B-TDP01B	AFW TDP PP01B FAILS TO RUN FOR > 1HR		
		2.11E-02	FWOPH-S-ERY	Operate Fails to Align Startup Feedwater pump PP07 (Early Phase)		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-YES	DBCOOL DET: DCOOL = YES		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (one in base case)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (low pressure branch)		

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Table 19.1-31 (17 of 30)

Rank	Frequency (/yr)	Cutsets			Contribution to LRF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
56	1.58E-10	4.85E-04	%MLOCA	MEDIUM LOSS OF COOLANT ACCIDENT	0.2	49.2
		2.50E-03	CSHEM2A-HE01A	CS HX HE01A FAILS DUE TO T&M		
		2.50E-03	CSHEM2B-HE01B	CS HX HE01B FAILS DUE TO TEST/MAINTENANCE		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.20E-01	L2-PROB-RBCM-RUPTURE	RBCM DET: CFBRB = CFBRB-RUPT		
57	1.55E-10	1.31E-03	%SGTR	STEAM GENERATOR TUBE RUPTURE	0.2	49.4
		6.49E-03	AFTPS1A-TDP01A	AFW TDP PP01A FAILS TO START		
		3.55E-02	H-SDR-POSRV-3WAY	Operator Fails to Open POSRV and 3way Valve		
		1.41E-02	RCOPH-S-SDSE-FW	Operator Fails to Open POSRVs in Early Phase for F&B Operation		
		2.50E-03	VOHVM2A-HV33A	CUBICLE COOLER HV33A UNAVAILABLE DUE TO T&M		
		1.46E+01	COMBINATION_2248	HEP dependency factor for RCOPH-S-SDSE-FW,H-SDR-POSRV-3WAY		
58	1.55E-10	7.32E-03	%LSSB-D	LARGE SECONDARY SIDE BREAK (MSIV DOWNSTREAM)	0.2	49.5
		2.72E-03	DCBTM-B-BT01B	CLASS 1E 125V DC BATTERY BT01B UNAVAILABLE DUE TO T&M		
		1.44E-02	DGDGM-A-DGA	DG 01A UNAVAILABLE DUE TO T&M		
		2.00E-02	PFLOOP-SI	CONDITIONAL LOOP AFTER INITIATORS WHICH INITIATE AN SI SIGNAL		
		2.70E-02	PI-SGTR	PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB		

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Table 19.1-31 (18 of 30)

Rank	Frequency (/yr)	Cutsets			Contribution to LRF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
59	1.55E-10	4.85E-04	%MLOCA	MEDIUM LOSS OF COOLANT ACCIDENT	0.2	49.7
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-NO	DBCOOL DET: DCOOL = NO		
		1.00E+00	L2-PROB-ECFDCH-INT	ECF DET: ECFDCH = INT		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (one in base case)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (low pressure branch)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
60	1.55E-10	4.85E-04	%MLOCA	MEDIUM LOSS OF COOLANT ACCIDENT	0.2	49.9
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-NO	DBCOOL DET: DCOOL = NO		
		1.00E+00	L2-PROB-ECFDCH-INT	ECF DET: ECFDCH = INT		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (one in base case)		
		9.99E-01	L2-PROB-NODCF-MED-P	DCF DET: DCFMODE = NO DCF (medium pressure branch)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
61	1.55E-10	4.85E-04	%MLOCA	MEDIUM LOSS OF COOLANT ACCIDENT	0.2	50.0
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-YES	DBCOOL DET: DCOOL = YES		
		1.00E+00	L2-PROB-ECFDCH-INT	ECF DET: ECFDCH = INT		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (one in base case)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (low pressure branch)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Table 19.1-31 (19 of 30)

Rank	Frequency (/yr)	Cutsets			Contribution to LRF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
62	1.55E-10	4.85E-04 1.00E-01 5.00E-01 1.00E+00 5.23E-01 1.00E+00 9.99E-01 1.22E-05	%MLOCA L2-PROB-CSRECSBS-NO L2-PROB-DCOOL-YES L2-PROB-ECFDCH-INT L2-PROB-LCF-WOB-RUPT L2-PROB-MELTSTOP-MTSTOP L2-PROB-NODCF-MED-P SISPP-S-IRWST	MEDIUM LOSS OF COOLANT ACCIDENT MELTSTOP DET: CSRECSBS = NO DBCOOL DET: DCOOL = YES ECF DET: ECFDCH = INT DET LCF: LCFWOB = RUPTURE MELTSTOP: NOMELTSTOP = MTSTOP (one in base case) DCF DET: DCFMODE = NO DCF (medium pressure branch) CCF OF IRWST SUMPS DUE TO PLUGGING	0.2	50.2
63	1.54E-10	4.85E-04 1.00E-01 5.00E-01 9.99E-01 5.23E-01 1.00E+00 9.99E-01 1.22E-05	%MLOCA L2-PROB-CSRECSBS-NO L2-PROB-DCOOL-NO L2-PROB-ECFEVSE-INT-A L2-PROB-LCF-WOB-RUPT L2-PROB-MELTSTOP-MTSTOP L2-PROB-NODCF-LOW-P SISPP-S-IRWST	MEDIUM LOSS OF COOLANT ACCIDENT MELTSTOP DET: CSRECSBS = NO DBCOOL DET: DCOOL = NO ECF DET: ECFEVSE = INT (CASE A) DET LCF: LCFWOB = RUPTURE MELTSTOP: NOMELTSTOP = MTSTOP (one in base case) DCF DET: DCFMODE = NO DCF (low pressure branch) CCF OF IRWST SUMPS DUE TO PLUGGING	0.2	50.3
64	1.54E-10	4.85E-04 1.00E-01 5.00E-01 9.99E-01 5.23E-01 1.00E+00 9.99E-01 1.22E-05	%MLOCA L2-PROB-CSRECSBS-NO L2-PROB-DCOOL-NO L2-PROB-ECFEVSE-INT-A L2-PROB-LCF-WOB-RUPT L2-PROB-MELTSTOP-MTSTOP L2-PROB-NODCF-MED-P SISPP-S-IRWST	MEDIUM LOSS OF COOLANT ACCIDENT MELTSTOP DET: CSRECSBS = NO DBCOOL DET: DCOOL = NO ECF DET: ECFEVSE = INT (CASE A) DET LCF: LCFWOB = RUPTURE MELTSTOP: NOMELTSTOP = MTSTOP (one in base case) DCF DET: DCFMODE = NO DCF (medium pressure branch) CCF OF IRWST SUMPS DUE TO PLUGGING	0.2	50.5

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Table 19.1-31 (20 of 30)

Rank	Frequency (/yr)	Cutsets			Contribution to LRF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
65	1.54E-10	4.85E-04	%MLOCA	MEDIUM LOSS OF COOLANT ACCIDENT	0.2	50.6
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-YES	DBCOOL DET: DCOOL = YES		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (one in base case)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (low pressure branch)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
66	1.54E-10	4.85E-04	%MLOCA	MEDIUM LOSS OF COOLANT ACCIDENT	0.2	50.8
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-YES	DBCOOL DET: DCOOL = YES		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (one in base case)		
		9.99E-01	L2-PROB-NODCF-MED-P	DCF DET: DCFMODE = NO DCF (medium pressure branch)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
67	1.46E-10	4.85E-04	%MLOCA	MEDIUM LOSS OF COOLANT ACCIDENT	0.1	50.9
		2.50E-03	CSHEM2A-HE01A	CS HX HE01A FAILS DUE TO T&M		
		2.50E-03	CSHEM2B-HE01B	CS HX HE01B FAILS DUE TO TEST/MAINTENANCE		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		4.80E-01	L2-PROB-RBCM-LEAK	RBCM DET: CFBRB = CFBRB-LEAK		

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Table 19.1-31 (21 of 30)

Rank	Frequency (/yr)	Cutsets			Contribution to LRF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
68	1.43E-10	6.56E-01	%GTRN	GENERAL TRANSIENT	0.1	51.1
		2.70E-02	PI-SGTR	PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB		
		8.09E-09	RPRBWO4-TCB-AB1AC2	4/8 CCF OF TCB A-1/B-1/A-2/C-2 FAIL TO OPEN		
69	1.43E-10	6.56E-01	%GTRN	GENERAL TRANSIENT	0.1	51.2
		2.70E-02	PI-SGTR	PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB		
		8.09E-09	RPRBWO4-TCB-AB1BD2	4/8 CCF OF TCB A-1/B-1/B-2 D-2 FAIL TO OPEN		
70	1.43E-10	6.56E-01	%GTRN	GENERAL TRANSIENT	0.1	51.4
		2.70E-02	PI-SGTR	PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB		
		8.09E-09	RPRBWO4-TCB-CD1AC2	4/8 CCF OF TCB C-1/D-1/A-2 C-2 FAIL TO OPEN		
71	1.43E-10	6.56E-01	%GTRN	GENERAL TRANSIENT	0.1	51.5
		2.70E-02	PI-SGTR	PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB		
		8.09E-09	RPRBWO4-TCB-CD1BD2	4/8 CCF OF TCB C-1/D-1/B-2/D-2 FAIL TO OPEN		

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Table 19.1-31 (22 of 30)

Rank	Frequency (/yr)	Cutsets			Contribution to LRF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
72	1.29E-10	3.71E-03	%LOOP-WE	WEATHER-RELATED LOOP	0.1	51.6
		1.57E-01	DATGR-S-AACTG	FAILS TO RUN AAC GAS TURBINE GENERATOR		
		5.95E-05	DGDGKQ4-DG01ABCD	4/4 CCF OF EDG 01A/01B/01C/01D FAIL TO RUN		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-NO	DBCOOL DET: DCOOL = NO		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		9.00E-01	L2-PROB-RCSFAIL-HLFAIL	RCSFAIL DET - prob that HLFAIL = HLFAIL		
		1.59E-01	RAC-16H-WE	NON-RECOVERY PROBABILITY OF OFFSITE POWER WITHIN 16HR (WEATHER RELATED)		
73	1.29E-10	3.71E-03	%LOOP-WE	WEATHER-RELATED LOOP	0.1	51.8
		1.57E-01	DATGR-S-AACTG	FAILS TO RUN AAC GAS TURBINE GENERATOR		
		5.95E-05	DGDGKQ4-DG01ABCD	4/4 CCF OF EDG 01A/01B/01C/01D FAIL TO RUN		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-YES	DBCOOL DET: DCOOL = YES		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		9.00E-01	L2-PROB-RCSFAIL-HLFAIL	RCSFAIL DET - prob that HLFAIL = HLFAIL		
		1.59E-01	RAC-16H-WE	NON-RECOVERY PROBABILITY OF OFFSITE POWER WITHIN 16HR (WEATHER RELATED)		

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Table 19.1-31 (23 of 30)

Rank	Frequency (/yr)	Cutsets			Contribution to LRF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
74	1.29E-10	1.31E-03	%SGTR	STEAM GENERATOR TUBE RUPTURE	0.1	51.9
		5.39E-03	AFTPM1A-TDP01A	AFW TDP PP01A UNAVAILABLE DUE TO T/M		
		3.55E-02	H-SDR-POSRV-3WAY	Operator Fails to Open POSRV and 3way Valve		
		1.41E-02	RCOPH-S-SDSE-FW	Operator Fails to Open POSRVs in Early Phase for F&B Operation		
		2.50E-03	VOHVM2A-HV33A	CUBICLE COOLER HV33A UNAVAILABLE DUE TO T&M		
		1.46E+01	COMBINATION_2248	HEP dependency factor for RCOPH-S-SDSE-FW,H-SDR-POSRV-3WAY		
75	1.26E-10	1.31E-03	%SGTR	STEAM GENERATOR TUBE RUPTURE	0.1	52.0
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		3.55E-02	H-SDR-POSRV-3WAY	Operator Fails to Open POSRV and 3way Valve		
		2.00E-02	PFLOOP-SI	CONDITIONAL LOOP AFTER INITIATORS WHICH INITIATE AN SI SIGNAL		
		1.41E-02	RCOPH-S-SDSE-FW	Operator Fails to Open POSRVs in Early Phase for F&B Operation		
		2.64E-02	SXMPM2A-PP02A	ESW PUMP PP02A UNAVAILABLE DUE TO T/M		
		1.46E+01	COMBINATION_2248	HEP dependency factor for RCOPH-S-SDSE-FW,H-SDR-POSRV-3WAY		
76	1.23E-10	4.85E-04	%MLOCA	MEDIUM LOSS OF COOLANT ACCIDENT	0.1	52.1
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.20E-01	L2-PROB-RBCM-RUPTURE	RBCM DET: CFBRB = CFBRB-RUPT		
		4.86E-06	WOCHKQ4-CH01A/1B/2A/2B	4/4 CCF OF ECW CHILLERS 1A/2A/1B/2B FAIL TO RUN		

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Table 19.1-31 (24 of 30)

Rank	Frequency (/yr)	Cutsets			Contribution to LRF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
77	1.21E-10	3.71E-03	%LOOP-WE	WEATHER-RELATED LOOP	0.1	52.2
		1.57E-01	DATGR-S-AACTG	FAILS TO RUN AAC GAS TURBINE GENERATOR		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-NO	DBCOOL DET: DCOOL = NO		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		9.00E-01	L2-PROB-RCSFAIL-HLFAIL	RCSFAIL DET - prob that HLFAIL = HLFAIL		
		1.59E-01	RAC-16H-WE	NON-RECOVERY PROBABILITY OF OFFSITE POWER WITHIN 16HR (WEATHER RELATED)		
		5.57E-05	SXFLP-S-FT0123AB	CCF OF ALL ESW DERIS FILTERS DUE TO PLUGGING		
78	1.21E-10	3.71E-03	%LOOP-WE	WEATHER-RELATED LOOP	0.1	52.4
		1.57E-01	DATGR-S-AACTG	FAILS TO RUN AAC GAS TURBINE GENERATOR		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-YES	DBCOOL DET: DCOOL = YES		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		9.00E-01	L2-PROB-RCSFAIL-HLFAIL	RCSFAIL DET - prob that HLFAIL = HLFAIL		
		1.59E-01	RAC-16H-WE	NON-RECOVERY PROBABILITY OF OFFSITE POWER WITHIN 16HR (WEATHER RELATED)		
		5.57E-05	SXFLP-S-FT0123AB	CCF OF ALL ESW DERIS FILTERS DUE TO PLUGGING		
79	1.20E-10	7.32E-03	%LSSB-D	LARGE SECONDARY SIDE BREAK (MSIV DOWNSTREAM)	0.1	52.5
		7.79E-04	MSEVC-C-MSIV011	SG1 MSIV 011 FAILS TO CLOSE		
		7.79E-04	MSEVC-C-MSIV013	SG2 MSIV 013 FAILS TO CLOSE		
		2.70E-02	PI-SGTR	PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB		

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Table 19.1-31 (25 of 30)

Rank	Frequency (/yr)	Cutsets			Contribution to LRF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
80	1.20E-10	7.32E-03	%LSSB-D	LARGE SECONDARY SIDE BREAK (MSIV DOWNSTREAM)	0.1	52.6
		7.79E-04	MSEVC-C-MSIV011	SG1 MSIV 011 FAILS TO CLOSE		
		7.79E-04	MSEVC-D-MSIV014	SG2 MSIV 014 FAILS TO CLOSE		
		2.70E-02	PI-SGTR	PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB		
81	1.20E-10	7.32E-03	%LSSB-D	LARGE SECONDARY SIDE BREAK (MSIV DOWNSTREAM)	0.1	52.7
		7.79E-04	MSEVC-C-MSIV013	SG2 MSIV 013 FAILS TO CLOSE		
		7.79E-04	MSEVC-D-MSIV012	SG1 MSIV 012 FAILS TO CLOSE		
		2.70E-02	PI-SGTR	PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB		
82	1.20E-10	7.32E-03	%LSSB-D	LARGE SECONDARY SIDE BREAK (MSIV DOWNSTREAM)	0.1	52.8
		7.79E-04	MSEVC-D-MSIV012	SG1 MSIV 012 FAILS TO CLOSE		
		7.79E-04	MSEVC-D-MSIV014	SG2 MSIV 014 FAILS TO CLOSE		
		2.70E-02	PI-SGTR	PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB		
83	1.20E-10	1.31E-03	%SGTR	STEAM GENERATOR TUBE RUPTURE	0.1	53.0
		3.98E-03	AFMPM2A-MDP02A	AFW MDP PP02A UNAVAILABLE DUE TO T/M		
		3.52E-02	AFTPR1A-TDP01A	AFW TDP PP01A FAILS TO RUN FOR > 1HR		
		4.21E-03	HR-SGTR-ISOL	Operator Fails to Isolate the Ruptured SG		
		1.41E-02	RCOPH-S-SDSE-FW	Operator Fails to Open POSRVs in Early Phase for F&B Operation		
		1.10E+01	COMBINATION_2247	HEP dependency factor for HR-SGTR-ISOL,RCOPH-S-SDSE-FW		

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Table 19.1-31 (26 of 30)

Rank	Frequency (/yr)	Cutsets			Contribution to LRF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
84	1.19E-10	1.31E-03	%SGTR	STEAM GENERATOR TUBE RUPTURE	0.1	53.1
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		2.50E-02	DGDGR-C-DGC	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01C		
		3.55E-02	H-SDR-POSRV-3WAY	Operator Fails to Open POSRV and 3way Valve		
		2.00E-02	PFLOOP-SI	CONDITIONAL LOOP AFTER INITIATORS WHICH INITIATE AN SI SIGNAL		
		1.41E-02	RCOPH-S-SDSE-FW	Operator Fails to Open POSRVs in Early Phase for F&B Operation		
		1.46E+01	COMBINATION_2248	HEP dependency factor for RCOPH-S-SDSE-FW,H-SDR-POSRV-3WAY		
85	1.16E-10	4.85E-04	%MLOCA	MEDIUM LOSS OF COOLANT ACCIDENT	0.1	53.2
		2.00E-02	PFLOOP-SI	CONDITIONAL LOOP AFTER INITIATORS WHICH INITIATE AN SI SIGNAL		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
86	1.14E-10	7.32E-03	%LSSB-D	LARGE SECONDARY SIDE BREAK (MSIV DOWNSTREAM)	0.1	53.3
		1.44E-02	DGDGM-A-DGA	DG 01A UNAVAILABLE DUE TO T&M		
		2.00E-03	IPINM-B-IN01B	CLASS 1E 120V AC INVERTER IN01B UNAVAILABLE DUE TO T&M		
		2.00E-02	PFLOOP-SI	CONDITIONAL LOOP AFTER INITIATORS WHICH INITIATE AN SI SIGNAL		
		2.70E-02	PI-SGTR	PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB		
87	1.13E-10	4.85E-04	%MLOCA	MEDIUM LOSS OF COOLANT ACCIDENT	0.1	53.4
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		4.80E-01	L2-PROB-RBCM-LEAK	RBCM DET: CFBRB = CFBRB-LEAK		
		4.86E-06	WOCHKQ4-CH01A/1B/2A/2B	4/4 CCF OF ECW CHILLERS 1A/2A/1B/2B FAIL TO RUN		

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Table 19.1-31 (27 of 30)

Rank	Frequency (/yr)	Cutsets			Contribution to LRF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
88	1.10E-10	1.31E-03	%SGTR	STEAM GENERATOR TUBE RUPTURE	0.1	53.5
		1.44E-02	DGDGM-A-DGA	DG 01A UNAVAILABLE DUE TO T&M		
		3.55E-02	H-SDR-POSRV-3WAY	Operator Fails to Open POSRV and 3way Valve		
		2.00E-02	PFLOOP-SI	CONDITIONAL LOOP AFTER INITIATORS WHICH INITIATE AN SI SIGNAL		
		1.41E-02	RCOPH-S-SDSE-FW	Operator Fails to Open POSRVs in Early Phase for F&B Operation		
		4.00E-02	WOCHM2A-CH02A	ECW CHILLER 02A TRAIN UNAVAILABLE DUE TO T&M		
		1.46E+01	COMBINATION_2248	HEP dependency factor for RCOPH-S-SDSE-FW,H-SDR-POSRV-3WAY		
89	1.06E-10	7.32E-03	%LSSB-D	LARGE SECONDARY SIDE BREAK (MSIV DOWNSTREAM)	0.1	53.6
		1.44E-02	DGDGM-C-DGC	DG 01C UNAVAILABLE DUE TO T&M		
		2.50E-02	DGDGR-D-DGD	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01D		
		7.45E-02	MSOPH-S-SGADV-HW	OPERATOR FAILS TO OPEN ADVS USING HAND WHEEL		
		2.00E-02	PFLOOP-SI	CONDITIONAL LOOP AFTER INITIATORS WHICH INITIATE AN SI SIGNAL		
		2.70E-02	PI-SGTR	PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB		
90	1.06E-10	7.32E-03	%LSSB-D	LARGE SECONDARY SIDE BREAK (MSIV DOWNSTREAM)	0.1	53.7
		1.44E-02	DGDGM-D-DGD	DG 01D UNAVAILABLE DUE TO T&M		
		2.50E-02	DGDGR-C-DGC	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01C		
		7.45E-02	MSOPH-S-SGADV-HW	OPERATOR FAILS TO OPEN ADVS USING HAND WHEEL		
		2.00E-02	PFLOOP-SI	CONDITIONAL LOOP AFTER INITIATORS WHICH INITIATE AN SI SIGNAL		
		2.70E-02	PI-SGTR	PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB		

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Rank	Frequency (/yr)	Cutsets			Contribution to LRF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
91	1.06E-10	1.31E-03	%SGTR	STEAM GENERATOR TUBE RUPTURE	0.1	53.9
		1.11E-05	AFPVKQ4-TP01A/B/MP02A/B	4/4 CCF OF AFW TDP01A/B/MDP02A/B FAIL TO RUN		
		3.55E-02	H-SDR-POSRV-3WAY	Operator Fails to Open POSRV and 3way Valve		
		1.41E-02	RCOPH-S-SDSE-FW	Operator Fails to Open POSRVs in Early Phase for F&B Operation		
		1.46E+01	COMBINATION_2248	HEP dependency factor for RCOPH-S-SDSE-FW,H-SDR-POSRV-3WAY		
92	1.06E-10	1.31E-03	%SGTR	STEAM GENERATOR TUBE RUPTURE	0.1	54.0
		4.42E-03	AFTPL1A-TDP01A	AFW TDP PP01A FAILS TO RUN FOR < 1HR		
		3.55E-02	H-SDR-POSRV-3WAY	Operator Fails to Open POSRV and 3way Valve		
		1.41E-02	RCOPH-S-SDSE-FW	Operator Fails to Open POSRVs in Early Phase for F&B Operation		
		2.50E-03	VOHVM2A-HV33A	CUBICLE COOLER HV33A UNAVAILABLE DUE TO T&M		
93	1.05E-10	1.46E+01	COMBINATION_2248	HEP dependency factor for RCOPH-S-SDSE-FW,H-SDR-POSRV-3WAY	0.1	54.1
		4.85E-04	%MLOCA	MEDIUM LOSS OF COOLANT ACCIDENT		
		1.44E-02	DGDGM-C-DGC	DG 01C UNAVAILABLE DUE TO T&M		
		1.44E-02	DGDGM-D-DGD	DG 01D UNAVAILABLE DUE TO T&M		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
94	1.04E-10	5.20E-01	L2-PROB-RBCM-RUPTURE	RBCM DET: CFBRB = CFBRB-RUPT	0.1	54.2
		2.00E-02	PFLOOP-SI	CONDITIONAL LOOP AFTER INITIATORS WHICH INITIATE AN SI SIGNAL		
		4.85E-04	%MLOCA	MEDIUM LOSS OF COOLANT ACCIDENT		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.20E-01	L2-PROB-RBCM-RUPTURE	RBCM DET: CFBRB = CFBRB-RUPT		
		4.14E-06	SIMPWQ4-CSP1A/B/SCP1A/B	4/4 CCF OF CSP PP01A/PP01B AND SCP PP01A/PP01B FAIL TO START		

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Table 19.1-31 (29 of 30)

Rank	Frequency (/yr)	Cutsets			Contribution to LRF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
95	1.04E-10	6.56E-01	%GTRN	GENERAL TRANSIENT	0.1	54.3
		2.98E-07	I-ATWS-RPMCF	CCF TO SCRAM DUE TO MECHANICAL FAILURES (1HR MT)		
		4.10E-01	L2-PROB-RCSFAIL-1-2-LK	RCSFAIL DET - prob that SG-LEAK = 1OF2-LEAK		
		9.00E-01	L2-PROB-RCSFAIL-NOSG-DEP	RCSFAIL DET - prob that SGDEPRESS = NO-DEPRESS		
		9.76E-01	L2-PROB-RCSFAIL-NOSGSORV	RCSFAIL DET - prob that SGSORV = NO-DEPRESS		
		9.45E-01	L2-PROB-RCSFAIL-NO-SGTR-1D	RCSFAIL DET - prob that PI-SGTR = INTACT (1 SG depressurized)		
		8.89E-01	L2-PROB-RCSFAIL-NOSORV	RCSFAIL DET - probability that RCSSORV = Intact		
		5.00E-01	L2-PROB-RCSFAIL-RCSINT	RCSFAIL DET - prob that CSSORV_LATE = RCS-INTACT		
		1.30E-01	L2-PROB-TISGTR-B	RCSFAIL DET - prob that TI-SGTR = TI-SGTR (case B)		
		2.70E-02	MTC-UET-TTS-0PF	ADVERSE MTC UET PERCENTAGE GIVEN TURBINE TRIP WHEN NO POSRVS FAIL		
96	1.02E-10	1.31E-03	%SGTR	STEAM GENERATOR TUBE RUPTURE	0.1	54.4
		6.49E-03	AFTPS1A-TDP01A	AFW TDP PP01A FAILS TO START		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
97	9.93E-11	1.31E-03	%SGTR	STEAM GENERATOR TUBE RUPTURE	0.1	54.5
		3.55E-02	H-SDR-POSRV-3WAY	Operator Fails to Open POSRV and 3way Valve		
		2.00E-02	PFLOOP-SI	CONDITIONAL LOOP AFTER INITIATORS WHICH INITIATE AN SI SIGNAL		
		1.41E-02	RCOPH-S-SDSE-FW	Operator Fails to Open POSRVs in Early Phase for F&B Operation		
		4.00E-02	WOCHM2A-CH02A	ECW CHILLER 02A TRAIN UNAVAILABLE DUE TO T&M		
		1.30E-02	WOCHS1A-CH01A	FAILS TO START ECW CHILLER CH01A		
		1.46E+01	COMBINATION_2248	HEP dependency factor for RCOPH-S-SDSE-FW,H-SDR-POSRV-3WAY		

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Table 19.1-31 (30 of 30)

Rank	Frequency (/yr)	Cutsets			Contribution to LRF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
98	9.69E-11	1.31E-03	%SGTR	STEAM GENERATOR TUBE RUPTURE	0.1	54.6
		3.52E-02	AFTPR1A-TDP01A	AFW TDP PP01A FAILS TO RUN FOR > 1HR		
		1.44E-02	DGDGM-A-DGA	DG 01A UNAVAILABLE DUE TO T&M		
		3.55E-02	H-SDR-POSRV-3WAY	Operator Fails to Open POSRV and 3way Valve		
		2.00E-02	PFLOOP-SI	CONDITIONAL LOOP AFTER INITIATORS WHICH INITIATE AN SI SIGNAL		
		1.41E-02	RCOPH-S-SDSE-FW	Operator Fails to Open POSRVs in Early Phase for F&B Operation		
		1.46E+01	COMBINATION_2248	HEP dependency factor for RCOPH-S-SDSE-FW,H-SDR-POSRV-3WAY		
99	9.65E-11	4.85E-04	%MLOCA	MEDIUM LOSS OF COOLANT ACCIDENT	0.1	54.7
		1.44E-02	DGDGM-C-DGC	DG 01C UNAVAILABLE DUE TO T&M		
		1.44E-02	DGDGM-D-DGD	DG 01D UNAVAILABLE DUE TO T&M		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		4.80E-01	L2-PROB-RBCM-LEAK	RBCM DET: CFBRB = CFBRB-LEAK		
		2.00E-02	PFLOOP-SI	CONDITIONAL LOOP AFTER INITIATORS WHICH INITIATE AN SI SIGNAL		
100	9.63E-11	4.85E-04	%MLOCA	MEDIUM LOSS OF COOLANT ACCIDENT	0.1	54.8
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		4.80E-01	L2-PROB-RBCM-LEAK	RBCM DET: CFBRB = CFBRB-LEAK		
		4.14E-06	SIMPWQ4-CSP1A/B/SCP1A/B	4/4 CCF OF CSP PP01A/PP01B AND SCP PP01A/PP01B FAIL TO START		

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Internal Flooding PRA Top 100 CDF Cutsets

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
1	9.07E-09	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	2.3	2.3
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1B,1C,1D FAIL TO OPEN		
2	8.68E-09	3.18E-04	%IE-100-20A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A20A	2.2	4.4
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1B,1C,1D FAIL TO OPEN		
3	7.73E-09	2.83E-04	%IE-078-19A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19A	1.9	6.4
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1B,1C,1D FAIL TO OPEN		
4	5.65E-09	2.07E-04	%IE-078-44B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A44B	1.4	7.8
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1B,1C,1D FAIL TO OPEN		
5	5.49E-09	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	1.4	9.2
		1.65E-05	PFHBWQ3-SW2OUATACD	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1C,1D FAIL TO OPEN		
6	5.26E-09	3.18E-04	%IE-100-20A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A20A	1.3	10.5
		1.65E-05	PFHBWQ3-SW2OUATBCD	CCF OF PCB BETWEEN UAT & 4.16kV SW01B,1C,1D FAIL TO OPEN		
7	4.68E-09	2.83E-04	%IE-078-19A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19A	1.2	11.6
		1.65E-05	PFHBWQ3-SW2OUATBCD	CCF OF PCB BETWEEN UAT & 4.16kV SW01B,1C,1D FAIL TO OPEN		
8	4.42E-09	1.62E-04	%IE-078-01D-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A01D	1.1	12.7
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1B,1C,1D FAIL TO OPEN		

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Table 19.1-66 (2 of 28)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
9	3.98E-09	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	1.0	13.7
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
10	3.82E-09	3.18E-04	%IE-100-20A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A20A	1.0	14.7
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
11	3.47E-09	1.27E-04	%IE-078-19B-FP-M	THE FLOOD INITIATING EVENT FOR A MODERATE BREAK OF FP PIPING IN ROOM 078-A19B	0.9	15.6
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1B,1C,1D FAIL TO OPEN		
12	3.42E-09	2.07E-04	%IE-078-44B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A44B	0.9	16.4
		1.65E-05	PFHBWQ3-SW2OUATACD	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1C,1D FAIL TO OPEN		
13	3.40E-09	2.83E-04	%IE-078-19A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19A	0.8	17.3
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
14	2.68E-09	1.62E-04	%IE-078-01D-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A01D	0.7	17.9
		1.65E-05	PFHBWQ3-SW2OUATABC	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1B,1C FAIL TO OPEN		
15	2.48E-09	2.07E-04	%IE-078-44B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A44B	0.6	18.6
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
16	2.15E-09	7.89E-05	%IE-078-19A-FP-M	THE FLOOD INITIATING EVENT FOR A MODERATE BREAK OF FP PIPING IN ROOM 078-A19A	0.5	19.1
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1B,1C,1D FAIL TO OPEN		
17	2.10E-09	1.27E-04	%IE-078-19B-FP-M	THE FLOOD INITIATING EVENT FOR A MODERATE BREAK OF FP PIPING IN ROOM 078-A19B	0.5	19.6
		1.65E-05	PFHBWQ3-SW2OUATACD	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1C,1D FAIL TO OPEN		

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Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
18	1.94E-09	1.62E-04	%IE-078-01D-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A01D	0.5	20.1
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
19	1.83E-09	1.17E-02	%IE-TB-MISC	THE FLOOD INITIATING EVENT FOR A SIGNIFICANT FLOOD IN THE TURBINE ROOM	0.5	20.6
		1.11E-05	AFPVKQ4-TP01A/B/MP02A/B	CCF OF ALL AF PUMPS FAIL DUE TO THE VOLUTE FAIL TO RUN		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
20	1.52E-09	1.27E-04	%IE-078-19B-FP-M	THE FLOOD INITIATING EVENT FOR A MODERATE BREAK OF FP PIPING IN ROOM 078-A19B	0.4	20.9
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
21	1.48E-09	5.42E-05	%IE-100-10B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A10B	0.4	21.3
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1B,1C,1D FAIL TO OPEN		
22	1.43E-09	5.24E-05	%IE-078-01D-FP-M	THE FLOOD INITIATING EVENT FOR A MODERATE BREAK OF FP PIPING IN ROOM 078-A01D	0.4	21.7
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1B,1C,1D FAIL TO OPEN		
23	1.31E-09	7.89E-05	%IE-078-19A-FP-M	THE FLOOD INITIATING EVENT FOR A MODERATE BREAK OF FP PIPING IN ROOM 078-A19A	0.3	22.0
		1.65E-05	PFHBWQ3-SW2OUATBCD	CCF OF PCB BETWEEN UAT & 4.16kV SW01B,1C,1D FAIL TO OPEN		

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Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
24	1.21E-09	3.33E-04	%IE-078-10C-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A10C	0.3	22.3
		5.78E-02	AFMVC1B-046	AFW ISOLATION VALVE 46 FAIL TO CLOSE		
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		6.66E-03	PFHBO1B-SW01B-H2	4.16kV CLASS 1E 4.16kV SWITCHGEAR PCB SW01B-H2 (UAT) FAILS TO OPEN		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		7.10E+01	COMBINATION_60	HEP DEPENDENCY FACTOR FOR FPOPH-1-ISO-FL, RCOPH-S-SDSE-FW		
25	1.21E-09	3.33E-04	%IE-078-10C-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A10C	0.3	22.6
		5.78E-02	AFMVO1B-046	AFW ISOLATION VALVE 46 FAIL TO OPEN		
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		6.66E-03	PFHBO1B-SW01B-H2	4.16kV CLASS 1E 4.16kV SWITCHGEAR PCB SW01B-H2 (UAT) FAILS TO OPEN		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		7.10E+01	COMBINATION_60	HEP DEPENDENCY FACTOR FOR FPOPH-1-ISO-FL, RCOPH-S-SDSE-FW		
26	1.21E-09	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	0.3	22.9
		5.78E-02	AFMVC1A-045	AFW ISOLATION VALVE 45 FAIL TO CLOSE		
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		6.66E-03	PFHBO1A-SW01A-H2	FAILS TO OPEN OF PCB SW01A-H2 OF 4.16kV SWGR SW01A FROM UAT		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		7.10E+01	COMBINATION_60	HEP DEPENDENCY FACTOR FOR FPOPH-1-ISO-FL, RCOPH-S-SDSE-FW		

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Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
27	1.21E-09	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	0.3	23.2
		5.78E-02	AFMVO1A-045	AFW ISOLATION VALVE 45 FAIL TO OPEN		
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		6.66E-03	PFHBO1A-SW01A-H2	FAILS TO OPEN OF PCB SW01A-H2 OF 4.16kV SWGR SW01A FROM UAT		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		7.10E+01	COMBINATION_60	HEP DEPENDENCY FACTOR FOR FPOPH-1-ISO-FL, RCOPH-S-SDSE-FW		
28	1.13E-09	1.88E-05	%IE-078-15D-AF-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF AF PIPING IN ROOM 078-A15D	0.3	23.5
		1.00E+00	AFOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A AF BREAK WITH LESS THAN 10 MUNITE AVAILABLE		
		6.03E-05	PFHBWQ2-SW2OUATAC	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1C FAIL TO OPEN		
29	1.12E-09	1.88E-05	%IE-078-15D-AF-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF AF PIPING IN ROOM 078-A15D	0.3	23.8
		5.78E-02	AFMVC1A-045	AFW ISOLATION VALVE 45 FAIL TO CLOSE		
		1.00E+00	AFOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A AF BREAK WITH LESS THAN 10 MUNITE AVAILABLE		
		6.66E-03	PFHBO1A-SW01A-H2	FAILS TO OPEN OF PCB SW01A-H2 OF 4.16kV SWGR SW01A FROM UAT		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		1.10E+01	COMBINATION_110	HEP DEPENDENCY FACTOR FOR AFOPH-1-ISO-FL, RCOPH-S-SDSE-FW		

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Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
30	1.12E-09	1.88E-05	%IE-078-15D-AF-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF AF PIPING IN ROOM 078-A15D	0.3	24.0
		5.78E-02	AFMVO1A-045	AFW ISOLATION VALVE 45 FAIL TO OPEN		
		1.00E+00	AFOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A AF BREAK WITH LESS THAN 10 MUNITE AVAILABLE		
		6.66E-03	PFHBO1A-SW01A-H2	FAILS TO OPEN OF PCB SW01A-H2 OF 4.16kV SWGR SW01A FROM UAT		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		1.10E+01	COMBINATION_110	HEP DEPENDENCY FACTOR FOR AFOPH-1-ISO-FL, RCOPH-S-SDSE-FW		
31	1.03E-09	2.83E-04	%IE-078-19A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19A	0.3	24.3
		5.78E-02	AFMVC1B-046	AFW ISOLATION VALVE 46 FAIL TO CLOSE		
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		6.66E-03	PFHBO1B-SW01B-H2	4.16kV CLASS 1E 4.16kV SWITCHGEAR PCB SW01B-H2 (UAT) FAILS TO OPEN		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		7.10E+01	COMBINATION_60	HEP DEPENDENCY FACTOR FOR FPOPH-1-ISO-FL, RCOPH-S-SDSE-FW		
32	1.03E-09	2.83E-04	%IE-078-19A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19A	0.3	24.6
		5.78E-02	AFMVO1B-046	AFW ISOLATION VALVE 46 FAIL TO OPEN		
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		6.66E-03	PFHBO1B-SW01B-H2	4.16kV CLASS 1E 4.16kV SWITCHGEAR PCB SW01B-H2 (UAT) FAILS TO OPEN		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		7.10E+01	COMBINATION_60	HEP DEPENDENCY FACTOR FOR FPOPH-1-ISO-FL, RCOPH-S-SDSE-FW		

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Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
33	9.79E-10	3.18E-04	%IE-100-20A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A20A	0.2	24.8
		5.78E-02	AFMVC1B-046	AFW ISOLATION VALVE 46 FAIL TO CLOSE		
		8.00E-03	FPOPH-2-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK BETWEEN 20 AND 40 MINUTES AVAILABLE		
		6.66E-03	PFHBO1B-SW01B-H2	4.16kV CLASS 1E 4.16kV SWITCHGEAR PCB SW01B-H2 (UAT) FAILS TO OPEN		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		7.10E+01	COMBINATION_62	HEP DEPENDENCY FACTOR FOR FPOPH-2-ISO-FL, RCOPH-S-SDSE-FW		
34	9.79E-10	3.18E-04	%IE-100-20A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A20A	0.2	25.1
		5.78E-02	AFMVO1B-046	AFW ISOLATION VALVE 46 FAIL TO OPEN		
		8.00E-03	FPOPH-2-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK BETWEEN 20 AND 40 MINUTES AVAILABLE		
		6.66E-03	PFHBO1B-SW01B-H2	4.16kV CLASS 1E 4.16kV SWITCHGEAR PCB SW01B-H2 (UAT) FAILS TO OPEN		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		7.10E+01	COMBINATION_62	HEP DEPENDENCY FACTOR FOR FPOPH-2-ISO-FL, RCOPH-S-SDSE-FW		
35	9.47E-10	7.89E-05	%IE-078-19A-FP-M	THE FLOOD INITIATING EVENT FOR A MODERATE BREAK OF FP PIPING IN ROOM 078-A19A	0.2	25.3
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
36	8.97E-10	5.42E-05	%IE-100-10B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A10B	0.2	25.5
		1.65E-05	PFHBWQ3-SW2OUATACD	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1C,1D FAIL TO OPEN		
37	8.67E-10	5.24E-05	%IE-078-01D-FP-M	THE FLOOD INITIATING EVENT FOR A MODERATE BREAK OF FP PIPING IN ROOM 078-A01D	0.2	25.7
		1.65E-05	PFHBWQ3-SW2OUATABC	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1B,1C FAIL TO OPEN		

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Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
38	8.34E-10	1.88E-05	%IE-078-15D-AF-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF AF PIPING IN ROOM 078-A15D	0.2	25.9
		1.00E+00	AFOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A AF BREAK WITH LESS THAN 10 MUNITE AVAILABLE		
		6.66E-03	PFHBO1A-SW01A-H2	FAILS TO OPEN OF PCB SW01A-H2 OF 4.16kV SWGR SW01A FROM UAT		
		6.66E-03	PFHBO2A-SW01C-C2	4.16kV CLASS 1E 4.16kV SWITCHGEAR PCB SW01C-C2 (UAT) FAILS TO OPEN		
39	8.01E-10	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	0.2	26.1
		6.03E-05	PFHBWQ2-SW2OUATAC	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1C FAIL TO OPEN		
		4.00E-02	WOCHM2B-CH02B	ECW CHILLER 2B TRAIN UNAVAILABLE DUE TO T&M		
40	7.67E-10	3.18E-04	%IE-100-20A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A20A	0.2	26.3
		6.03E-05	PFHBWQ2-SW2OUATBD	CCF OF PCB BETWEEN UAT & 4.16kV SW01B,1D FAIL TO OPEN		
		4.00E-02	WOCHM2A-CH02A	ECW CHILLER 2A TRAIN UNAVAILABLE DUE TO T&M		
41	7.41E-10	3.33E-04	%IE-078-10C-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A10C	0.2	26.5
		3.52E-02	AFTPR1B-TDP01B	AFW PUMP 1B FAIL TO RUN FOR MORE THAN 1 HOUR		
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		6.66E-03	PFHBO1B-SW01B-H2	4.16kV CLASS 1E 4.16kV SWITCHGEAR PCB SW01B-H2 (UAT) FAILS TO OPEN		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		7.10E+01	COMBINATION_60	HEP DEPENDENCY FACTOR FOR FPOPH-1-ISO-FL, RCOPH-S-SDSE-FW		

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Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
42	7.39E-10	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	0.2	26.7
		3.52E-02	AFTPR1A-TDP01A	AFW PUMP 1A FAIL TO RUN FOR MORE THAN 1 HOUR		
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		6.66E-03	PFHBO1A-SW01A-H2	FAILS TO OPEN OF PCB SW01A-H2 OF 4.16kV SWGR SW01A FROM UAT		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		7.10E+01	COMBINATION_60	HEP DEPENDENCY FACTOR FOR FPOPH-1-ISO-FL, RCOPH-S-SDSE-FW		
43	7.30E-10	2.37E-04	%IE-078-31A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A31A	0.2	26.9
		5.78E-02	AFMVC1B-046	AFW ISOLATION VALVE 46 FAIL TO CLOSE		
		8.00E-03	FPOPH-2-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK BETWEEN 20 AND 40 MINUTES AVAILABLE		
		2.93E-03	FPOPH-3DEP-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 72 MINUTES AVAILABLE		
		6.66E-03	PFHBO1B-SW01B-H2	4.16kV CLASS 1E 4.16kV SWITCHGEAR PCB SW01B-H2 (UAT) FAILS TO OPEN		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		2.42E+04	COMBINATION_64	HEP DEPENDENCY FACTOR FOR FPOPH-2-ISO-FL, RCOPH-S-SDSE-FW, FPOPH-3DEP-ISO-FL		

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Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
44	7.30E-10	2.37E-04	%IE-078-31A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A31A	0.2	27.1
		5.78E-02	AFMVO1B-046	AFW ISOLATION VALVE 46 FAIL TO OPEN		
		8.00E-03	FPOPH-2-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK BETWEEN 20 AND 40 MINUTES AVAILABLE		
		2.93E-03	FPOPH-3DEP-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 72 MINUTES AVAILABLE		
		6.66E-03	PFHBO1B-SW01B-H2	4.16kV CLASS 1E 4.16kV SWITCHGEAR PCB SW01B-H2 (UAT) FAILS TO OPEN		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
45	7.26E-10	2.42E+04	COMBINATION_64	HEP DEPENDENCY FACTOR FOR FPOPH-2-ISO-FL, RCOPH-S-SDSE-FW, FPOPH-3DEP-ISO-FL	0.2	27.2
		3.33E-04	%IE-078-10C-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A10C		
		3.98E-03	AFMPM2B-MDP02B	AFW PUMP 2B UNAVAILABLE DUE TO T&M		
		5.78E-02	AFMVC1B-046	AFW ISOLATION VALVE 46 FAIL TO CLOSE		
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
46	7.26E-10	7.10E+01	COMBINATION_60	HEP DEPENDENCY FACTOR FOR FPOPH-1-ISO-FL, RCOPH-S-SDSE-FW	0.2	27.3
		3.33E-04	%IE-078-10C-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A10C		
		3.98E-03	AFMPM2B-MDP02B	AFW PUMP 2B UNAVAILABLE DUE TO T&M		
		5.78E-02	AFMVC1B-046	AFW ISOLATION VALVE 46 FAIL TO CLOSE		
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		

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Table 19.1-66 (11 of 28)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
46	7.26E-10	3.33E-04	%IE-078-10C-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A10C	0.2	27.4
		3.98E-03	AFMPM2B-MDP02B	AFW PUMP 2B UNAVAILABLE DUE TO T&M		
		5.78E-02	AFMVO1B-046	AFW ISOLATION VALVE 46 FAIL TO OPEN		
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		7.10E+01	COMBINATION_60	HEP DEPENDENCY FACTOR FOR FPOPH-1-ISO-FL, RCOPH-S-SDSE-FW		
47	7.24E-10	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	0.2	27.6
		3.98E-03	AFMPM2A-MDP02A	AFW PUMP 2A UNAVAILABLE DUE TO T&M		
		5.78E-02	AFMVC1A-045	AFW ISOLATION VALVE 45 FAIL TO CLOSE		
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		7.10E+01	COMBINATION_60	HEP DEPENDENCY FACTOR FOR FPOPH-1-ISO-FL, RCOPH-S-SDSE-FW		
48	7.24E-10	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	0.2	27.8
		3.98E-03	AFMPM2A-MDP02A	AFW PUMP 2A UNAVAILABLE DUE TO T&M		
		5.78E-02	AFMVO1A-045	AFW ISOLATION VALVE 45 FAIL TO OPEN		
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		7.10E+01	COMBINATION_60	HEP DEPENDENCY FACTOR FOR FPOPH-1-ISO-FL, RCOPH-S-SDSE-FW		

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Table 19.1-66 (12 of 28)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
49	6.94E-10	3.33E-04	%IE-078-10C-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A10C	0.2	28.0
		7.10E-04	AFOPH-S-ALT-LT	OPERATOR'S FAILURE TO TRANSFER AFW SOURCE FROM AFWST TO RWT/CST		
		8.60E-04	CDOPH-S-ALIGN	OPERATOR'S FAILURE TO ALIGN THE MANUAL VALVES AND START CD PUMPS FOR HOTWELL MAKEUP		
		8.10E-03	RCOPH-S-SDSL	OPERATOR'S FAILURE TO OPEN 1 OF 4 SDS VALVE LATE PHASE		
		4.21E+02	COMBINATION_1	HEP DEPENDENCY FACTOR FOR AFOPH-S-ALT-LT, CDOPH-S-ALIGN, RCOPH-S-SDSL		
50	6.84E-10	1.88E-05	%IE-078-15D-AF-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF AF PIPING IN ROOM 078-A15D	0.2	28.1
		1.00E+00	AFOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A AF BREAK WITH LESS THAN 10 MUNITE AVAILABLE		
		3.52E-02	AFTPR1A-TDP01A	AFW PUMP 1A FAIL TO RUN FOR MORE THAN 1 HOUR		
		6.66E-03	PFHBO1A-SW01A-H2	FAILS TO OPEN OF PCB SW01A-H2 OF 4.16kV SWGR SW01A FROM UAT		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
51	6.83E-10	1.10E+01	COMBINATION_110	HEP DEPENDENCY FACTOR FOR AFOPH-1-ISO-FL, RCOPH-S-SDSE-FW	0.2	28.3
		2.83E-04	%IE-078-19A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19A		
		6.03E-05	PFHBWQ2-SW2OUATBD	CCF OF PCB BETWEEN UAT & 4.16kV SW01B,1D FAIL TO OPEN		
		4.00E-02	WOCHM2A-CH02A	ECW CHILLER 2A TRAIN UNAVAILABLE DUE TO T&M		

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Table 19.1-66 (13 of 28)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
52	6.70E-10	1.88E-05	%IE-078-15D-AF-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF AF PIPING IN ROOM 078-A15D	0.2	28.5
		3.98E-03	AFMPM2A-MDP02A	AFW PUMP 2A UNAVAILABLE DUE TO T&M		
		5.78E-02	AFMVC1A-045	AFW ISOLATION VALVE 45 FAIL TO CLOSE		
		1.00E+00	AFOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A AF BREAK WITH LESS THAN 10 MUNITE AVAILABLE		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		1.10E+01	COMBINATION_110	HEP DEPENDENCY FACTOR FOR AFOPH-1-ISO-FL, RCOPH-S-SDSE-FW		
53	6.70E-10	1.88E-05	%IE-078-15D-AF-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF AF PIPING IN ROOM 078-A15D	0.2	28.6
		3.98E-03	AFMPM2A-MDP02A	AFW PUMP 2A UNAVAILABLE DUE TO T&M		
		5.78E-02	AFMVO1A-045	AFW ISOLATION VALVE 45 FAIL TO OPEN		
		1.00E+00	AFOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A AF BREAK WITH LESS THAN 10 MUNITE AVAILABLE		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		1.10E+01	COMBINATION_110	HEP DEPENDENCY FACTOR FOR AFOPH-1-ISO-FL, RCOPH-S-SDSE-FW		
54	6.62E-10	3.18E-04	%IE-100-20A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A20A	0.2	28.8
		7.10E-04	AFOPH-S-ALT-LT	OPERATOR'S FAILURE TO TRANSFER AFW SOURCE FROM AFWST TO RWT/CST		
		8.60E-04	CDOPH-S-ALIGN	OPERATOR'S FAILURE TO ALIGN THE MANUAL VALVES AND START CD PUMPS FOR HOTWELL MAKEUP		
		8.10E-03	RCOPH-S-SDSL	OPERATOR'S FAILURE TO OPEN 1 OF 4 SDS VALVE LATE PHASE		
		4.21E+02	COMBINATION_1	HEP DEPENDENCY FACTOR FOR AFOPH-S-ALT-LT, CDOPH-S-ALIGN, RCOPH-S-SDSL		

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Table 19.1-66 (14 of 28)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
55	6.50E-10	5.42E-05	%IE-100-10B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A10B	0.2	29.0
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
56	6.37E-10	2.07E-04	%IE-078-44B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A44B	0.2	29.1
		5.78E-02	AFMVC1A-045	AFW ISOLATION VALVE 45 FAIL TO CLOSE		
		8.00E-03	FPOPH-2-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK BETWEEN 20 AND 40 MINUTES AVAILABLE		
		6.66E-03	PFHBO1A-SW01A-H2	FAILS TO OPEN OF PCB SW01A-H2 OF 4.16kV SWGR SW01A FROM UAT		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		7.10E+01	COMBINATION_62	HEP DEPENDENCY FACTOR FOR FPOPH-2-ISO-FL, RCOPH-S-SDSE-FW		
57	6.37E-10	2.07E-04	%IE-078-44B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A44B	0.2	29.3
		5.78E-02	AFMVO1A-045	AFW ISOLATION VALVE 45 FAIL TO OPEN		
		8.00E-03	FPOPH-2-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK BETWEEN 20 AND 40 MINUTES AVAILABLE		
		6.66E-03	PFHBO1A-SW01A-H2	FAILS TO OPEN OF PCB SW01A-H2 OF 4.16kV SWGR SW01A FROM UAT		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		7.10E+01	COMBINATION_62	HEP DEPENDENCY FACTOR FOR FPOPH-2-ISO-FL, RCOPH-S-SDSE-FW		

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Table 19.1-66 (15 of 28)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
58	6.30E-10	2.83E-04	%IE-078-19A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19A	0.2	29.4
		3.52E-02	AFTPR1B-TDP01B	AFW PUMP 1B FAIL TO RUN FOR MORE THAN 1 HOUR		
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		6.66E-03	PFHBO1B-SW01B-H2	4.16kV CLASS 1E 4.16kV SWITCHGEAR PCB SW01B-H2 (UAT) FAILS TO OPEN		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		7.10E+01	COMBINATION_60	HEP DEPENDENCY FACTOR FOR FPOPH-1-ISO-FL, RCOPH-S-SDSE-FW		
59	6.29E-10	5.24E-05	%IE-078-01D-FP-M	THE FLOOD INITIATING EVENT FOR A MODERATE BREAK OF FP PIPING IN ROOM 078-A01D	0.2	29.6
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
60	6.17E-10	2.83E-04	%IE-078-19A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19A	0.2	29.8
		3.98E-03	AFMPM2B-MDP02B	AFW PUMP 2B UNAVAILABLE DUE TO T&M		
		5.78E-02	AFMVC1B-046	AFW ISOLATION VALVE 46 FAIL TO CLOSE		
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		7.10E+01	COMBINATION_60	HEP DEPENDENCY FACTOR FOR FPOPH-1-ISO-FL, RCOPH-S-SDSE-FW		

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Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
61	6.17E-10	2.83E-04	%IE-078-19A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19A	0.2	29.9
		3.98E-03	AFMPM2B-MDP02B	AFW PUMP 2B UNAVAILABLE DUE TO T&M		
		5.78E-02	AFMVO1B-046	AFW ISOLATION VALVE 46 FAIL TO OPEN		
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		7.10E+01	COMBINATION_60	HEP DEPENDENCY FACTOR FOR FPOPH-1-ISO-FL, RCOPH-S-SDSE-FW		
62	5.97E-10	3.18E-04	%IE-100-20A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A20A	0.1	30.1
		3.52E-02	AFTPR1B-TDP01B	AFW PUMP 1B FAIL TO RUN FOR MORE THAN 1 HOUR		
		8.00E-03	FPOPH-2-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK BETWEEN 20 AND 40 MINUTES AVAILABLE		
		6.66E-03	PFHBO1B-SW01B-H2	4.16kV CLASS 1E 4.16kV SWITCHGEAR PCB SW01B-H2 (UAT) FAILS TO OPEN		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		7.10E+01	COMBINATION_62	HEP DEPENDENCY FACTOR FOR FPOPH-2-ISO-FL, RCOPH-S-SDSE-FW		
63	5.89E-10	2.83E-04	%IE-078-19A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19A	0.1	30.2
		7.10E-04	AFOPH-S-ALT-LT	OPERATOR'S FAILURE TO TRANSFER AFW SOURCE FROM AFWST TO RWT/CST		
		8.60E-04	CDOPH-S-ALIGN	OPERATOR'S FAILURE TO ALIGN THE MANUAL VALVES AND START CD PUMPS FOR HOTWELL MAKEUP		
		8.10E-03	RCOPH-S-SDSL	OPERATOR'S FAILURE TO OPEN 1 OF 4 SDS VALVE LATE PHASE		
		4.21E+02	COMBINATION_1	HEP DEPENDENCY FACTOR FOR AFOPH-S-ALT-LT, CDOPH-S-ALIGN, RCOPH-S-SDSL		

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Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
64	5.89E-10	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	0.1	30.4
		6.66E-03	PFHBO1A-SW01A-H2	FAILS TO OPEN OF PCB SW01A-H2 OF 4.16kV SWGR SW01A FROM UAT		
		6.66E-03	PFHBO2A-SW01C-C2	4.16kV CLASS 1E 4.16kV SWITCHGEAR PCB SW01C-C2 (UAT) FAILS TO OPEN		
		4.00E-02	WOCHM2B-CH02B	ECW CHILLER 2B TRAIN UNAVAILABLE DUE TO T&M		
65	5.85E-10	3.18E-04	%IE-100-20A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A20A	0.1	30.5
		3.98E-03	AFMPM2B-MDP02B	AFW PUMP 2B UNAVAILABLE DUE TO T&M		
		5.78E-02	AFMVC1B-046	AFW ISOLATION VALVE 46 FAIL TO CLOSE		
		8.00E-03	FPOPH-2-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK BETWEEN 20 AND 40 MINUTES AVAILABLE		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		7.10E+01	COMBINATION_62	HEP DEPENDENCY FACTOR FOR FPOPH-2-ISO-FL, RCOPH-S-SDSE-FW		
66	5.85E-10	3.18E-04	%IE-100-20A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A20A	0.1	30.6
		3.98E-03	AFMPM2B-MDP02B	AFW PUMP 2B UNAVAILABLE DUE TO T&M		
		5.78E-02	AFMVO1B-046	AFW ISOLATION VALVE 46 FAIL TO OPEN		
		8.00E-03	FPOPH-2-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK BETWEEN 20 AND 40 MINUTES AVAILABLE		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		7.10E+01	COMBINATION_62	HEP DEPENDENCY FACTOR FOR FPOPH-2-ISO-FL, RCOPH-S-SDSE-FW		

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Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
67	5.64E-10	3.18E-04	%IE-100-20A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A20A	0.1	30.8
		6.66E-03	PFHBO1B-SW01B-H2	4.16kV CLASS 1E 4.16kV SWITCHGEAR PCB SW01B-H2 (UAT) FAILS TO OPEN		
		6.66E-03	PFHBO2B-SW01D-G2	4.16kV CLASS 1E 4.16kV SWITCHGEAR PCB SW01D-G2 (UAT) FAILS TO OPEN		
		4.00E-02	WOCHM2A-CH02A	ECW CHILLER 2A TRAIN UNAVAILABLE DUE TO T&M		
68	5.29E-10	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	0.1	30.9
		6.03E-05	PFHBWQ2-SW2OUATAC	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1C FAIL TO OPEN		
		2.64E-02	SXMPM2B-PP02B	ESW PUMP 2B UNAVAILABLE DUE TO T&M		
69	5.13E-10	1.88E-05	%IE-078-15D-AF-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF AF PIPING IN ROOM 078-A15D	0.1	31.0
		1.00E+00	AFOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A AF BREAK WITH LESS THAN 10 MUNITE AVAILABLE		
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1B,1C,1D FAIL TO OPEN		
70	5.06E-10	3.18E-04	%IE-100-20A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A20A	0.1	31.2
		6.03E-05	PFHBWQ2-SW2OUATBD	CCF OF PCB BETWEEN UAT & 4.16kV SW01B,1D FAIL TO OPEN		
		2.64E-02	SXMPM2A-PP02A	ESW PUMP 2A UNAVAILABLE DUE TO T&M		
71	5.02E-10	2.83E-04	%IE-078-19A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19A	0.1	31.3
		6.66E-03	PFHBO1B-SW01B-H2	4.16kV CLASS 1E 4.16kV SWITCHGEAR PCB SW01B-H2 (UAT) FAILS TO OPEN		
		6.66E-03	PFHBO2B-SW01D-G2	4.16kV CLASS 1E 4.16kV SWITCHGEAR PCB SW01D-G2 (UAT) FAILS TO OPEN		
		4.00E-02	WOCHM2A-CH02A	ECW CHILLER 2A TRAIN UNAVAILABLE DUE TO T&M		

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Table 19.1-66 (19 of 28)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
72	5.00E-10	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	0.1	31.4
		2.50E-02	DGDGR-D-DGD	FAILS TO RUN OF EDG D		
		6.03E-05	PFHBWQ2-SW2OUATAC	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1C FAIL TO OPEN		
73	5.00E-10	1.17E-02	%IE-TB-MISC	THE FLOOD INITIATING EVENT FOR A SIGNIFICANT FLOOD IN THE TURBINE ROOM	0.1	31.5
		5.57E-03	MSOPH-S-SGADV	OPERATOR'S FAILURE TO OPEN MSADV TO REMOVE STEAM FROM SGS		
		7.66E-06	MSSVWQ4-1A1B2A2B	CCF OF MSSVS ON SG LINES 1A, 1B, 2A AND 2B		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		7.10E+01	COMBINATION_65	HEP DEPENDENCY FACTOR FOR MSOPH-S-SGADV, RCOPH-S-SDSE-FW		
74	4.99E-10	2.07E-04	%IE-078-44B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A44B	0.1	31.7
		6.03E-05	PFHBWQ2-SW2OUATAC	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1C FAIL TO OPEN		
		4.00E-02	WOCHM2B-CH02B	ECW CHILLER 2B TRAIN UNAVAILABLE DUE TO T&M		
75	4.99E-10	1.62E-04	%IE-078-01D-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A01D	0.1	31.8
		5.78E-02	AFMVC1A-045	AFW ISOLATION VALVE 45 FAIL TO CLOSE		
		8.00E-03	FPOPH-2-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK BETWEEN 20 AND 40 MINUTES AVAILABLE		
		6.66E-03	PFHBO1A-SW01A-H2	FAILS TO OPEN OF PCB SW01A-H2 OF 4.16kV SWGR SW01A FROM UAT		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		7.10E+01	COMBINATION_62	HEP DEPENDENCY FACTOR FOR FPOPH-2-ISO-FL, RCOPH-S-SDSE-FW		

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Table 19.1-66 (20 of 28)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
76	4.99E-10	1.62E-04	%IE-078-01D-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A01D	0.1	31.9
		5.78E-02	AFMVO1A-045	AFW ISOLATION VALVE 45 FAIL TO OPEN		
		8.00E-03	FPOPH-2-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK BETWEEN 20 AND 40 MINUTES AVAILABLE		
		6.66E-03	PFHBO1A-SW01A-H2	FAILS TO OPEN OF PCB SW01A-H2 OF 4.16kV SWGR SW01A FROM UAT		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		7.10E+01	COMBINATION_62	HEP DEPENDENCY FACTOR FOR FPOPH-2-ISO-FL, RCOPH-S-SDSE-FW		
77	4.79E-10	3.18E-04	%IE-100-20A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A20A	0.1	32.0
		2.50E-02	DGDGR-C-DGC	FAILS TO RUN OF EDG C		
		6.03E-05	PFHBWQ2-SW2OUATBD	CCF OF PCB BETWEEN UAT & 4.16kV SW01B,1D FAIL TO OPEN		
78	4.74E-10	1.62E-04	%IE-078-01D-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A01D	0.1	32.2
		7.10E-04	AFOPH-S-ALT-LT	OPERATOR'S FAILURE TO TRANSFER AFW SOURCE FROM AFWST TO RWT/CST		
		2.00E-03	DCBCM-M-BC01M	NON-CLASS 1E 125V DC BATT. CHARGER BC01M UNAVAILABLE DUE TO T&M		
		5.00E-01	DCOPH-S-NSBC-ALIGN	OPERATOR'S FAILURE TO TRANSFER SOURCE FROM BATTERY CHARGER 1M/N TO 5N		
		8.00E-03	FPOPH-2-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK BETWEEN 20 AND 40 MINUTES AVAILABLE		
		8.10E-03	RCOPH-S-SDSL	OPERATOR'S FAILURE TO OPEN 1 OF 4 SDS VALVE LATE PHASE		
		6.35E+04	COMBINATION_56	HEP DEPENDENCY FACTOR FOR DCOPH-S-NSBC-ALIGN, FPOPH-2-ISO-FL, AFOPH-S-ALT-LT, RCOPH-S-SDSL		

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Table 19.1-66 (21 of 28)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
79	4.64E-10	1.70E-05	%IE-120-11B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 120-A13B	0.1	32.3
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1B,1C,1D FAIL TO OPEN		
80	4.56E-10	3.33E-04	%IE-078-10C-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A10C	0.1	32.4
		5.78E-02	AFMVC1B-046	AFW ISOLATION VALVE 46 FAIL TO CLOSE		
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		2.50E-03	VOHVM1B-HV33B	CUBICLE COOLER HV33B UAVAILABLE DUE TO T&M		
		7.10E+01	COMBINATION_60	HEP DEPENDENCY FACTOR FOR FPOPH-1-ISO-FL, RCOPH-S-SDSE-FW		
81	4.56E-10	3.33E-04	%IE-078-10C-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A10C	0.1	32.5
		5.78E-02	AFMVO1B-046	AFW ISOLATION VALVE 46 FAIL TO OPEN		
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		2.50E-03	VOHVM1B-HV33B	CUBICLE COOLER HV33B UAVAILABLE DUE TO T&M		
		7.10E+01	COMBINATION_60	HEP DEPENDENCY FACTOR FOR FPOPH-1-ISO-FL, RCOPH-S-SDSE-FW		

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Table 19.1-66 (22 of 28)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
82	4.55E-10	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	0.1	32.6
		5.78E-02	AFMVC1A-045	AFW ISOLATION VALVE 45 FAIL TO CLOSE		
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		2.50E-03	VOHVM2A-HV33A	CUBICLE COOLER HV33A UAVAILABLE DUE TO T&M		
		7.10E+01	COMBINATION_60	HEP DEPENDENCY FACTOR FOR FPOPH-1-ISO-FL, RCOPH-S-SDSE-FW		
83	4.55E-10	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	0.1	32.7
		5.78E-02	AFMVO1A-045	AFW ISOLATION VALVE 45 FAIL TO OPEN		
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		2.50E-03	VOHVM2A-HV33A	CUBICLE COOLER HV33A UAVAILABLE DUE TO T&M		
		7.10E+01	COMBINATION_60	HEP DEPENDENCY FACTOR FOR FPOPH-1-ISO-FL, RCOPH-S-SDSE-FW		
84	4.51E-10	2.83E-04	%IE-078-19A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19A	0.1	32.8
		6.03E-05	PFHBWQ2-SW2OUATBD	CCF OF PCB BETWEEN UAT & 4.16kV SW01B,1D FAIL TO OPEN		
		2.64E-02	SXMPPM2A-PP02A	ESW PUMP 2A UNAVAILABLE DUE TO T&M		

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Table 19.1-66 (23 of 28)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
85	4.45E-10	2.37E-04	%IE-078-31A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A31A	0.1	33.0
		3.52E-02	AFTPR1B-TDP01B	AFW PUMP 1B FAIL TO RUN FOR MORE THAN 1 HOUR		
		8.00E-03	FPOPH-2-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK BETWEEN 20 AND 40 MINUTES AVAILABLE		
		2.93E-03	FPOPH-3DEP-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 72 MINUTES AVAILABLE		
		6.66E-03	PFHBO1B-SW01B-H2	4.16kV CLASS 1E 4.16kV SWITCHGEAR PCB SW01B-H2 (UAT) FAILS TO OPEN		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
86	4.43E-10	2.42E+04	COMBINATION_64	HEP DEPENDENCY FACTOR FOR FPOPH-2-ISO-FL, RCOPH-S-SDSE-FW, FPOPH-3DEP-ISO-FL	0.1	33.1
		3.33E-04	%IE-078-10C-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A10C		
		3.98E-03	AFMPM2B-MDP02B	AFW PUMP 2B UNAVAILABLE DUE TO T&M		
		3.52E-02	AFTPR1B-TDP01B	AFW PUMP 1B FAIL TO RUN FOR MORE THAN 1 HOUR		
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
87	4.43E-10	7.10E+01	COMBINATION_60	HEP DEPENDENCY FACTOR FOR FPOPH-1-ISO-FL, RCOPH-S-SDSE-FW	0.1	33.1
		3.33E-04	%IE-078-10C-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A10C		
		3.98E-03	AFMPM2B-MDP02B	AFW PUMP 2B UNAVAILABLE DUE TO T&M		
		3.52E-02	AFTPR1B-TDP01B	AFW PUMP 1B FAIL TO RUN FOR MORE THAN 1 HOUR		
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		

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Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
87	4.42E-10	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	0.1	33.2
		3.98E-03	AFMPM2A-MDP02A	AFW PUMP 2A UNAVAILABLE DUE TO T&M		
		3.52E-02	AFTPR1A-TDP01A	AFW PUMP 1A FAIL TO RUN FOR MORE THAN 1 HOUR		
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		7.10E+01	COMBINATION_60	HEP DEPENDENCY FACTOR FOR FPOPH-1-ISO-FL, RCOPH-S-SDSE-FW		
88	4.36E-10	2.37E-04	%IE-078-31A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A31A	0.1	33.3
		3.98E-03	AFMPM2B-MDP02B	AFW PUMP 2B UNAVAILABLE DUE TO T&M		
		5.78E-02	AFMVC1B-046	AFW ISOLATION VALVE 46 FAIL TO CLOSE		
		8.00E-03	FPOPH-2-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK BETWEEN 20 AND 40 MINUTES AVAILABLE		
		2.93E-03	FPOPH-3DEP-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 72 MINUTES AVAILABLE		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		2.42E+04	COMBINATION_64	HEP DEPENDENCY FACTOR FOR FPOPH-2-ISO-FL, RCOPH-S-SDSE-FW, FPOPH-3DEP-ISO-FL		

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Table 19.1-66 (25 of 28)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
89	4.36E-10	2.37E-04	%IE-078-31A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A31A	0.1	33.4
		3.98E-03	AFMPM2B-MDP02B	AFW PUMP 2B UNAVAILABLE DUE TO T&M		
		5.78E-02	AFMVO1B-046	AFW ISOLATION VALVE 46 FAIL TO OPEN		
		8.00E-03	FPOPH-2-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK BETWEEN 20 AND 40 MINUTES AVAILABLE		
		2.93E-03	FPOPH-3DEP-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 72 MINUTES AVAILABLE		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		2.42E+04	COMBINATION_64	HEP DEPENDENCY FACTOR FOR FPOPH-2-ISO-FL, RCOPH-S-SDSE-FW, FPOPH-3DEP-ISO-FL		
90	4.26E-10	2.83E-04	%IE-078-19A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19A	0.1	33.5
		2.50E-02	DGDGR-C-DGC	FAILS TO RUN OF EDG C		
		6.03E-05	PFHBWQ2-SW2OUATBD	CCF OF PCB BETWEEN UAT & 4.16kV SW01B,1D FAIL TO OPEN		
91	4.21E-10	1.88E-05	%IE-078-15D-AF-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF AF PIPING IN ROOM 078-A15D	0.1	33.6
		5.78E-02	AFMVC1A-045	AFW ISOLATION VALVE 45 FAIL TO CLOSE		
		1.00E+00	AFOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A AF BREAK WITH LESS THAN 10 MUNITE AVAILABLE		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		2.50E-03	VOHVM2A-HV33A	CUBICLE COOLER HV33A UAVAILABLE DUE TO T&M		
		1.10E+01	COMBINATION_110	HEP DEPENDENCY FACTOR FOR AFOPH-1-ISO-FL, RCOPH-S-SDSE-FW		

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Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
92	4.21E-10	1.88E-05	%IE-078-15D-AF-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF AF PIPING IN ROOM 078-A15D	0.1	33.7
		5.78E-02	AFMVO1A-045	AFW ISOLATION VALVE 45 FAIL TO OPEN		
		1.00E+00	AFOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A AF BREAK WITH LESS THAN 10 MUNITE AVAILABLE		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		2.50E-03	VOHVM2A-HV33A	CUBICLE COOLER HV33A UNAVAILABLE DUE TO T&M		
		1.10E+01	COMBINATION_110	HEP DEPENDENCY FACTOR FOR AFOPH-1-ISO-FL, RCOPH-S-SDSE-FW		
93	4.12E-10	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	0.1	33.8
		6.03E-05	PFHBWQ2-SW2OUATAC	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1C FAIL TO OPEN		
		2.06E-02	WOOPH-B-1/2B	OPERATOR'S FAILURE TO OPERATE ECW PUMPS 1/2B		
94	4.08E-10	1.88E-05	%IE-078-15D-AF-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF AF PIPING IN ROOM 078-A15D	0.1	33.9
		3.98E-03	AFMPM2A-MDP02A	AFW PUMP 2A UNAVAILABLE DUE TO T&M		
		1.00E+00	AFOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A AF BREAK WITH LESS THAN 10 MUNITE AVAILABLE		
		3.52E-02	AFTPR1A-TDP01A	AFW PUMP 1A FAIL TO RUN FOR MORE THAN 1 HOUR		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		1.10E+01	COMBINATION_110	HEP DEPENDENCY FACTOR FOR AFOPH-1-ISO-FL, RCOPH-S-SDSE-FW		
95	3.98E-10	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	0.1	34.0
		1.20E-06	PPSO-OS-PPS	CCF OF PPS OPERATING SYSTEM SOFTWARE		

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Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
96	3.95E-10	3.18E-04	%IE-100-20A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A20A	0.1	34.1
		6.03E-05	PFHBWQ2-SW2OUATBD	CCF OF PCB BETWEEN UAT & 4.16kV SW01B,1D FAIL TO OPEN		
		2.06E-02	WOOPH-A-1/2A	OPERATOR'S FAILURE TO OPERATE ECW PUMPS 1/2A		
97	3.89E-10	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	0.1	34.2
		6.66E-03	PFHBO1A-SW01A-H2	FAILS TO OPEN OF PCB SW01A-H2 OF 4.16kV SWGR SW01A FROM UAT		
		6.66E-03	PFHBO2A-SW01C-C2	4.16kV CLASS 1E 4.16kV SWITCHGEAR PCB SW01C-C2 (UAT) FAILS TO OPEN		
		2.64E-02	SXMPM2B-PP02B	ESW PUMP 2B UNAVAILABLE DUE TO T&M		
98	3.89E-10	2.07E-04	%IE-078-44B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A44B	0.1	34.3
		3.52E-02	AFTPR1A-TDP01A	AFW PUMP 1A FAIL TO RUN FOR MORE THAN 1 HOUR		
		8.00E-03	FPOPH-2-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK BETWEEN 20 AND 40 MINUTES AVAILABLE		
		6.66E-03	PFHBO1A-SW01A-H2	FAILS TO OPEN OF PCB SW01A-H2 OF 4.16kV SWGR SW01A FROM UAT		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		7.10E+01	COMBINATION_62	HEP DEPENDENCY FACTOR FOR FPOPH-2-ISO-FL, RCOPH-S-SDSE-FW		
99	3.88E-10	2.83E-04	%IE-078-19A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19A	0.1	34.4
		5.78E-02	AFMVC1B-046	AFW ISOLATION VALVE 46 FAIL TO CLOSE		
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		2.50E-03	VOHVM1B-HV33B	CUBICLE COOLER HV33B UNAVAILABLE DUE TO T&M		
		7.10E+01	COMBINATION_60	HEP DEPENDENCY FACTOR FOR FPOPH-1-ISO-FL, RCOPH-S-SDSE-FW		

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Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
100	3.88E-10	2.83E-04	%IE-078-19A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19A	0.1	34.5
		5.78E-02	AFMVO1B-046	AFW ISOLATION VALVE 46 FAIL TO OPEN		
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		2.50E-03	VOHVM1B-HV33B	CUBICLE COOLER HV33B UAVAILABLE DUE TO T&M		
		7.10E+01	COMBINATION_60	HEP DEPENDENCY FACTOR FOR FPOPH-1-ISO-FL, RCOPH-S-SDSE- FW		

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Internal Flooding PRA Top 100 LRF Cutsets

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
1	2.37E-10	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	0.9	0.9
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-NO	DBCOOL DET: DCOOL = NO		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1B,1C,1D FAIL TO OPEN		
2	2.37E-10	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	0.9	1.9
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-YES	DBCOOL DET: DCOOL = YES		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1B,1C,1D FAIL TO OPEN		

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Table 19.1-67 (2 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
3	2.27E-10	3.18E-04	%IE-100-20A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A20A	0.9	2.8
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-NO	DBCOOL DET: DCOOL = NO		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1B,1C,1D FAIL TO OPEN		
4	2.27E-10	3.18E-04	%IE-100-20A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A20A	0.9	3.7
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-YES	DBCOOL DET: DCOOL = YES		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1B,1C,1D FAIL TO OPEN		

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RAI 434-8352 Question 19-92_Rev.1

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Table 19.1-67 (3 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
5	2.02E-10	2.83E-04	%IE-078-19A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19A	0.8	4.4
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-NO	DBCOOL DET: DCOOL = NO		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1B,1C,1D FAIL TO OPEN		
6	2.02E-10	2.83E-04	%IE-078-19A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19A	0.8	5.2
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-YES	DBCOOL DET: DCOOL = YES		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1B,1C,1D FAIL TO OPEN		

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Table 19.1-67 (4 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
7	1.48E-10	2.07E-04	%IE-078-44B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A44B	0.6	5.8
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-NO	DBCOOL DET: DCOOL = NO		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1B,1C,1D FAIL TO OPEN		
8	1.48E-10	2.07E-04	%IE-078-44B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A44B	0.6	6.4
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-YES	DBCOOL DET: DCOOL = YES		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1B,1C,1D FAIL TO OPEN		

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Table 19.1-67 (5 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
9	1.43E-10	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	0.6	7.0
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-NO	DBCOOL DET: DCOOL = NO		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		1.65E-05	PFHBWQ3-SW2OUATACD	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1C,1D FAIL TO OPEN		
10	1.43E-10	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	0.6	7.5
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-YES	DBCOOL DET: DCOOL = YES		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		1.65E-05	PFHBWQ3-SW2OUATACD	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1C,1D FAIL TO OPEN		

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Table 19.1-67 (6 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
11	1.37E-10	3.18E-04	%IE-100-20A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A20A	0.5	8.1
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-NO	DBCOOL DET: DCOOL = NO		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		1.65E-05	PFHBWQ3-SW2OUATBCD	CCF OF PCB BETWEEN UAT & 4.16KV SW01B,1C,1D FAIL TO OPEN		
12	1.37E-10	3.18E-04	%IE-100-20A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A20A	0.5	8.6
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-YES	DBCOOL DET: DCOOL = YES		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		1.65E-05	PFHBWQ3-SW2OUATBCD	CCF OF PCB BETWEEN UAT & 4.16KV SW01B,1C,1D FAIL TO OPEN		

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Table 19.1-67 (7 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
13	1.22E-10	2.83E-04	%IE-078-19A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19A	0.5	9.1
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-NO	DBCOOL DET: DCOOL = NO		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		1.65E-05	PFHBWQ3-SW2OUATBCD	CCF OF PCB BETWEEN UAT & 4.16KV SW01B,1C,1D FAIL TO OPEN		
14	1.22E-10	2.83E-04	%IE-078-19A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19A	0.5	9.6
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-YES	DBCOOL DET: DCOOL = YES		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		1.65E-05	PFHBWQ3-SW2OUATBCD	CCF OF PCB BETWEEN UAT & 4.16KV SW01B,1C,1D FAIL TO OPEN		

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Table 19.1-67 (8 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
15	1.16E-10	1.62E-04	%IE-078-01D-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A01D	0.5	10.0
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-NO	DBCOOL DET: DCOOL = NO		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1B,1C,1D FAIL TO OPEN		
16	1.16E-10	1.62E-04	%IE-078-01D-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A01D	0.5	10.5
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-YES	DBCOOL DET: DCOOL = YES		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1B,1C,1D FAIL TO OPEN		
17	9.41E-11	1.17E-02	%IE-TB-MISC	THE FLOOD INITIATING EVENT FOR A SIGNIFICANT FLOOD IN THE TURBINE ROOM	0.4	10.9
		2.98E-07	I-ATWS-RPMCF	CCF TO SCRAM DUE TO MECHANICAL FAILURES (1HR MT)		
		2.70E-02	PI-SGTR	PRESSURE INDUECD SGTR PROBABILITY UNDER LSSB, ATWS, FWLB		

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Table 19.1-67 (9 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
18	9.06E-11	1.27E-04	%IE-078-19B-FP-M	THE FLOOD INITIATING EVENT FOR A MODERATE BREAK OF FP PIPING IN ROOM 078-A19B	0.4	11.2
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-NO	DBCOOL DET: DCOOL = NO		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1B,1C,1D FAIL TO OPEN		
19	9.06E-11	1.27E-04	%IE-078-19B-FP-M	THE FLOOD INITIATING EVENT FOR A MODERATE BREAK OF FP PIPING IN ROOM 078-A19B	0.4	11.6
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-YES	DBCOOL DET: DCOOL = YES		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1B,1C,1D FAIL TO OPEN		

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Table 19.1-67 (10 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
20	8.94E-11	2.07E-04	%IE-078-44B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A44B	0.4	11.9
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-NO	DBCOOL DET: DCOOL = NO		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		1.65E-05	PFHBWQ3-SW2OUATACD	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1C,1D FAIL TO OPEN		
21	8.94E-11	2.07E-04	%IE-078-44B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A44B	0.4	12.3
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-YES	DBCOOL DET: DCOOL = YES		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		1.65E-05	PFHBWQ3-SW2OUATACD	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1C,1D FAIL TO OPEN		

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Table 19.1-67 (11 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
22	7.83E-11	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	0.3	12.6
		4.10E-01	L2-PROB-RCSFAIL-1-2-LK	RCSFAIL DET - PROB THAT SG-LEAK = 1OF2-LEAK		
		9.00E-01	L2-PROB-RCSFAIL-NOSG-DEP	RCSFAIL DET - PROB THAT SGDEPRESS = NO-DEPRESS		
		9.76E-01	L2-PROB-RCSFAIL-NOSGSORV	RCSFAIL DET - PROB THAT SGSORV = NO-DEPRESS		
		9.45E-01	L2-PROB-RCSFAIL-NO-SGTR-1D	RCSFAIL DET - PROB THAT PI-SGTR = INTACT (1 SG DEPRESSURIZED)		
		8.89E-01	L2-PROB-RCSFAIL-NOSORV	RCSFAIL DET - PROBABILITY THAT RCSSORV = INTACT		
		5.00E-01	L2-PROB-RCSFAIL-RCSINT	RCSFAIL DET - PROB THAT CSSORV_LATE = RCS-INTACT		
		1.30E-01	L2-PROB-TISGTR-B	RCSFAIL DET - PROB THAT TI-SGTR = TI-SGTR (CASE B)		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
23	7.50E-11	3.18E-04	%IE-100-20A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A20A	0.3	12.9
		4.10E-01	L2-PROB-RCSFAIL-1-2-LK	RCSFAIL DET - PROB THAT SG-LEAK = 1OF2-LEAK		
		9.00E-01	L2-PROB-RCSFAIL-NOSG-DEP	RCSFAIL DET - PROB THAT SGDEPRESS = NO-DEPRESS		
		9.76E-01	L2-PROB-RCSFAIL-NOSGSORV	RCSFAIL DET - PROB THAT SGSORV = NO-DEPRESS		
		9.45E-01	L2-PROB-RCSFAIL-NO-SGTR-1D	RCSFAIL DET - PROB THAT PI-SGTR = INTACT (1 SG DEPRESSURIZED)		
		8.89E-01	L2-PROB-RCSFAIL-NOSORV	RCSFAIL DET - PROBABILITY THAT RCSSORV = INTACT		
		5.00E-01	L2-PROB-RCSFAIL-RCSINT	RCSFAIL DET - PROB THAT CSSORV_LATE = RCS-INTACT		
		1.30E-01	L2-PROB-TISGTR-B	RCSFAIL DET - PROB THAT TI-SGTR = TI-SGTR (CASE B)		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		

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Table 19.1-67 (12 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
24	7.00E-11	1.62E-04	%IE-078-01D-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A01D MELTSTOP DET: CSRECSBS = NO	0.3	13.2
		1.00E-01	L2-PROB-CSRECSBS-NO	DBCOOL DET: DCOOL = NO		
		5.00E-01	L2-PROB-DCOOL-NO	ECF DET: ECFEVSE = INT (CASE A)		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	DET LCF: LCFWOB = RUPTURE		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		9.99E-01	L2-PROB-NODCF-LOW-P	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1B,1C FAIL TO OPEN		
		1.65E-05	PFHBWQ3-SW2OUATABC			
25	7.00E-11	1.62E-04	%IE-078-01D-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A01D MELTSTOP DET: CSRECSBS = NO	0.3	13.4
		1.00E-01	L2-PROB-CSRECSBS-NO	DBCOOL DET: DCOOL = YES		
		5.00E-01	L2-PROB-DCOOL-YES	ECF DET: ECFEVSE = INT (CASE A)		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	DET LCF: LCFWOB = RUPTURE		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		9.99E-01	L2-PROB-NODCF-LOW-P	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1B,1C FAIL TO OPEN		
		1.65E-05	PFHBWQ3-SW2OUATABC			

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Table 19.1-67 (13 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
26	6.68E-11	2.83E-04	%IE-078-19A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19A	0.3	13.7
		4.10E-01	L2-PROB-RCSFAIL-1-2-LK	RCSFAIL DET - PROB THAT SG-LEAK = 1OF2-LEAK		
		9.00E-01	L2-PROB-RCSFAIL-NOSG-DEP	RCSFAIL DET - PROB THAT SGDEPRESS = NO-DEPRESS		
		9.76E-01	L2-PROB-RCSFAIL-NOSGSORV	RCSFAIL DET - PROB THAT SGSORV = NO-DEPRESS		
		9.45E-01	L2-PROB-RCSFAIL-NO-SGTR-1D	RCSFAIL DET - PROB THAT PI-SGTR = INTACT (1 SG DEPRESSURIZED)		
		8.89E-01	L2-PROB-RCSFAIL-NOSORV	RCSFAIL DET - PROBABILITY THAT RCSSORV = INTACT		
		5.00E-01	L2-PROB-RCSFAIL-RCSINT	RCSFAIL DET - PROB THAT CSSORV_LATE = RCS-INTACT		
		1.30E-01	L2-PROB-TISGTR-B	RCSFAIL DET - PROB THAT TI-SGTR = TI-SGTR (CASE B)		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
27	5.63E-11	7.89E-05	%IE-078-19A-FP-M	THE FLOOD INITIATING EVENT FOR A MODERATE BREAK OF FP PIPING IN ROOM 078-A19A	0.2	13.9
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-NO	DBCOOL DET: DCOOL = NO		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1B,1C,1D FAIL TO OPEN		

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Table 19.1-67 (14 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
28	5.63E-11	7.89E-05	%IE-078-19A-FP-M	THE FLOOD INITIATING EVENT FOR A MODERATE BREAK OF FP PIPING IN ROOM 078-A19A	0.2	14.1
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-YES	DBCOOL DET: DCOOL = YES		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1B,1C,1D FAIL TO OPEN		
29	5.50E-11	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	0.2	14.4
		6.07E-03	H-CI-OPEN	OPERATOR'S FAILURE TO RECOVERY CIS VALVE BY LOCAL MANUAL OPERATION		
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1B,1C,1D FAIL TO OPEN		
30	5.49E-11	1.27E-04	%IE-078-19B-FP-M	THE FLOOD INITIATING EVENT FOR A MODERATE BREAK OF FP PIPING IN ROOM 078-A19B	0.2	14.6
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-NO	DBCOOL DET: DCOOL = NO		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		1.65E-05	PFHBWQ3-SW2OUATACD	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1C,1D FAIL TO OPEN		

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Table 19.1-67 (15 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
31	5.49E-11	1.27E-04	%IE-078-19B-FP-M	THE FLOOD INITIATING EVENT FOR A MODERATE BREAK OF FP PIPING IN ROOM 078-A19B	0.2	14.8
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-YES	DBCOOL DET: DCOOL = YES		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		1.65E-05	PFHBWQ3-SW2OUATACD	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1C,1D FAIL TO OPEN		
32	5.27E-11	3.18E-04	%IE-100-20A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A20A	0.2	15.0
		6.07E-03	H-CI-OPEN	OPERATOR'S FAILURE TO RECOVERY CIS VALVE BY LOCAL MANUAL OPERATION		
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1B,1C,1D FAIL TO OPEN		

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Table 19.1-67 (16 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
33	4.88E-11	2.07E-04	%IE-078-44B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A44B	0.2	15.2
		4.10E-01	L2-PROB-RCSFAIL-1-2-LK	RCSFAIL DET - PROB THAT SG-LEAK = 1OF2-LEAK		
		9.00E-01	L2-PROB-RCSFAIL-NOSG-DEP	RCSFAIL DET - PROB THAT SGDEPRESS = NO-DEPRESS		
		9.76E-01	L2-PROB-RCSFAIL-NOSGSORV	RCSFAIL DET - PROB THAT SGSORV = NO-DEPRESS		
		9.45E-01	L2-PROB-RCSFAIL-NO-SGTR-1D	RCSFAIL DET - PROB THAT PI-SGTR = INTACT (1 SG DEPRESSURIZED)		
		8.89E-01	L2-PROB-RCSFAIL-NOSORV	RCSFAIL DET - PROBABILITY THAT RCSSORV = INTACT		
		5.00E-01	L2-PROB-RCSFAIL-RCSINT	RCSFAIL DET - PROB THAT CSSORV_LATE = RCS-INTACT		
		1.30E-01	L2-PROB-TISGTR-B	RCSFAIL DET - PROB THAT TI-SGTR = TI-SGTR (CASE B)		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
34	4.69E-11	2.83E-04	%IE-078-19A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19A	0.2	15.4
		6.07E-03	H-CI-OPEN	OPERATOR'S FAILURE TO RECOVERY CIS VALVE BY LOCAL MANUAL OPERATION		
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1B,1C,1D FAIL TO OPEN		

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Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
35	3.86E-11	5.42E-05	%IE-100-10B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A10B	0.2	15.5
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-NO	DBCOOL DET: DCOOL = NO		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1B,1C,1D FAIL TO OPEN		
36	3.86E-11	5.42E-05	%IE-100-10B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A10B	0.2	15.7
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-YES	DBCOOL DET: DCOOL = YES		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1B,1C,1D FAIL TO OPEN		

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Table 19.1-67 (18 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
37	3.82E-11	1.62E-04	%IE-078-01D-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A01D	0.2	15.8
		4.10E-01	L2-PROB-RCSFAIL-1-2-LK	RCSFAIL DET - PROB THAT SG-LEAK = 1OF2-LEAK		
		9.00E-01	L2-PROB-RCSFAIL-NOSG-DEP	RCSFAIL DET - PROB THAT SGDEPRESS = NO-DEPRESS		
		9.76E-01	L2-PROB-RCSFAIL-NOSGSORV	RCSFAIL DET - PROB THAT SGSORV = NO-DEPRESS		
		9.45E-01	L2-PROB-RCSFAIL-NO-SGTR-1D	RCSFAIL DET - PROB THAT PI-SGTR = INTACT (1 SG DEPRESSURIZED)		
		8.89E-01	L2-PROB-RCSFAIL-NOSORV	RCSFAIL DET - PROBABILITY THAT RCSSORV = INTACT		
		5.00E-01	L2-PROB-RCSFAIL-RCSINT	RCSFAIL DET - PROB THAT CSSORV_LATE = RCS-INTACT		
		1.30E-01	L2-PROB-TISGTR-B	RCSFAIL DET - PROB THAT TI-SGTR = TI-SGTR (CASE B)		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
38	3.79E-11	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	0.1	16.0
		1.00E-01	L2-PROB-RCSFAIL-ALLSG-DEP	RCSFAIL DET - PROB THAT SGDEPRESS = ALL-DEPRESS		
		8.93E-01	L2-PROB-RCSFAIL-NO-SGTR-2D	RCSFAIL DET - PROB THAT PI-SGTR = INTACT (2 SGS DEPRESSURIZED)		
		8.89E-01	L2-PROB-RCSFAIL-NOSORV	RCSFAIL DET - PROBABILITY THAT RCSSORV = INTACT		
		5.00E-01	L2-PROB-RCSFAIL-RCSINT	RCSFAIL DET - PROB THAT CSSORV_LATE = RCS-INTACT		
		2.40E-01	L2-PROB-TISGTR-C	RCSFAIL DET - PROB THAT TI-SGTR = TI-SGTR (CASE C)		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		

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Table 19.1-67 (19 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
39	3.74E-11	5.24E-05	%IE-078-01D-FP-M	THE FLOOD INITIATING EVENT FOR A MODERATE BREAK OF FP PIPING IN ROOM 078-A01D MELTSTOP DET: CSRECSBS = NO	0.1	16.1
		1.00E-01	L2-PROB-CSRECSBS-NO			
		5.00E-01	L2-PROB-DCOOL-NO	DBCOOL DET: DCOOL = NO		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1B,1C,1D FAIL TO OPEN		
40	3.74E-11	5.24E-05	%IE-078-01D-FP-M	THE FLOOD INITIATING EVENT FOR A MODERATE BREAK OF FP PIPING IN ROOM 078-A01D MELTSTOP DET: CSRECSBS = NO	0.1	16.3
		1.00E-01	L2-PROB-CSRECSBS-NO			
		5.00E-01	L2-PROB-DCOOL-YES	DBCOOL DET: DCOOL = YES		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1B,1C,1D FAIL TO OPEN		

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Table 19.1-67 (20 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
41	3.63E-11	3.18E-04	%IE-100-20A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A20A	0.1	16.4
		1.00E-01	L2-PROB-RCSFAIL-ALLSG-DEP	RCSFAIL DET - PROB THAT SGDEPRESS = ALL-DEPRESS		
		8.93E-01	L2-PROB-RCSFAIL-NO-SGTR-2D	RCSFAIL DET - PROB THAT PI-SGTR = INTACT (2 SGS DEPRESSURIZED)		
		8.89E-01	L2-PROB-RCSFAIL-NOSORV	RCSFAIL DET - PROBABILITY THAT RCSSORV = INTACT		
		5.00E-01	L2-PROB-RCSFAIL-RCSINT	RCSFAIL DET - PROB THAT CSSORV_LATE = RCS-INTACT		
		2.40E-01	L2-PROB-TISGTR-C	RCSFAIL DET - PROB THAT TI-SGTR = TI-SGTR (CASE C)		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
42	3.50E-11	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	0.1	16.6
		4.10E-01	L2-PROB-RCSFAIL-1-2-LK	RCSFAIL DET - PROB THAT SG-LEAK = 1OF2-LEAK		
		9.00E-01	L2-PROB-RCSFAIL-NOSG-DEP	RCSFAIL DET - PROB THAT SGDEPRESS = NO-DEPRESS		
		9.76E-01	L2-PROB-RCSFAIL-NOSGSORV	RCSFAIL DET - PROB THAT SGSORV = NO-DEPRESS		
		8.89E-01	L2-PROB-RCSFAIL-NOSORV	RCSFAIL DET - PROBABILITY THAT RCSSORV = INTACT		
		5.00E-01	L2-PROB-RCSFAIL-RCSDEPR	RCSFAIL DET - PROB THAT CSSORV_LATE = RCS-DEPR		
		5.49E-02	L2-PROB-RCSFAIL-SGTR-1D	RCSFAIL DET - PROB THAT PI-SGTR = PI-SGTR (1 SG DEPRESSURIZED)		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		

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Table 19.1-67 (21 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
43	3.50E-11	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	0.1	16.7
		4.10E-01	L2-PROB-RCSFAIL-1-2-LK	RCSFAIL DET - PROB THAT SG-LEAK = 1OF2-LEAK		
		9.00E-01	L2-PROB-RCSFAIL-NOSG-DEP	RCSFAIL DET - PROB THAT SGDEPRESS = NO-DEPRESS		
		9.76E-01	L2-PROB-RCSFAIL-NOSGSORV	RCSFAIL DET - PROB THAT SGSORV = NO-DEPRESS		
		8.89E-01	L2-PROB-RCSFAIL-NOSORV	RCSFAIL DET - PROBABILITY THAT RCSSORV = INTACT		
		5.00E-01	L2-PROB-RCSFAIL-RCSINT	RCSFAIL DET - PROB THAT CSSORV_LATE = RCS-INTACT		
		5.49E-02	L2-PROB-RCSFAIL-SGTR-1D	RCSFAIL DET - PROB THAT PI-SGTR = PI-SGTR (1 SG DEPRESSURIZED)		
44	3.43E-11	1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE	0.1	16.8
		2.07E-04	%IE-078-44B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A44B		
		6.07E-03	H-CI-OPEN	OPERATOR'S FAILURE TO RECOVERY CIS VALVE BY LOCAL MANUAL OPERATION		
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1B,1C,1D FAIL TO OPEN		

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Table 19.1-67 (22 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
45	3.41E-11	7.89E-05	%IE-078-19A-FP-M	THE FLOOD INITIATING EVENT FOR A MODERATE BREAK OF FP PIPING IN ROOM 078-A19A MELTSTOP DET: CSRECSBS = NO	0.1	17.0
		1.00E-01	L2-PROB-CSRECSBS-NO			
		5.00E-01	L2-PROB-DCOOL-NO	DBCOOL DET: DCOOL = NO		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		1.65E-05	PFHBWQ3-SW2OUATBCD	CCF OF PCB BETWEEN UAT & 4.16KV SW01B,1C,1D FAIL TO OPEN		
46	3.41E-11	7.89E-05	%IE-078-19A-FP-M	THE FLOOD INITIATING EVENT FOR A MODERATE BREAK OF FP PIPING IN ROOM 078-A19A MELTSTOP DET: CSRECSBS = NO	0.1	17.1
		1.00E-01	L2-PROB-CSRECSBS-NO			
		5.00E-01	L2-PROB-DCOOL-YES	DBCOOL DET: DCOOL = YES		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		1.65E-05	PFHBWQ3-SW2OUATBCD	CCF OF PCB BETWEEN UAT & 4.16KV SW01B,1C,1D FAIL TO OPEN		

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Table 19.1-67 (23 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
47	3.35E-11	3.18E-04	%IE-100-20A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A20A	0.1	17.2
		4.10E-01	L2-PROB-RCSFAIL-1-2-LK	RCSFAIL DET - PROB THAT SG-LEAK = 1OF2-LEAK		
		9.00E-01	L2-PROB-RCSFAIL-NOSG-DEP	RCSFAIL DET - PROB THAT SGDEPRESS = NO-DEPRESS		
		9.76E-01	L2-PROB-RCSFAIL-NOSGSORV	RCSFAIL DET - PROB THAT SGSORV = NO-DEPRESS		
		8.89E-01	L2-PROB-RCSFAIL-NOSORV	RCSFAIL DET - PROBABILITY THAT RCSSORV = INTACT		
		5.00E-01	L2-PROB-RCSFAIL-RCSDEPR	RCSFAIL DET - PROB THAT CSSORV_LATE = RCS-DEPR		
		5.49E-02	L2-PROB-RCSFAIL-SGTR-1D	RCSFAIL DET - PROB THAT PI-SGTR = PI-SGTR (1 SG DEPRESSURIZED)		
48	3.35E-11	1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE	0.1	17.4
		3.18E-04	%IE-100-20A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A20A		
		4.10E-01	L2-PROB-RCSFAIL-1-2-LK	RCSFAIL DET - PROB THAT SG-LEAK = 1OF2-LEAK		
		9.00E-01	L2-PROB-RCSFAIL-NOSG-DEP	RCSFAIL DET - PROB THAT SGDEPRESS = NO-DEPRESS		
		9.76E-01	L2-PROB-RCSFAIL-NOSGSORV	RCSFAIL DET - PROB THAT SGSORV = NO-DEPRESS		
		8.89E-01	L2-PROB-RCSFAIL-NOSORV	RCSFAIL DET - PROBABILITY THAT RCSSORV = INTACT		
		5.00E-01	L2-PROB-RCSFAIL-RCSINT	RCSFAIL DET - PROB THAT CSSORV_LATE = RCS-INTACT		
		5.49E-02	L2-PROB-RCSFAIL-SGTR-1D	RCSFAIL DET - PROB THAT PI-SGTR = PI-SGTR (1 SG DEPRESSURIZED)		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		

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Table 19.1-67 (24 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
49	3.33E-11	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	0.1	17.5
		6.07E-03	H-CI-OPEN	OPERATOR'S FAILURE TO RECOVERY CIS VALVE BY LOCAL MANUAL OPERATION		
		1.65E-05	PFHBWQ3-SW2OUATACD	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1C,1D FAIL TO OPEN		
50	3.23E-11	2.83E-04	%IE-078-19A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19A	0.1	17.6
		1.00E-01	L2-PROB-RCSFAIL-ALLSG-DEP	RCSFAIL DET - PROB THAT SGDEPRESS = ALL-DEPRESS		
		8.93E-01	L2-PROB-RCSFAIL-NO-SGTR-2D	RCSFAIL DET - PROB THAT PI-SGTR = INTACT (2 SGS DEPRESSURIZED)		
		8.89E-01	L2-PROB-RCSFAIL-NOSORV	RCSFAIL DET - PROBABILITY THAT RCSSORV = INTACT		
		5.00E-01	L2-PROB-RCSFAIL-RCSINT	RCSFAIL DET - PROB THAT CSSORV_LATE = RCS-INTACT		
		2.40E-01	L2-PROB-TISGTR-C	RCSFAIL DET - PROB THAT TI-SGTR = TI-SGTR (CASE C)		
51	3.19E-11	1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE	0.1	17.7
		3.18E-04	%IE-100-20A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A20A		
		6.07E-03	H-CI-OPEN	OPERATOR'S FAILURE TO RECOVERY CIS VALVE BY LOCAL MANUAL OPERATION		
		1.65E-05	PFHBWQ3-SW2OUATBCD	CCF OF PCB BETWEEN UAT & 4.16KV SW01B,1C,1D FAIL TO OPEN		

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Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
52	3.00E-11	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	0.1	17.9
		9.00E-02	L2-PROB-RCSFAIL-2-2-LK	RCSFAIL DET - PROB THAT SG-LEAK = 2OF2-LEAK		
		9.00E-01	L2-PROB-RCSFAIL-NOSG-DEP	RCSFAIL DET - PROB THAT SGDEPRESS = NO-DEPRESS		
		9.76E-01	L2-PROB-RCSFAIL-NOSGSORV	RCSFAIL DET - PROB THAT SGSORV = NO-DEPRESS		
		8.93E-01	L2-PROB-RCSFAIL-NO-SGTR-2D	RCSFAIL DET - PROB THAT PI-SGTR = INTACT (2 SGS DEPRESSURIZED)		
		8.89E-01	L2-PROB-RCSFAIL-NOSORV	RCSFAIL DET - PROBABILITY THAT RCSSORV = INTACT		
		5.00E-01	L2-PROB-RCSFAIL-RCSINT	RCSFAIL DET - PROB THAT CSSORV_LATE = RCS-INTACT		
		2.40E-01	L2-PROB-TISGTR-C	RCSFAIL DET - PROB THAT TI-SGTR = TI-SGTR (CASE C)		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
53	3.00E-11	1.27E-04	%IE-078-19B-FP-M	THE FLOOD INITIATING EVENT FOR A MODERATE BREAK OF FP PIPING IN ROOM 078-A19B	0.1	18.0
		4.10E-01	L2-PROB-RCSFAIL-1-2-LK	RCSFAIL DET - PROB THAT SG-LEAK = 1OF2-LEAK		
		9.00E-01	L2-PROB-RCSFAIL-NOSG-DEP	RCSFAIL DET - PROB THAT SGDEPRESS = NO-DEPRESS		
		9.76E-01	L2-PROB-RCSFAIL-NOSGSORV	RCSFAIL DET - PROB THAT SGSORV = NO-DEPRESS		
		9.45E-01	L2-PROB-RCSFAIL-NO-SGTR-1D	RCSFAIL DET - PROB THAT PI-SGTR = INTACT (1 SG DEPRESSURIZED)		
		8.89E-01	L2-PROB-RCSFAIL-NOSORV	RCSFAIL DET - PROBABILITY THAT RCSSORV = INTACT		
		5.00E-01	L2-PROB-RCSFAIL-RCSINT	RCSFAIL DET - PROB THAT CSSORV_LATE = RCS-INTACT		
		1.30E-01	L2-PROB-TISGTR-B	RCSFAIL DET - PROB THAT TI-SGTR = TI-SGTR (CASE B)		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		

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Table 19.1-67 (26 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
54	2.98E-11	2.83E-04	%IE-078-19A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19A	0.1	18.1
		4.10E-01	L2-PROB-RCSFAIL-1-2-LK	RCSFAIL DET - PROB THAT SG-LEAK = 1OF2-LEAK		
		9.00E-01	L2-PROB-RCSFAIL-NOSG-DEP	RCSFAIL DET - PROB THAT SGDEPRESS = NO-DEPRESS		
		9.76E-01	L2-PROB-RCSFAIL-NOSGSORV	RCSFAIL DET - PROB THAT SGSORV = NO-DEPRESS		
		8.89E-01	L2-PROB-RCSFAIL-NOSORV	RCSFAIL DET - PROBABILITY THAT RCSSORV = INTACT		
		5.00E-01	L2-PROB-RCSFAIL-RCSDEPR	RCSFAIL DET - PROB THAT CSSORV_LATE = RCS-DEPR		
		5.49E-02	L2-PROB-RCSFAIL-SGTR-1D	RCSFAIL DET - PROB THAT PI-SGTR = PI-SGTR (1 SG DEPRESSURIZED)		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
55	2.98E-11	2.83E-04	%IE-078-19A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19A	0.1	18.2
		4.10E-01	L2-PROB-RCSFAIL-1-2-LK	RCSFAIL DET - PROB THAT SG-LEAK = 1OF2-LEAK		
		9.00E-01	L2-PROB-RCSFAIL-NOSG-DEP	RCSFAIL DET - PROB THAT SGDEPRESS = NO-DEPRESS		
		9.76E-01	L2-PROB-RCSFAIL-NOSGSORV	RCSFAIL DET - PROB THAT SGSORV = NO-DEPRESS		
		8.89E-01	L2-PROB-RCSFAIL-NOSORV	RCSFAIL DET - PROBABILITY THAT RCSSORV = INTACT		
		5.00E-01	L2-PROB-RCSFAIL-RCSINT	RCSFAIL DET - PROB THAT CSSORV_LATE = RCS-INTACT		
		5.49E-02	L2-PROB-RCSFAIL-SGTR-1D	RCSFAIL DET - PROB THAT PI-SGTR = PI-SGTR (1 SG DEPRESSURIZED)		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		

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Table 19.1-67 (27 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
56	2.96E-11	1.88E-05	%IE-078-15D-AF-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF AF PIPING IN ROOM 078-A15D	0.1	18.3
		1.00E+00	AFOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A AF BREAK WITH LESS THAN 10 MUNITE AVAILABLE		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-NO	DBCOOL DET: DCOOL = NO		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
57	2.96E-11	6.03E-05	PFHBWQ2-SW2OUATAC	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1C FAIL TO OPEN	0.1	18.5
		1.88E-05	%IE-078-15D-AF-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF AF PIPING IN ROOM 078-A15D		
		1.00E+00	AFOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A AF BREAK WITH LESS THAN 10 MUNITE AVAILABLE		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-YES	DBCOOL DET: DCOOL = YES		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		6.03E-05	PFHBWQ2-SW2OUATAC	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1C FAIL TO OPEN		

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Table 19.1-67 (28 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
58	2.87E-11	3.18E-04	%IE-100-20A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A20A	0.1	18.6
		9.00E-02	L2-PROB-RCSFAIL-2-2-LK	RCSFAIL DET - PROB THAT SG-LEAK = 2OF2-LEAK		
		9.00E-01	L2-PROB-RCSFAIL-NOSG-DEP	RCSFAIL DET - PROB THAT SGDEPRESS = NO-DEPRESS		
		9.76E-01	L2-PROB-RCSFAIL-NOSGSORV	RCSFAIL DET - PROB THAT SGSORV = NO-DEPRESS		
		8.93E-01	L2-PROB-RCSFAIL-NO-SGTR-2D	RCSFAIL DET - PROB THAT PI-SGTR = INTACT (2 SGS DEPRESSURIZED)		
		8.89E-01	L2-PROB-RCSFAIL-NOSORV	RCSFAIL DET - PROBABILITY THAT RCSSORV = INTACT		
		5.00E-01	L2-PROB-RCSFAIL-RCSINT	RCSFAIL DET - PROB THAT CSSORV_LATE = RCS-INTACT		
		2.40E-01	L2-PROB-TISGTR-C	RCSFAIL DET - PROB THAT TI-SGTR = TI-SGTR (CASE C)		
59	2.84E-11	1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE	0.1	18.7
		2.83E-04	%IE-078-19A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19A		
		6.07E-03	H-CI-OPEN	OPERATOR'S FAILURE TO RECOVERY CIS VALVE BY LOCAL MANUAL OPERATION		
60	2.82E-11	1.65E-05	PFHBWQ3-SW2OUATBCD	CCF OF PCB BETWEEN UAT & 4.16KV SW01B,1C,1D FAIL TO OPEN	0.1	18.8
		3.33E-04	%IE-078-10C-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A10C		
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		6.07E-03	H-CI-OPEN	OPERATOR'S FAILURE TO RECOVERY CIS VALVE BY LOCAL MANUAL OPERATION		
		6.03E-05	PFHBWQ2-SW2OUATBD	CCF OF PCB BETWEEN UAT & 4.16KV SW01B,1D FAIL TO OPEN		
		2.44E+01	COMBINATION_2537	HEP DEPENDENCY FACTOR FOR FPOPH-1-ISO-FL, H-CI-OPEN		

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Table 19.1-67 (29 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
61	2.82E-11	3.33E-04	%IE-078-10C-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A10C	0.1	18.9
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		6.07E-03	H-CI-OPEN	OPERATOR'S FAILURE TO RECOVERY CIS VALVE BY LOCAL MANUAL OPERATION		
		6.03E-05	PFHBWQ2-SW2OUATBD	CCF OF PCB BETWEEN UAT & 4.16KV SW01B,1D FAIL TO OPEN		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		1.73E+03	COMBINATION_2903	HEP DEPENDENCY FACTOR FOR FPOPH-1-ISO-FL, H-CI-OPEN, RCOPH-S-SDSE-FW		
62	2.81E-11	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	0.1	19.0
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		6.07E-03	H-CI-OPEN	OPERATOR'S FAILURE TO RECOVERY CIS VALVE BY LOCAL MANUAL OPERATION		
		6.03E-05	PFHBWQ2-SW2OUATAC	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1C FAIL TO OPEN		
		2.44E+01	COMBINATION_2537	HEP DEPENDENCY FACTOR FOR FPOPH-1-ISO-FL, H-CI-OPEN		
63	2.81E-11	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	0.1	19.1
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		6.07E-03	H-CI-OPEN	OPERATOR'S FAILURE TO RECOVERY CIS VALVE BY LOCAL MANUAL OPERATION		
		6.03E-05	PFHBWQ2-SW2OUATAC	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1C FAIL TO OPEN		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		1.73E+03	COMBINATION_2903	HEP DEPENDENCY FACTOR FOR FPOPH-1-ISO-FL, H-CI-OPEN, RCOPH-S-SDSE-FW		

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Table 19.1-67 (30 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
64	2.56E-11	2.83E-04	%IE-078-19A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19A	0.1	19.2
		9.00E-02	L2-PROB-RCSFAIL-2-2-LK	RCSFAIL DET - PROB THAT SG-LEAK = 2OF2-LEAK		
		9.00E-01	L2-PROB-RCSFAIL-NOSG-DEP	RCSFAIL DET - PROB THAT SGDEPRESS = NO-DEPRESS		
		9.76E-01	L2-PROB-RCSFAIL-NOSGSORV	RCSFAIL DET - PROB THAT SGSORV = NO-DEPRESS		
		8.93E-01	L2-PROB-RCSFAIL-NO-SGTR-2D	RCSFAIL DET - PROB THAT PI-SGTR = INTACT (2 SGS DEPRESSURIZED)		
		8.89E-01	L2-PROB-RCSFAIL-NOSORV	RCSFAIL DET - PROBABILITY THAT RCSSORV = INTACT		
		5.00E-01	L2-PROB-RCSFAIL-RCSINT	RCSFAIL DET - PROB THAT CSSORV_LATE = RCS-INTACT		
		2.40E-01	L2-PROB-TISGTR-C	RCSFAIL DET - PROB THAT TI-SGTR = TI-SGTR (CASE C)		
65	2.42E-11	1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE	0.1	19.3
		3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B		
		6.07E-03	H-CI-OPEN	OPERATOR'S FAILURE TO RECOVERY CIS VALVE BY LOCAL MANUAL OPERATION		
66	2.40E-11	1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE	0.1	19.4
		2.83E-04	%IE-078-19A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19A		
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		6.07E-03	H-CI-OPEN	OPERATOR'S FAILURE TO RECOVERY CIS VALVE BY LOCAL MANUAL OPERATION		
		6.03E-05	PFHBWQ2-SW2OUATBD	CCF OF PCB BETWEEN UAT & 4.16KV SW01B,1D FAIL TO OPEN		
		2.44E+01	COMBINATION_2537	HEP DEPENDENCY FACTOR FOR FPOPH-1-ISO-FL, H-CI-OPEN		

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Table 19.1-67 (31 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
67	2.40E-11	2.83E-04	%IE-078-19A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19A	0.1	19.5
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		6.07E-03	H-CI-OPEN	OPERATOR'S FAILURE TO RECOVERY CIS VALVE BY LOCAL MANUAL OPERATION		
		6.03E-05	PFHBWQ2-SW2OUATBD	CCF OF PCB BETWEEN UAT & 4.16KV SW01B,1D FAIL TO OPEN		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		1.73E+03	COMBINATION_2903	HEP DEPENDENCY FACTOR FOR FPOPH-1-ISO-FL, H-CI-OPEN, RCOPH-S-SDSE-FW		
68	2.37E-11	2.07E-04	%IE-078-44B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A44B	0.1	19.6
		1.00E-01	L2-PROB-RCSFAIL-ALLSG-DEP	RCSFAIL DET - PROB THAT SGDEPRESS = ALL-DEPRESS		
		8.93E-01	L2-PROB-RCSFAIL-NO-SGTR-2D	RCSFAIL DET - PROB THAT PI-SGTR = INTACT (2 SGS DEPRESSURIZED)		
		8.89E-01	L2-PROB-RCSFAIL-NOSORV	RCSFAIL DET - PROBABILITY THAT RCSSORV = INTACT		
		5.00E-01	L2-PROB-RCSFAIL-RCSINT	RCSFAIL DET - PROB THAT CSSORV_LATE = RCS-INTACT		
		2.40E-01	L2-PROB-TISGTR-C	RCSFAIL DET - PROB THAT TI-SGTR = TI-SGTR (CASE C)		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		

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Table 19.1-67 (32 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
69	2.34E-11	5.42E-05	%IE-100-10B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A10B MELTSTOP DET: CSRECSBS = NO	0.1	19.7
		1.00E-01	L2-PROB-CSRECSBS-NO			
		5.00E-01	L2-PROB-DCOOL-NO	DBCOOL DET: DCOOL = NO		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		1.65E-05	PFHBWQ3-SW2OUATACD	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1C,1D FAIL TO OPEN		
70	2.34E-11	5.42E-05	%IE-100-10B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A10B MELTSTOP DET: CSRECSBS = NO	0.1	19.8
		1.00E-01	L2-PROB-CSRECSBS-NO			
		5.00E-01	L2-PROB-DCOOL-YES	DBCOOL DET: DCOOL = YES		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		1.65E-05	PFHBWQ3-SW2OUATACD	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1C,1D FAIL TO OPEN		
71	2.31E-11	3.18E-04	%IE-100-20A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A20A	0.1	19.9
		6.07E-03	H-CI-OPEN	OPERATOR'S FAILURE TO RECOVERY CIS VALVE BY LOCAL MANUAL OPERATION		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		

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Table 19.1-67 (33 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
72	2.27E-11	3.18E-04	%IE-100-20A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A20A	0.1	20.0
		8.00E-03	FPOPH-2-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK BETWEEN 20 AND 40 MINUTES AVAILABLE		
		6.07E-03	H-CI-OPEN	OPERATOR'S FAILURE TO RECOVERY CIS VALVE BY LOCAL MANUAL OPERATION		
		6.03E-05	PFHBWQ2-SW2OUATBD	CCF OF PCB BETWEEN UAT & 4.16KV SW01B,1D FAIL TO OPEN		
		2.44E+01	COMBINATION_2540	HEP DEPENDENCY FACTOR FOR FPOPH-2-ISO-FL, H-CI-OPEN		
73	2.27E-11	3.18E-04	%IE-100-20A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A20A	0.1	20.1
		8.00E-03	FPOPH-2-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK BETWEEN 20 AND 40 MINUTES AVAILABLE		
		6.07E-03	H-CI-OPEN	OPERATOR'S FAILURE TO RECOVERY CIS VALVE BY LOCAL MANUAL OPERATION		
		6.03E-05	PFHBWQ2-SW2OUATBD	CCF OF PCB BETWEEN UAT & 4.16KV SW01B,1D FAIL TO OPEN		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
74	2.26E-11	1.73E+03	COMBINATION_2909	HEP DEPENDENCY FACTOR FOR FPOPH-2-ISO-FL, H-CI-OPEN, RCOPH-S-SDSE-FW	0.1	20.1
		5.24E-05	%IE-078-01D-FP-M	THE FLOOD INITIATING EVENT FOR A MODERATE BREAK OF FP PIPING IN ROOM 078-A01D		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-NO	DBCOOL DET: DCOOL = NO		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		1.65E-05	PFHBWQ3-SW2OUATABC	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1B,1C FAIL TO OPEN		

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Table 19.1-67 (34 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
75	2.26E-11	5.24E-05	%IE-078-01D-FP-M	THE FLOOD INITIATING EVENT FOR A MODERATE BREAK OF FP PIPING IN ROOM 078-A01D MELTSTOP DET: CSRECSBS = NO	0.1	20.2
		1.00E-01	L2-PROB-CSRECSBS-NO			
		5.00E-01	L2-PROB-DCOOL-YES	DBCOOL DET: DCOOL = YES		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		1.65E-05	PFHBWQ3-SW2OUATABC	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1B,1C FAIL TO OPEN		
76	2.18E-11	2.07E-04	%IE-078-44B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A44B RCSFAIL DET - PROB THAT SG-LEAK = 1OF2-LEAK	0.1	20.3
		4.10E-01	L2-PROB-RCSFAIL-1-2-LK			
		9.00E-01	L2-PROB-RCSFAIL-NOSG-DEP	RCSFAIL DET - PROB THAT SGDEPRESS = NO-DEPRESS		
		9.76E-01	L2-PROB-RCSFAIL-NOSGSORV	RCSFAIL DET - PROB THAT SGSORV = NO-DEPRESS		
		8.89E-01	L2-PROB-RCSFAIL-NOSORV	RCSFAIL DET - PROBABILITY THAT RCSSORV = INTACT		
		5.00E-01	L2-PROB-RCSFAIL-RCSDEPR	RCSFAIL DET - PROB THAT CSSORV_LATE = RCS-DEPR		
		5.49E-02	L2-PROB-RCSFAIL-SGTR-1D	RCSFAIL DET - PROB THAT PI-SGTR = PI-SGTR (1 SG DEPRESSURIZED)		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		

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Table 19.1-67 (35 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
77	2.18E-11	2.07E-04	%IE-078-44B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A44B	0.1	20.4
		4.10E-01	L2-PROB-RCSFAIL-1-2-LK	RCSFAIL DET - PROB THAT SG-LEAK = 1OF2-LEAK		
		9.00E-01	L2-PROB-RCSFAIL-NOSG-DEP	RCSFAIL DET - PROB THAT SGDEPRESS = NO-DEPRESS		
		9.76E-01	L2-PROB-RCSFAIL-NOSGSORV	RCSFAIL DET - PROB THAT SGSORV = NO-DEPRESS		
		8.89E-01	L2-PROB-RCSFAIL-NOSORV	RCSFAIL DET - PROBABILITY THAT RCSSORV = INTACT		
		5.00E-01	L2-PROB-RCSFAIL-RCSINT	RCSFAIL DET - PROB THAT CSSORV_LATE = RCS-INTACT		
		5.49E-02	L2-PROB-RCSFAIL-SGTR-1D	RCSFAIL DET - PROB THAT PI-SGTR = PI-SGTR (1 SG DEPRESSURIZED)		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
78	2.18E-11	1.88E-05	%IE-078-15D-AF-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF AF PIPING IN ROOM 078-A15D	0.1	20.5
		1.00E+00	AFOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A AF BREAK WITH LESS THAN 10 MUNITE AVAILABLE		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-NO	DBCOOL DET: DCOOL = NO		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		6.66E-03	PFHBO1A-SW01A-H2	FAILS TO OPEN OF PCB SW01A-H2 OF 4.16KV SWGR SW01A FROM UAT		
		6.66E-03	PFHBO2A-SW01C-C2	4.16KV CLASS 1E 4.16KV SWITCHGEAR PCB SW01C-C2 (UAT) FAILS TO OPEN		

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Table 19.1-67 (36 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
79	2.18E-11	1.88E-05	%IE-078-15D-AF-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF AF PIPING IN ROOM 078-A15D	0.1	20.6
		1.00E+00	AFOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A AF BREAK WITH LESS TxHAN 10 MUNITE AVAILABLE		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-YES	DBCOOL DET: DCOOL = YES		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		6.66E-03	PFHBO1A-SW01A-H2	FAILS TO OPEN OF PCB SW01A-H2 OF 4.16KV SWGR SW01A FROM UAT		
		6.66E-03	PFHBO2A-SW01C-C2	4.16KV CLASS 1E 4.16KV SWITCHGEAR PCB SW01C-C2 (UAT) FAILS TO OPEN		
80	2.10E-11	1.27E-04	%IE-078-19B-FP-M	THE FLOOD INITIATING EVENT FOR A MODERATE BREAK OF FP PIPING IN ROOM 078-A19B	0.1	20.7
		6.07E-03	H-CI-OPEN	OPERATOR'S FAILURE TO RECOVERY CIS VALVE BY LOCAL MANUAL OPERATION		
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1B,1C,1D FAIL TO OPEN		

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Table 19.1-67 (37 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
81	2.09E-11	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	0.1	20.7
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-NO	DBCOOL DET: DCOOL = NO		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		6.03E-05	PFHBWQ2-SW2OUATAC	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1C FAIL TO OPEN		
82	2.09E-11	4.00E-02	WOCHM2B-CH02B	ECW CHILLER 2B TRAIN UNAVAILABLE DUE TO T&M	0.1	20.8
		3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-YES	DBCOOL DET: DCOOL = YES		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		6.03E-05	PFHBWQ2-SW2OUATAC	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1C FAIL TO OPEN		
		4.00E-02	WOCHM2B-CH02B	ECW CHILLER 2B TRAIN UNAVAILABLE DUE TO T&M		

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Table 19.1-67 (38 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
83	2.08E-11	2.07E-04	%IE-078-44B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A44B	0.1	20.9
		6.07E-03	H-CI-OPEN	OPERATOR'S FAILURE TO RECOVERY CIS VALVE BY LOCAL MANUAL OPERATION		
		1.65E-05	PFHBWQ3-SW2OUATACD	CCF OF PCB BETWEEN UAT & 4.16KV SW01A,1C,1D FAIL TO OPEN		
84	2.07E-11	3.33E-04	%IE-078-10C-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A10C	0.1	21.0
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		6.07E-03	H-CI-OPEN	OPERATOR'S FAILURE TO RECOVERY CIS VALVE BY LOCAL MANUAL OPERATION		
		6.66E-03	PFHBO1B-SW01B-H2	4.16KV CLASS 1E 4.16KV SWITCHGEAR PCB SW01B-H2 (UAT) FAILS TO OPEN		
		6.66E-03	PFHBO2B-SW01D-G2	4.16KV CLASS 1E 4.16KV SWITCHGEAR PCB SW01D-G2 (UAT) FAILS TO OPEN		
		2.44E+01	COMBINATION_2537	HEP DEPENDENCY FACTOR FOR FPOPH-1-ISO-FL, H-CI-OPEN		
85	2.07E-11	3.33E-04	%IE-078-10C-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A10C	0.1	21.1
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		6.07E-03	H-CI-OPEN	OPERATOR'S FAILURE TO RECOVERY CIS VALVE BY LOCAL MANUAL OPERATION		
		6.66E-03	PFHBO1B-SW01B-H2	4.16KV CLASS 1E 4.16KV SWITCHGEAR PCB SW01B-H2 (UAT) FAILS TO OPEN		
		6.66E-03	PFHBO2B-SW01D-G2	4.16KV CLASS 1E 4.16KV SWITCHGEAR PCB SW01D-G2 (UAT) FAILS TO OPEN		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		1.73E+03	COMBINATION_2903	HEP DEPENDENCY FACTOR FOR FPOPH-1-ISO-FL, H-CI-OPEN, RCOPH-S-SDSE-FW		

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Table 19.1-67 (39 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
86	2.07E-11	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	0.1	21.1
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		6.07E-03	H-CI-OPEN	OPERATOR'S FAILURE TO RECOVERY CIS VALVE BY LOCAL MANUAL OPERATION		
		6.66E-03	PFHBO1A-SW01A-H2	FAILS TO OPEN OF PCB SW01A-H2 OF 4.16KV SWGR SW01A FROM UAT		
		6.66E-03	PFHBO2A-SW01C-C2	4.16KV CLASS 1E 4.16KV SWITCHGEAR PCB SW01C-C2 (UAT) FAILS TO OPEN		
		2.44E+01	COMBINATION_2537	HEP DEPENDENCY FACTOR FOR FPOPH-1-ISO-FL, H-CI-OPEN		
87	2.07E-11	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	0.1	21.2
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		6.07E-03	H-CI-OPEN	OPERATOR'S FAILURE TO RECOVERY CIS VALVE BY LOCAL MANUAL OPERATION		
		6.66E-03	PFHBO1A-SW01A-H2	FAILS TO OPEN OF PCB SW01A-H2 OF 4.16KV SWGR SW01A FROM UAT		
		6.66E-03	PFHBO2A-SW01C-C2	4.16KV CLASS 1E 4.16KV SWITCHGEAR PCB SW01C-C2 (UAT) FAILS TO OPEN		
		1.41E-02	RCOPH-S-SDSE-FW	OPERATOR'S FAILURE OF POSRVS EARLY PHASE OPEN		
		1.73E+03	COMBINATION_2903	HEP DEPENDENCY FACTOR FOR FPOPH-1-ISO-FL, H-CI-OPEN, RCOPH-S-SDSE-FW		
88	2.06E-11	2.83E-04	%IE-078-19A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19A	0.1	21.3
		6.07E-03	H-CI-OPEN	OPERATOR'S FAILURE TO RECOVERY CIS VALVE BY LOCAL MANUAL OPERATION		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		

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Table 19.1-67 (40 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
89	2.00E-11	3.18E-04	%IE-100-20A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A20A	0.1	21.4
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-NO	DBCOOL DET: DCOOL = NO		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		6.03E-05	PFHBWQ2-SW2OUATBD	CCF OF PCB BETWEEN UAT & 4.16KV SW01B,1D FAIL TO OPEN		
90	2.00E-11	4.00E-02	WOCHM2A-CH02A	ECW CHILLER 2A TRAIN UNAVAILABLE DUE TO T&M	0.1	21.5
		3.18E-04	%IE-100-20A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A20A		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-YES	DBCOOL DET: DCOOL = YES		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		6.03E-05	PFHBWQ2-SW2OUATBD	CCF OF PCB BETWEEN UAT & 4.16KV SW01B,1D FAIL TO OPEN		
		4.00E-02	WOCHM2A-CH02A	ECW CHILLER 2A TRAIN UNAVAILABLE DUE TO T&M		

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Table 19.1-67 (41 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
91	1.89E-11	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	0.1	21.5
		1.00E-01	L2-PROB-RCSFAIL-ALLSG-DEP	RCSFAIL DET - PROB THAT SGDEPRESS = ALL-DEPRESS		
		8.89E-01	L2-PROB-RCSFAIL-NOSORV	RCSFAIL DET - PROBABILITY THAT RCSSORV = INTACT		
		5.00E-01	L2-PROB-RCSFAIL-RCSDEPR	RCSFAIL DET - PROB THAT CSSORV_LATE = RCS-DEPR		
		1.07E-01	L2-PROB-RCSFAIL-SGTR-2D	RCSFAIL DET - PROB THAT PI-SGTR = PI-SGTR (2 SGS DEPRESSURIZED)		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
92	1.89E-11	3.32E-04	%IE-078-19B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19B	0.1	21.6
		1.00E-01	L2-PROB-RCSFAIL-ALLSG-DEP	RCSFAIL DET - PROB THAT SGDEPRESS = ALL-DEPRESS		
		8.89E-01	L2-PROB-RCSFAIL-NOSORV	RCSFAIL DET - PROBABILITY THAT RCSSORV = INTACT		
		5.00E-01	L2-PROB-RCSFAIL-RCSINT	RCSFAIL DET - PROB THAT CSSORV_LATE = RCS-INTACT		
		1.07E-01	L2-PROB-RCSFAIL-SGTR-2D	RCSFAIL DET - PROB THAT PI-SGTR = PI-SGTR (2 SGS DEPRESSURIZED)		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		

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Table 19.1-67 (42 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
93	1.87E-11	2.07E-04	%IE-078-44B-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A44B	0.1	21.7
		9.00E-02	L2-PROB-RCSFAIL-2-2-LK	RCSFAIL DET - PROB THAT SG-LEAK = 2OF2-LEAK		
		9.00E-01	L2-PROB-RCSFAIL-NOSG-DEP	RCSFAIL DET - PROB THAT SGDEPRESS = NO-DEPRESS		
		9.76E-01	L2-PROB-RCSFAIL-NOSGSORV	RCSFAIL DET - PROB THAT SGSORV = NO-DEPRESS		
		8.93E-01	L2-PROB-RCSFAIL-NO-SGTR-2D	RCSFAIL DET - PROB THAT PI-SGTR = INTACT (2 SGS DEPRESSURIZED)		
		8.89E-01	L2-PROB-RCSFAIL-NOSORV	RCSFAIL DET - PROBABILITY THAT RCSSORV = INTACT		
		5.00E-01	L2-PROB-RCSFAIL-RCSINT	RCSFAIL DET - PROB THAT CSSORV_LATE = RCS-INTACT		
		2.40E-01	L2-PROB-TISGTR-C	RCSFAIL DET - PROB THAT TI-SGTR = TI-SGTR (CASE C)		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
94	1.86E-11	7.89E-05	%IE-078-19A-FP-M	THE FLOOD INITIATING EVENT FOR A MODERATE BREAK OF FP PIPING IN ROOM 078-A19A	0.1	21.8
		4.10E-01	L2-PROB-RCSFAIL-1-2-LK	RCSFAIL DET - PROB THAT SG-LEAK = 1OF2-LEAK		
		9.00E-01	L2-PROB-RCSFAIL-NOSG-DEP	RCSFAIL DET - PROB THAT SGDEPRESS = NO-DEPRESS		
		9.76E-01	L2-PROB-RCSFAIL-NOSGSORV	RCSFAIL DET - PROB THAT SGSORV = NO-DEPRESS		
		9.45E-01	L2-PROB-RCSFAIL-NO-SGTR-1D	RCSFAIL DET - PROB THAT PI-SGTR = INTACT (1 SG DEPRESSURIZED)		
		8.89E-01	L2-PROB-RCSFAIL-NOSORV	RCSFAIL DET - PROBABILITY THAT RCSSORV = INTACT		
		5.00E-01	L2-PROB-RCSFAIL-RCSINT	RCSFAIL DET - PROB THAT CSSORV_LATE = RCS-INTACT		
		1.30E-01	L2-PROB-TISGTR-B	RCSFAIL DET - PROB THAT TI-SGTR = TI-SGTR (CASE B)		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		

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Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
95	1.85E-11	1.62E-04	%IE-078-01D-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A01D	0.1	21.8
		1.00E-01	L2-PROB-RCSFAIL-ALLSG-DEP	RCSFAIL DET - PROB THAT SGDEPRESS = ALL-DEPRESS		
		8.93E-01	L2-PROB-RCSFAIL-NO-SGTR-2D	RCSFAIL DET - PROB THAT PI-SGTR = INTACT (2 SGS DEPRESSURIZED)		
		8.89E-01	L2-PROB-RCSFAIL-NOSORV	RCSFAIL DET - PROBABILITY THAT RCSSORV = INTACT		
		5.00E-01	L2-PROB-RCSFAIL-RCSINT	RCSFAIL DET - PROB THAT CSSORV_LATE = RCS-INTACT		
		2.40E-01	L2-PROB-TISGTR-C	RCSFAIL DET - PROB THAT TI-SGTR = TI-SGTR (CASE C)		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
96	1.81E-11	3.18E-04	%IE-100-20A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A20A	0.1	21.9
		1.00E-01	L2-PROB-RCSFAIL-ALLSG-DEP	RCSFAIL DET - PROB THAT SGDEPRESS = ALL-DEPRESS		
		8.89E-01	L2-PROB-RCSFAIL-NOSORV	RCSFAIL DET - PROBABILITY THAT RCSSORV = INTACT		
		5.00E-01	L2-PROB-RCSFAIL-RCSDEPR	RCSFAIL DET - PROB THAT CSSORV_LATE = RCS-DEPR		
		1.07E-01	L2-PROB-RCSFAIL-SGTR-2D	RCSFAIL DET - PROB THAT PI-SGTR = PI-SGTR (2 SGS DEPRESSURIZED)		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		

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Table 19.1-67 (44 of 45)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
97	1.81E-11	3.18E-04	%IE-100-20A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 100-A20A	0.1	22.0
		1.00E-01	L2-PROB-RCSFAIL-ALLSG-DEP	RCSFAIL DET - PROB THAT SGDEPRESS = ALL-DEPRESS		
		8.89E-01	L2-PROB-RCSFAIL-NOSORV	RCSFAIL DET - PROBABILITY THAT RCSSORV = INTACT		
		5.00E-01	L2-PROB-RCSFAIL-RCSINT	RCSFAIL DET - PROB THAT CSSORV_LATE = RCS-INTACT		
		1.07E-01	L2-PROB-RCSFAIL-SGTR-2D	RCSFAIL DET - PROB THAT PI-SGTR = PI-SGTR (2 SGS DEPRESSURIZED)		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
98	1.78E-11	2.83E-04	%IE-078-19A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19A	0.1	22.1
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-NO	DBCOOL DET: DCOOL = NO		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		6.03E-05	PFHBWQ2-SW2OUATBD	CCF OF PCB BETWEEN UAT & 4.16KV SW01B,1D FAIL TO OPEN		
		4.00E-02	WOCHM2A-CH02A	ECW CHILLER 2A TRAIN UNAVAILABLE DUE TO T&M		

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Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
99	1.78E-11	2.83E-04	%IE-078-19A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19A	0.1	22.1
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	L2-PROB-DCOOL-YES	DBCOOL DET: DCOOL = YES		
		9.99E-01	L2-PROB-ECFEVSE-INT-A	ECF DET: ECFEVSE = INT (CASE A)		
		5.23E-01	L2-PROB-LCF-WOB-RUPT	DET LCF: LCFWOB = RUPTURE		
		1.00E+00	L2-PROB-MELTSTOP-MTSTOP	MELTSTOP: NOMELTSTOP = MTSTOP (ONE IN BASE CASE)		
		9.99E-01	L2-PROB-NODCF-LOW-P	DCF DET: DCFMODE = NO DCF (LOW PRESSURE BRANCH)		
		6.03E-05	PFHBWQ2-SW2OUATBD	CCF OF PCB BETWEEN UAT & 4.16KV SW01B,1D FAIL TO OPEN		
100	1.76E-11	4.00E-02	WOCHM2A-CH02A	ECW CHILLER 2A TRAIN UNAVAILABLE DUE TO T&M	0.1	22.2
		2.83E-04	%IE-078-19A-FP-X	THE FLOOD INITIATING EVENT FOR A MAJOR BREAK OF FP PIPING IN ROOM 078-A19A		
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		6.07E-03	H-CI-OPEN	OPERATOR'S FAILURE TO RECOVERY CIS VALVE BY LOCAL MANUAL OPERATION		
		6.66E-03	PFHBO1B-SW01B-H2	4.16KV CLASS 1E 4.16KV SWITCHGEAR PCB SW01B-H2 (UAT) FAILS TO OPEN		
		6.66E-03	PFHBO2B-SW01D-G2	4.16KV CLASS 1E 4.16KV SWITCHGEAR PCB SW01D-G2 (UAT) FAILS TO OPEN		
		2.44E+01	COMBINATION_2537	HEP DEPENDENCY FACTOR FOR FPOPH-1-ISO-FL, H-CI-OPEN		

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Table 19.1-96 (1 of 23)

LPSD Internal Events PRA Top 100 CDF Cutsets - All POS

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
1	6.58E-07	2.90E-03	%SO	RCS Overdraining due to SCS	36.5	36.5
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		3.49E-04	HR-FB-SOP05-01	Operator Fails to Feed during SO POS 5 w/makeup established		
		6.76E-03	HR-RS-SOP05	Operator Fails to Restore SCS during SO POS 5		
		1.44E+02	COMBINATION_1-LP	HEP dependency factor for HR-RS-SOP05,HR-FB-SOP05-01		
2	1.21E-07	2.90E-01	%SL	RCS Overdraining due to SCS	6.7	43.2
		1.23E-03	BE-RATE-P05	Conversion factor (Outage-yr → Calendar yr, 1/(18month/12month)) for Demand Failure		
		3.49E-04	HR-FB-SLP05-01	HRA Dependence for RS & FB at SO POS11		
		6.76E-03	HR-RS-SLP05	OPERATOR FAILS TO RESTORE SCS AT SO POS11		
		1.44E+02	COMBINATION_8-LP	HEP dependency factor for HR-RS-SLP05,HR-FB-SLP05-01		
3	7.86E-08	2.34E-04	%TC	Total Loss of Component Cooling Water	4.4	47.5
		3.36E-04	BE-RATE-P03A	Conversion factor (SD-yr -> Calendar yr) for POS03A duration		
4	7.86E-08	2.34E-04	%TS	Total Loss of Essential Service Water	4.4	51.9
		3.36E-04	BE-RATE-P03A	Conversion factor (SD-yr -> Calendar yr) for POS03A duration		

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Table 19.1-96 (2 of 23)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
5	7.31E-08	2.90E-03	%SO	RCS Overdraining due to SCS	4.0	55.9
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		2.72E-03	HR-FB-SOP05-02	Operator Fails to Feed during SO POS 5 w/makeup failed		
		7.18E-04	HR-MI-SOP05	Operator Fails to Isolate and Makeup SO at POS 5		
		1.93E+01	COMBINATION_2-LP	HEP dependency factor for HR-MI-SOP05,HR-FB-SOP05-02		
6	7.02E-08	2.90E-03	%SO	RCS Overdraining due to SCS	3.9	59.8
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		5.37E-04	HR-FB-SOP11-02	Operator Fails to Feed during SO POS 11 w/makeup failed		
		7.18E-04	HR-MI-SOP11	Operator Fails to Isolate and Makeup SO at POS 11		
		9.41E+01	COMBINATION_4-LP	HEP dependency factor for HR-MI-SOP11,HR-FB-SOP11-02		
7	6.72E-08	1.60E-01	%SL1	Small LOCA at Reduced Inventory	3.7	63.6
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		5.37E-04	HR-FB-JLP05-01	Operator Fails to Feed during JL POS 5 w/makeup established		
		6.76E-03	HR-RS-JLP05	Operator Fails to Restore SCS during JL POS 5		
		9.41E+01	COMBINATION_19-LP	HEP dependency factor for HR-RS-JLP05,HR-FB-JLP05-01		
8	2.98E-08	3.66E-03	%PL	STUCK OPEN OF POSRV	1.6	65.2
		6.67E-01	BE-RATE-OT-02	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 02		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Table 19.1-96 (3 of 23)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
9	2.51E-08	1.40E-01	%S1	Loss of SCS (S1)	1.4	66.6
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		3.49E-04	HR-FB-S1P05	Operator Fails to Feed during S1 POS 5		
		4.18E-01	HR-RS-S1P05	Operator Fails to Restore SCS during S1 POS 5		
		1.00E+00	COMBINATION_21-LP	HEP dependency factor for HR-RS-S1P05,HR-FB-S1P05		
10	2.36E-08	2.90E-03	%SO	RCS Overdraining due to SCS	1.3	67.9
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
11	2.36E-08	2.90E-03	%SO	RCS Overdraining due to SCS	1.3	69.2
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
12	2.32E-08	2.90E-03	%SO	RCS Overdraining due to SCS	1.3	70.5
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		

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Table 19.1-96 (4 of 23)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
13	2.30E-08	3.50E-02	%SL2	Small LOCA above Reduced Inventory	1.3	71.8
		6.26E-03	BE-RATE-P10	Conversion factor (SD-yr -> Calendar yr) for POS10 duration		
		5.37E-04	HR-FB-JLP10-01	Operator Fails to Feed during JL POS 10 w/makeup established		
		2.08E-03	HR-RS-JLP10	Operator Fails to Restore SCS during JL POS 10		
		9.41E+01	COMBINATION_16-LP	HEP dependency factor for HR-RS-JLP10,HR-FB-JLP10-01		
14	1.54E-08	3.50E-02	%SL2	Small LOCA above Reduced Inventory	0.9	72.6
		4.01E-03	BE-RATE-P06	Conversion factor (SD-yr -> Calendar yr) for POS6 duration		
		2.72E-03	HR-FB-JLP06-01	Operator Fails to Feed during JL POS 6 w/makeup established		
		2.08E-03	HR-RS-JLP06	Operator Fails to Restore SCS during JL POS 6		
		1.93E+01	COMBINATION_26-LP	HEP dependency factor for HR-RS-JLP06,HR-FB-JLP06-01		
15	1.35E-08	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.7	73.4
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		2.72E-03	HR-FB-SLP05-02	Operator Fails to Feed during SL POS 5 w/makeup failed		
		7.18E-04	HR-MI-SLP05	Operator Fails to Isolate and Makeup SL at POS 5		
		1.93E+01	COMBINATION_9-LP	HEP dependency factor for HR-MI-SLP05,HR-FB-SLP05-02		
16	1.34E-08	6.39E-02	%LPSW	Loss of offsite power of Switchyard-centered for LPSD	0.7	74.1
		3.36E-04	BE-RATE-P03A	Conversion factor (SD-yr -> Calendar yr) for POS03A duration		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		2.50E-02	DGDGR-B-DGB	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01B		

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Table 19.1-96 (5 of 23)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
17	1.19E-08	3.66E-03	%PL	STUCK OPEN OF POSRV	0.7	74.8
		6.67E-01	BE-RATE-OT-02	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 02		
		4.86E-06	WOCHKQ4-CH01A/1B/2A/2B	4/4 CCF OF ECW CHILLERS 1A/2A/1B/2B FAIL TO RUN		
18	1.11E-08	5.28E-02	%LPPL	Loss of offsite power of Plant-centered for LPSD	0.6	75.4
		3.36E-04	BE-RATE-P03A	Conversion factor (SD-yr -> Calendar yr) for POS03A duration		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		2.50E-02	DGDGR-B-DGB	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01B		
	1.02E-08	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.6	75.9
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		5.37E-04	HR-FB-SLP11-02	Operator Fails to Feed during SL POS 11 w/makeup failed		
		7.18E-04	HR-MI-SLP11	Operator Fails to Isolate and Makeup SL at POS 11		
		9.41E+01	COMBINATION_13-LP	HEP dependency factor for HR-MI-SLP11,HR-FB-SLP11-02		
20	1.01E-08	3.66E-03	%PL	STUCK OPEN OF POSRV	0.6	76.5
		6.67E-01	BE-RATE-OT-02	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 02		
		4.14E-06	SIMPWQ4-CSP1A/B/SCP1A/B	4/4 CCF OF CSP PP01A/PP01B AND SCP PP01A/PP01B FAIL TO START		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
21	7.95E-09	3.50E-02	%SL2	Small LOCA above Reduced Inventory	0.4	76.9
		6.26E-03	BE-RATE-P10	Conversion factor (SD-yr -> Calendar yr) for POS10 duration		
		5.37E-04	HR-FB-JLP10-02	Operator Fails to Feed during JL POS 10 w/makeup failed		
		7.18E-04	HR-MI-JLP10	Operator Fails to Isolate and Makeup JL at POS 10		
		9.41E+01	COMBINATION_17-LP	HEP dependency factor for HR-MI-JLP10,HR-FB-JLP10-02		
22	7.70E-09	3.67E-02	%LPWE	Loss of offsite power of Weather-related for LPSD	0.4	77.4
		3.36E-04	BE-RATE-P03A	Conversion factor (SD-yr -> Calendar yr) for POS03A duration		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		2.50E-02	DGDGR-B-DGB	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01B		
23	7.43E-09	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.4	77.8
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		2.72E-03	HR-FB-JLP05-02	Operator Fails to Feed during JL POS 5 w/makeup failed		
		7.18E-04	HR-MI-JLP05	Operator Fails to Isolate and Makeup JL at POS 5		
		1.93E+01	COMBINATION_20-LP	HEP dependency factor for HR-MI-JLP05,HR-FB-JLP05-02		
24	6.74E-09	1.40E-01	%S1	Loss of SCS (S1)	0.4	78.2
		4.01E-03	BE-RATE-P06	Conversion factor (SD-yr -> Calendar yr) for POS6 duration		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		

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Table 19.1-96 (7 of 23)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
25	6.27E-09	3.50E-02	%KV	Loss of Class 1E 4.16KV	0.3	78.5
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		3.49E-04	HR-FB-KVP05	Operator Fails to Feed during KV POS 5		
		4.18E-01	HR-RS-KVP05	Operator Fails to Restore SCS during KV POS 5		
		1.00E+00	COMBINATION_52-LP	HEP dependency factor for HR-RS-KVP05,HR-FB-KVP05		
26	5.61E-09	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.3	78.8
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		5.37E-04	HR-FB-JLP11-02	Operator Fails to Feed during JL POS 11 w/makeup failed		
		7.18E-04	HR-MI-JLP11	Operator Fails to Isolate and Makeup JL at POS 11		
		9.41E+01	COMBINATION_24-LP	HEP dependency factor for HR-MI-JLP11,HR-FB-JLP11-02		
27	5.30E-09	3.50E-02	%SL2	Small LOCA above Reduced Inventory	0.3	79.1
		4.01E-03	BE-RATE-P06	Conversion factor (SD-yr -> Calendar yr) for POS6 duration		
		2.72E-03	HR-FB-JLP06-02	Operator Fails to Feed during JL POS 6 w/makeup failed		
		7.18E-04	HR-MI-JLP06	Operator Fails to Isolate and Makeup JL at POS 6		
		1.93E+01	COMBINATION_27-LP	HEP dependency factor for HR-MI-JLP06,HR-FB-JLP06-02		
28	4.84E-09	1.40E-01	%S1	Loss of SCS (S1)	0.3	79.4
		3.07E-04	BE-RATE-P12A	Conversion factor (SD-yr -> Calendar yr) for POS12A duration		
		3.49E-04	HR-FB-S1P12A	Operator Fails to Feed during S1 POS 12A		
		3.23E-01	HR-RS-S1P12A	Operator Fails to Restore SCS during S1 POS 12A		
		1.00E+00	COMBINATION_53-LP	HEP dependency factor for HR-RS-S1P12A,HR-FB-S1P12A		

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Table 19.1-96 (8 of 23)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
29	4.60E-09	1.40E-01	%S1	Loss of SCS (S1)	0.3	79.6
		2.74E-03	BE-RATE-P03B	Conversion factor (SD-yr -> Calendar yr) for POS03B duration		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
30	4.35E-09	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.2	79.9
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
31	4.28E-09	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.2	80.1
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
32	4.10E-09	1.40E-01	%S1	Loss of SCS (S1)	0.2	80.3
		2.44E-03	BE-RATE-P13	Conversion factor (SD-yr -> Calendar yr) for POS13 duration		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
33	3.94E-09	2.20E-02	%S2	Loss of SCS (S2)	0.2	80.6
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		3.49E-04	HR-FB-S2P05	Operator Fails to Feed during S2 POS 5		
		4.18E-01	HR-RS-S2P05	Operator Fails to Restore SCS during S2 POS 5		
		1.00E+00	COMBINATION_62-LP	HEP dependency factor for HR-RS-S2P05,HR-FB-S2P05		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
34	3.89E-09	2.90E-03	%SO	RCS Overdraining due to SCS	0.2	80.8
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		3.49E-04	HR-FB-SOP11-01	Operator Fails to Feed during SO POS 11 w/makeup established		
		5.76E-03	HR-RS-SOP11	Operator Fails to Restore SCS during SO POS 11		
		1.00E+00	COMBINATION_3-LP	HEP dependency factor for HR-RS-SOP11,HR-FB-SOP11-01		
35	3.42E-09	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.2	81.0
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
36	3.33E-09	1.86E-02	%ES	Loss of Essential Service Water	0.2	81.1
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		3.49E-04	HR-FB-ESP05	Operator Fails to Feed during ES POS 5		
		4.18E-01	HR-RS-ESP05	Operator Fails to Restore SCS during ES POS 5		
		1.00E+00	COMBINATION_63-LP	HEP dependency factor for HR-RS-ESP05,HR-FB-ESP05		
37	3.29E-09	5.00E-03	%JL	Unrecoverable LOCA	0.2	81.3
		6.26E-03	BE-RATE-P10	Conversion factor (SD-yr -> Calendar yr) for POS10 duration		
		5.37E-04	HR-FB-JLP10-01	Operator Fails to Feed during JL POS 10 w/makeup established		
		2.08E-03	HR-RS-JLP10	Operator Fails to Restore SCS during JL POS 10		
		9.41E+01	COMBINATION_16-LP	HEP dependency factor for HR-RS-JLP10,HR-FB-JLP10-01		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
38	3.00E-09	3.67E-02	%LPWE	Loss of offsite power of Weather-related for LPSD	0.2	81.5
		6.26E-03	BE-RATE-P10	Conversion factor (SD-yr -> Calendar yr) for POS10 duration		
		2.73E-05	PFHBWQ4-SW2OUAT	4/4 CCF OF PCB BETWEEN UAT & 4.16KV SW01A/1B/1C/1D FAIL TO OPEN		
		4.78E-01	RAC-LXP10-AC-WE	Recovery Offsite Power within 3.0hr at SBO POS10 AC WE		
39	2.93E-09	3.66E-03	%PL	STUCK OPEN OF POSRV	0.2	81.7
		6.67E-01	BE-RATE-OT-02	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 02		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		1.00E-01	VKOPH-S-ECCS	OPERATOR FAILS TO ACTUATE ECCS EXHAUST FAN AH01A/B		
40	2.68E-09	3.66E-03	%PL	STUCK OPEN OF POSRV	0.1	81.8
		6.67E-01	BE-RATE-OT-02	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 02		
		1.10E-06	SXCTKQ4-CT01A/02A/01B/02B	4/4 CCF OF SXCT 1A, 2A, 1B AND 2B TO RUN		
41	2.67E-09	3.50E-02	%SL2	Small LOCA above Reduced Inventory	0.1	82.0
		6.26E-03	BE-RATE-P10	Conversion factor (SD-yr -> Calendar yr) for POS10 duration		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
42	2.58E-09	3.66E-03	%PL	STUCK OPEN OF POSRV	0.1	82.1
		6.67E-01	BE-RATE-OT-02	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 02		
		1.06E-06	SIMPZQ4-CSP1A/B/SCP1A/B	4/4 CCF OF CSP PP01A, PP01B AND SCP PP01A , PP01B TO RUN FOR 1HR		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
43	2.50E-09	1.40E-01	%S1	Loss of SCS (S1)	0.1	82.2
		1.49E-03	BE-RATE-P4B	Conversion factor (SD-yr -> Calendar yr) for POS4B duration		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
44	2.41E-09	1.15E-02	%LPGR	Loss of offsite power of Grid-related for LPSD	0.1	82.4
		3.36E-04	BE-RATE-P03A	Conversion factor (SD-yr -> Calendar yr) for POS03A duration		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		2.50E-02	DGDGR-B-DGB	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01B		
45	2.40E-09	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.1	82.5
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
46	2.36E-09	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.1	82.6
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
47	2.32E-09	2.90E-03	%SO	RCS Overdraining due to SCS	0.1	82.8
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		1.20E-06	PPSO-OS-PPS	CCF OF PPS OPERATING SYSTEM SOFTWARE		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
48	2.25E-09	3.66E-03	%PL	STUCK OPEN OF POSRV	0.1	82.9
		6.67E-01	BE-RATE-OT-02	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 02		
		9.21E-07	SIMPKQ4-CSP1A/B/SCP1A/B	4/4 CCF OF CSP PP01A/PP01B AND SCP PP01A /PP01B FAIL TO RUN		
49	2.19E-09	5.00E-03	%JL	Unrecoverable LOCA	0.1	83.0
		4.01E-03	BE-RATE-P06	Conversion factor (SD-yr -> Calendar yr) for POS6 duration		
		2.72E-03	HR-FB-JLP06-01	Operator Fails to Feed during JL POS 6 w/makeup established		
		2.08E-03	HR-RS-JLP06	Operator Fails to Restore SCS during JL POS 6		
		1.93E+01	COMBINATION_26-LP	HEP dependency factor for HR-RS-JLP06,HR-FB-JLP06-01		
50	2.10E-09	5.00E-03	%JL	Unrecoverable LOCA	0.1	83.1
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		5.37E-04	HR-FB-JLP05-01	Operator Fails to Feed during JL POS 5 w/makeup established		
		6.76E-03	HR-RS-JLP05	Operator Fails to Restore SCS during JL POS 5		
		9.41E+01	COMBINATION_19-LP	HEP dependency factor for HR-RS-JLP05,HR-FB-JLP05-01		
51	2.07E-09	1.40E-01	%S1	Loss of SCS (S1)	0.1	83.2
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
52	2.03E-09	6.39E-02	%LPSW	Loss of offsite power of Switchyard-centered for LPSD	0.1	83.3
		3.36E-04	BE-RATE-P03A	Conversion factor (SD-yr -> Calendar yr) for POS03A duration		
		3.78E-03	DGDGL-A-DGA	DG A FAILS TO LOAD AND RUN DURING 1ST 1HR OF OPERATION		
		2.50E-02	DGDGR-B-DGB	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01B		
53	2.03E-09	6.39E-02	%LPSW	Loss of offsite power of Switchyard-centered for LPSD	0.1	83.5
		3.36E-04	BE-RATE-P03A	Conversion factor (SD-yr -> Calendar yr) for POS03A duration		
		3.78E-03	DGDGL-B-DGB	DG B FAILS TO LOAD AND RUN DURING 1ST 1HR OF OPERATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
54	1.98E-09	1.40E-01	%S1	Loss of SCS (S1)	0.1	83.6
		2.74E-03	BE-RATE-P03B	Conversion factor (SD-yr -> Calendar yr) for POS03B duration		
		3.55E-04	HR-FB-S1P03B-01	Operator Fails to F&B during S1 POS 3B (LTOP re-closed)		
		2.88E-01	HR-RS-S1P03B	Operator Fails to Restore SCS during S1 POS 3B		
		6.06E-04	HR-SG-S1P03B	Operator Fails to Remove Steam during S1 at POS 3B		
		8.34E+01	COMBINATION_10-LP	HEP dependency factor for HR-RS-S1P03B,HR-SG-S1P03B,HR-FB-S1P03B-01		
55	1.96E-09	3.50E-02	%KV	Loss of Class 1E 4.16KV	0.1	83.7
		3.36E-04	BE-RATE-P03A	Conversion factor (SD-yr -> Calendar yr) for POS03A duration		
		2.50E-02	DGDGR-B-DGB	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01B		
		6.66E-03	PFHBC1B-SW01B-A2	PCB SW01B-A2 OF 4.16KV SWGR SW01B FAILS TO CLOSE		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
56	1.91E-09	2.90E-03	%SO	RCS Overdraining due to SCS	0.1	83.8
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		3.49E-04	HR-FB-SOP05-01	Operator Fails to Feed during SO POS 5 w/makeup established		
		2.83E-03	SIMPR1B-SCPP01B	FAILS TO RUN SC PUMP 2 PP01B		
57	1.91E-09	2.90E-03	%SO	RCS Overdraining due to SCS	0.1	83.9
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		3.49E-04	HR-FB-SOP11-01	Operator Fails to Feed during SO POS 11 w/makeup established		
		2.83E-03	SIMPR1A-SCPP01A	FAILS TO RUN SC PUMP PP01A		
58	1.89E-09	3.50E-02	%SL2	Small LOCA above Reduced Inventory	0.1	84.0
		1.49E-03	BE-RATE-P4B	Conversion factor (SD-yr -> Calendar yr) for POS4B duration		
		5.37E-04	HR-FB-JLP04B-02	Operator Fails to Feed during JL POS 4B w/makeup failed		
		7.18E-04	HR-MI-JLP04B	Operator Fails to Isolate and Makeup JL at POS 4B		
		9.41E+01	COMBINATION_49-LP	HEP dependency factor for HR-MI-JLP04B,HR-FB-JLP04B-02		
59	1.88E-09	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.1	84.1
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
60	1.82E-09	3.67E-02	%LPWE	Loss of offsite power of Weather-related for LPSD	0.1	84.2
		6.26E-03	BE-RATE-P10	Conversion factor (SD-yr -> Calendar yr) for POS10 duration		
		1.65E-05	PFHBWQ3-SW2OUATABD	3/4 CCF OF PCB BETWEEN UAT & 4.16KV SW01A/1B/1D FAIL TO OPEN		
		4.78E-01	RAC-LXP10-AC-WE	Recovery Offsite Power within 3.0hr at SBO POS10 AC WE		
61	1.79E-09	6.39E-02	%LPSW	Loss of offsite power of Switchyard-centered for LPSD	0.1	84.3
		3.36E-04	BE-RATE-P03A	Conversion factor (SD-yr -> Calendar yr) for POS03A duration		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		3.33E-03	DGSQA-B-LOADSQ	LOAD SEQUENCER A FAILS TO OPERATE		
62	1.79E-09	6.39E-02	%LPSW	Loss of offsite power of Switchyard-centered for LPSD	0.1	84.4
		3.36E-04	BE-RATE-P03A	Conversion factor (SD-yr -> Calendar yr) for POS03A duration		
		2.50E-02	DGDGR-B-DGB	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01B		
		3.33E-03	DGSQA-A-LOADSQ	LOAD SEQUENCER A FAILS TO OPERATE		
63	1.71E-09	3.50E-02	%SL2	Small LOCA above Reduced Inventory	0.1	84.5
		4.01E-03	BE-RATE-P06	Conversion factor (SD-yr -> Calendar yr) for POS6 duration		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
64	1.68E-09	3.50E-02	%KV	Loss of Class 1E 4.16KV	0.1	84.6
		4.01E-03	BE-RATE-P06	Conversion factor (SD-yr -> Calendar yr) for POS6 duration		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
65	1.68E-09	3.50E-02	%SL2	Small LOCA above Reduced Inventory	0.1	84.7
		4.01E-03	BE-RATE-P06	Conversion factor (SD-yr -> Calendar yr) for POS6 duration		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
66	1.68E-09	5.28E-02	%LPPL	Loss of offsite power of Plant-centered for LPSD	0.1	84.8
		3.36E-04	BE-RATE-P03A	Conversion factor (SD-yr -> Calendar yr) for POS03A duration		
		3.78E-03	DGDGL-A-DGA	DG A FAILS TO LOAD AND RUN DURING 1ST 1HR OF OPERATION		
		2.50E-02	DGDGR-B-DGB	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01B		
67	1.68E-09	5.28E-02	%LPPL	Loss of offsite power of Plant-centered for LPSD	0.1	84.9
		3.36E-04	BE-RATE-P03A	Conversion factor (SD-yr -> Calendar yr) for POS03A duration		
		3.78E-03	DGDGL-B-DGB	DG B FAILS TO LOAD AND RUN DURING 1ST 1HR OF OPERATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
68	1.64E-09	6.39E-02	%LPSW	Loss of offsite power of Switchyard-centered for LPSD	0.1	85.0
		6.26E-03	BE-RATE-P10	Conversion factor (SD-yr -> Calendar yr) for POS10 duration		
		2.73E-05	PFHBWQ4-SW2OUAT	4/4 CCF OF PCB BETWEEN UAT & 4.16KV SW01A/1B/1C/1D FAIL TO OPEN		
		1.50E-01	RAC-LXP10-AC-SW	Recovery Offsite Power within 3.0hr at SBO POS10 AC SW		
69	1.55E-09	6.39E-02	%LPSW	Loss of offsite power of Switchyard-centered for LPSD	0.1	85.0
		3.36E-04	BE-RATE-P03A	Conversion factor (SD-yr -> Calendar yr) for POS03A duration		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		2.89E-03	DGDGS-B-DGB	FAILS TO START OF EMERGENCY DIESEL GENERATOR DG01B		

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Table 19.1-96 (17 of 23)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
70	1.55E-09	6.39E-02	%LPSW	Loss of offsite power of Switchyard-centered for LPSD	0.1	85.1
		3.36E-04	BE-RATE-P03A	Conversion factor (SD-yr -> Calendar yr) for POS03A duration		
		2.50E-02	DGDGR-B-DGB	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01B		
		2.89E-03	DGDGS-A-DGA	FAILS TO START OF EMERGENCY DIESEL GENERATOR DG01A		
71	1.48E-09	3.66E-03	%PL	STUCK OPEN OF POSRV	0.1	85.2
		6.67E-01	BE-RATE-OT-02	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 02		
		6.06E-07	VGAHKQ4-AH01A/1B/2A/2B	4/4 CCF OF ESW PUMP ROOM FAN AH01A/B/02A/B FAIL TO RUN		
72	1.48E-09	3.66E-03	%PL	STUCK OPEN OF POSRV	0.1	85.3
		6.67E-01	BE-RATE-OT-02	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 02		
		6.06E-07	VKHKVQ4-HV13A/13B/14A/14B	4/4 CCF OF RUN FOR CCW PUMP ROOM CUBICLE COOLER HV13A/13B/14A/14B FAIL TO RUN		
73	1.48E-09	3.66E-03	%PL	STUCK OPEN OF POSRV	0.1	85.4
		6.67E-01	BE-RATE-OT-02	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 02		
		6.06E-07	VOHKVQ4-HV32A/32B/31A/31B	4/4 CCF OF RUN FOR CUBICLE COOLER HV32A/32B/31A/31B FAIL TO RUN		

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Table 19.1-96 (18 of 23)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
74	1.48E-09	5.28E-02	%LPPL	Loss of offsite power of Plant-centered for LPSD	0.1	85.5
		3.36E-04	BE-RATE-P03A	Conversion factor (SD-yr -> Calendar yr) for POS03A duration		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		3.33E-03	DGSQA-B-LOADSQ	LOAD SEQUENCER A FAILS TO OPERATE		
75	1.48E-09	5.28E-02	%LPPL	Loss of offsite power of Plant-centered for LPSD	0.1	85.5
		3.36E-04	BE-RATE-P03A	Conversion factor (SD-yr -> Calendar yr) for POS03A duration		
		2.50E-02	DGDGR-B-DGB	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01B		
		3.33E-03	DGSQA-A-LOADSQ	LOAD SEQUENCER A FAILS TO OPERATE		
76	1.46E-09	2.34E-04	%TLOCCW	TOTAL LOSS OF COMPONENT COOLING WATER	0.1	85.6
		3.12E-03	BE-RATE-P14	Conversion factor (SD-yr -> Calendar yr) for POS14 duration		
		2.00E-03	PFLOOP-NO-SI	CONDITIONAL LOOP AFTER INITIATORS WHICH DO NOT INITIATE AN SI SIGNAL		
77	1.46E-09	2.34E-04	%TLOESW	TOTAL LOSS OF ESSENTIAL SERVICE WATER	0.1	85.7
		3.12E-03	BE-RATE-P14	Conversion factor (SD-yr -> Calendar yr) for POS14 duration		
		2.00E-03	PFLOOP-NO-SI	CONDITIONAL LOOP AFTER INITIATORS WHICH DO NOT INITIATE AN SI SIGNAL		
78	1.28E-09	5.28E-02	%LPPL	Loss of offsite power of Plant-centered for LPSD	0.1	85.8
		3.36E-04	BE-RATE-P03A	Conversion factor (SD-yr -> Calendar yr) for POS03A duration		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		2.89E-03	DGDGS-B-DGB	FAILS TO START OF EMERGENCY DIESEL GENERATOR DG01B		

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Table 19.1-96 (19 of 23)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
79	1.28E-09	5.28E-02	%LPPL	Loss of offsite power of Plant-centered for LPSD	0.1	85.8
		3.36E-04	BE-RATE-P03A	Conversion factor (SD-yr -> Calendar yr) for POS03A duration		
		2.50E-02	DGDGR-B-DGB	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01B		
		2.89E-03	DGDGS-A-DGA	FAILS TO START OF EMERGENCY DIESEL GENERATOR DG01A		
80	1.22E-09	6.39E-02	%LPSW	Loss of offsite power of Switchyard-centered for LPSD	0.1	85.9
		3.36E-04	BE-RATE-P03A	Conversion factor (SD-yr -> Calendar yr) for POS03A duration		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		2.28E-03	VDHVL-B-HV12B	FAILS TO RUN EDG ROOM CUBICLE COOLER HV12B FOR 1HR		
81	1.22E-09	6.39E-02	%LPSW	Loss of offsite power of Switchyard-centered for LPSD	0.1	86.0
		3.36E-04	BE-RATE-P03A	Conversion factor (SD-yr -> Calendar yr) for POS03A duration		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		2.28E-03	VDHVL-B-HV13B	FAILS TO RUN EDG ROOM CUBICLE COOLER HV13B FOR 1HR		
82	1.22E-09	6.39E-02	%LPSW	Loss of offsite power of Switchyard-centered for LPSD	0.1	86.0
		3.36E-04	BE-RATE-P03A	Conversion factor (SD-yr -> Calendar yr) for POS03A duration		
		2.50E-02	DGDGR-B-DGB	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01B		
		2.28E-03	VDHVL-A-HV12A	FAILS TO RUN EDG ROOM CUBICLE COOLER HV12A FOR 1HR		
83	1.22E-09	6.39E-02	%LPSW	Loss of offsite power of Switchyard-centered for LPSD	0.1	86.1
		3.36E-04	BE-RATE-P03A	Conversion factor (SD-yr -> Calendar yr) for POS03A duration		
		2.50E-02	DGDGR-B-DGB	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01B		
		2.28E-03	VDHVL-A-HV13A	FAILS TO RUN EDG ROOM CUBICLE COOLER HV13A FOR 1HR		

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Table 19.1-96 (20 of 23)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
84	1.21E-09	3.50E-02	%KV	Loss of Class 1E 4.16KV	0.1	86.2
		3.07E-04	BE-RATE-P12A	Conversion factor (SD-yr -> Calendar yr) for POS12A duration		
		3.49E-04	HR-FB-KVP12A	Operator Fails to Feed during KV POS 12A		
		3.23E-01	HR-RS-KVP12A	Operator Fails to Restore SCS during KV POS 12A		
		1.00E+00	COMBINATION_75-LP	HEP dependency factor for HR-RS-KVP12A,HR-FB-KVP12A		
85	1.21E-09	6.75E-03	%CC	Loss of Component Cooling Water	0.1	86.2
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		3.49E-04	HR-FB-CCP05	Operator Fails to Feed during CC POS 5		
		4.18E-01	HR-RS-CCP05	Operator Fails to Restore SCS during CC POS 5		
		1.00E+00	COMBINATION_87-LP	HEP dependency factor for HR-RS-CCP05,HR-FB-CCP05		
86	1.19E-09	6.39E-02	%LPSW	Loss of offsite power of Switchyard-centered for LPSD	0.1	86.3
		3.36E-04	BE-RATE-P03A	Conversion factor (SD-yr -> Calendar yr) for POS03A duration		
		5.55E-05	DGDGKQ2-DG01AB	2/4 CCF OF EDG 01A/01B FAIL TO RUN		
87	1.17E-09	1.40E-01	%S1	Loss of SCS (S1)	0.1	86.4
		2.74E-03	BE-RATE-P03B	Conversion factor (SD-yr -> Calendar yr) for POS03B duration		
		2.88E-01	HR-RS-S1P03B	Operator Fails to Restore SCS during S1 POS 3B		
		6.06E-04	HR-SG-S1P03B	Operator Fails to Remove Steam during S1 at POS 3B		
		2.10E-04	RCPVWQ4-200/1/2/3	4/4 CCF OF RC PV V200/201/202/203 FAIL TO OPEN		
		8.34E+01	COMBINATION_120-LP	HEP dependency factor for HR-RS-S1P03B,HR-SG-S1P03B		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
88	1.16E-09	3.67E-02	%LPWE	Loss of offsite power of Weather-related for LPSD	0.1	86.4
		3.36E-04	BE-RATE-P03A	Conversion factor (SD-yr -> Calendar yr) for POS03A duration		
		3.78E-03	DGDGL-A-DGA	DG A FAILS TO LOAD AND RUN DURING 1ST 1HR OF OPERATION		
		2.50E-02	DGDGR-B-DGB	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01B		
89	1.16E-09	3.67E-02	%LPWE	Loss of offsite power of Weather-related for LPSD	0.1	86.5
		3.36E-04	BE-RATE-P03A	Conversion factor (SD-yr -> Calendar yr) for POS03A duration		
		3.78E-03	DGDGL-B-DGB	DG B FAILS TO LOAD AND RUN DURING 1ST 1HR OF OPERATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
90	1.15E-09	3.50E-02	%KV	Loss of Class 1E 4.16KV	0.1	86.6
		2.74E-03	BE-RATE-P03B	Conversion factor (SD-yr -> Calendar yr) for POS03B duration		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
91	1.15E-09	3.50E-02	%SL2	Small LOCA above Reduced Inventory	0.1	86.6
		2.74E-03	BE-RATE-P03B	Conversion factor (SD-yr -> Calendar yr) for POS03B duration		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
92	1.14E-09	5.00E-03	%JL	Unrecoverable LOCA	0.1	86.7
		6.26E-03	BE-RATE-P10	Conversion factor (SD-yr -> Calendar yr) for POS10 duration		
		5.37E-04	HR-FB-JLP10-02	Operator Fails to Feed during JL POS 10 w/makeup failed		
		7.18E-04	HR-MI-JLP10	Operator Fails to Isolate and Makeup JL at POS 10		
		9.41E+01	COMBINATION_17-LP	HEP dependency factor for HR-MI-JLP10,HR-FB-JLP10-02		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
93	1.13E-09	3.66E-03	%PL	STUCK OPEN OF POSRV	0.1	86.8
		6.67E-01	BE-RATE-OT-02	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 02		
		4.63E-07	SXMPKQ4-PP01A/B/2A/B	4/4 CCF OF ESW PUMPS PP01A/2A/PP01B/2B FAIL TO RUN		
94	1.12E-09	2.34E-04	%TLOCCW	TOTAL LOSS OF COMPONANT COOLING WATER	0.1	86.8
		2.40E-03	BE-RATE-P02	Conversion factor (SD-yr -> Calendar yr) for POS02 duration		
		2.00E-03	PFLOOP-NO-SI	CONDITIONAL LOOP AFTER INITIATORS WHICH DO NOT INITIATE AN SI SIGNAL		
95	1.12E-09	2.34E-04	%TLOESW	TOTAL LOSS OF ESSENTIAL SERVICE WATER	0.1	86.9
		2.40E-03	BE-RATE-P02	Conversion factor (SD-yr -> Calendar yr) for POS02 duration		
		2.00E-03	PFLOOP-NO-SI	CONDITIONAL LOOP AFTER INITIATORS WHICH DO NOT INITIATE AN SI SIGNAL		
96	1.08E-09	5.28E-02	%LPPL	Loss of offsite power of Plant-centered for LPSD	0.1	86.9
		6.26E-03	BE-RATE-P10	Conversion factor (SD-yr -> Calendar yr) for POS10 duration		
		2.73E-05	PFHBWQ4-SW2OUAT	4/4 CCF OF PCB BETWEEN UAT & 4.16KV SW01A/1B/1C/1D FAIL TO OPEN		
		1.20E-01	RAC-LXP10-AC-PL	Recovery Offsite Power within 3.0hr at SBO POS10 AC PL		
97	1.08E-09	3.50E-02	%SL2	Small LOCA above Reduced Inventory	0.1	87.0
		4.01E-03	BE-RATE-P06	Conversion factor (SD-yr -> Calendar yr) for POS6 duration		
		2.72E-03	HR-FB-JLP06-01	Operator Fails to Feed during JL POS 6 w/makeup established		
		2.83E-03	SIMPR1B-SCPP01B	FAILS TO RUN SC PUMP 2 PP01B		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
98	1.06E-09	2.20E-02	%S2	Loss of SCS (S2)	0.1	87.1
		4.01E-03	BE-RATE-P06	Conversion factor (SD-yr -> Calendar yr) for POS6 duration		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
99	1.04E-09	1.86E-02	%ES	Loss of Essential Service Water	0.1	87.1
		3.36E-04	BE-RATE-P03A	Conversion factor (SD-yr -> Calendar yr) for POS03A duration		
		2.50E-02	DGDGR-B-DGB	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01B		
		6.66E-03	PFHBC1B-SW01B-A2	PCB SW01B-A2 OF 4.16KV SWGR SW01B FAILS TO CLOSE		
100	1.03E-09	3.67E-02	%LPWE	Loss of offsite power of Weather-related for LPSD	0.1	87.2
		3.36E-04	BE-RATE-P03A	Conversion factor (SD-yr -> Calendar yr) for POS03A duration		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		3.33E-03	DGSQA-B-LOADSQ	LOAD SEQUENCER A FAILS TO OPERATE		

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LPSD Internal Events PRA Top 100 CDF Cutsets - Reduced Inventory

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE PRob	Basic Event	Cutset Description	Cutset	Cumulative
1	6.58E-07	2.90E-03	%SO	RCS Overdraining due to SCS	55.1	55.1
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		3.49E-04	HR-FB-SOP05-01	Operator Fails to Feed during SO POS 5 w/makeup established		
		6.76E-03	HR-RS-SOP05	Operator Fails to Restore SCS during SO POS 5		
		1.44E+02	COMBINATION_1-LP	HEP dependency factor for HR-RS-SOP05,HR-FB-SOP05-01		
2	1.21E-07	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	10.2	65.2
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		3.49E-04	HR-FB-SLP05-01	Operator Fails to Feed during SL POS 5 w/makeup established		
		6.76E-03	HR-RS-SLP05	Operator Fails to Restore SCS during SL POS 5		
		1.44E+02	COMBINATION_8-LP	HEP dependency factor for HR-RS-SLP05,HR-FB-SLP05-01		
3	7.31E-08	2.90E-03	%SO	RCS Overdraining due to SCS	6.1	71.4
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		2.72E-03	HR-FB-SOP05-02	Operator Fails to Feed during SO POS 5 w/makeup failed		
		7.18E-04	HR-MI-SOP05	Operator Fails to Isolate and Makeup SO at POS 5		
		1.93E+01	COMBINATION_2-LP	HEP dependency factor for HR-MI-SOP05,HR-FB-SOP05-02		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
4	7.02E-08	2.90E-03	%SO	RCS Overdraining due to SCS	5.9	77.2
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		5.37E-04	HR-FB-SOP11-02	Operator Fails to Feed during SO POS 11 w/makeup failed		
		7.18E-04	HR-MI-SOP11	Operator Fails to Isolate and Makeup SO at POS 11		
		9.41E+01	COMBINATION_4-LP	HEP dependency factor for HR-MI-SOP11,HR-FB-SOP11-02		
5	6.72E-08	1.60E-01	%SL1	Small LOCA at Reduced Inventory	5.6	82.9
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		5.37E-04	HR-FB-JLP05-01	Operator Fails to Feed during JL POS 5 w/makeup established		
		6.76E-03	HR-RS-JLP05	Operator Fails to Restore SCS during JL POS 5		
		9.41E+01	COMBINATION_19-LP	HEP dependency factor for HR-RS-JLP05,HR-FB-JLP05-01		
6	2.51E-08	1.40E-01	%S1	Loss of SCS (S1)	2.1	85.0
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		3.49E-04	HR-FB-S1P05	Operator Fails to Feed during S1 POS 5		
		4.18E-01	HR-RS-S1P05	Operator Fails to Restore SCS during S1 POS 5		
		1.00E+00	COMBINATION_21-LP	HEP dependency factor for HR-RS-S1P05,HR-FB-S1P05		
7	2.36E-08	2.90E-03	%SO	RCS Overdraining due to SCS	2.0	86.9
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Table 19.1-97 (3 of 24)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
8	2.36E-08	2.90E-03	%SO	RCS Overdraining due to SCS	2.0	88.9
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
9	2.32E-08	2.90E-03	%SO	RCS Overdraining due to SCS	1.9	90.9
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
10	1.35E-08	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	1.1	92.0
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		2.72E-03	HR-FB-SLP05-02	Operator Fails to Feed during SL POS 5 w/makeup failed		
		7.18E-04	HR-MI-SLP05	Operator Fails to Isolate and Makeup SL at POS 5		
		1.93E+01	COMBINATION_9-LP	HEP dependency factor for HR-MI-SLP05,HR-FB-SLP05-02		
11	1.02E-08	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.9	92.8
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		5.37E-04	HR-FB-SLP11-02	Operator Fails to Feed during SL POS 11 w/makeup failed		
		7.18E-04	HR-MI-SLP11	Operator Fails to Isolate and Makeup SL at POS 11		
		9.41E+01	COMBINATION_13-LP	HEP dependency factor for HR-MI-SLP11,HR-FB-SLP11-02		

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Table 19.1-97 (4 of 24)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
12	7.43E-09	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.6	93.5
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		2.72E-03	HR-FB-JLP05-02	Operator Fails to Feed during JL POS 5 w/makeup failed		
		7.18E-04	HR-MI-JLP05	Operator Fails to Isolate and Makeup JL at POS 5		
		1.93E+01	COMBINATION_20-LP	HEP dependency factor for HR-MI-JLP05,HR-FB-JLP05-02		
13	6.27E-09	3.50E-02	%KV	Loss of Class 1E 4.16KV	0.5	94.0
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		3.49E-04	HR-FB-KVP05	Operator Fails to Feed during KV POS 5		
		4.18E-01	HR-RS-KVP05	Operator Fails to Restore SCS during KV POS 5		
		1.00E+00	COMBINATION_52-LP	HEP dependency factor for HR-RS-KVP05,HR-FB-KVP05		
14	5.61E-09	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.5	94.5
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		5.37E-04	HR-FB-JLP11-02	Operator Fails to Feed during JL POS 11 w/makeup failed		
		7.18E-04	HR-MI-JLP11	Operator Fails to Isolate and Makeup JL at POS 11		
		9.41E+01	COMBINATION_24-LP	HEP dependency factor for HR-MI-JLP11,HR-FB-JLP11-02		
15	4.35E-09	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.4	94.8
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Table 19.1-97 (5 of 24)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
16	4.28E-09	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.4	95.2
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
17	3.94E-09	2.20E-02	%S2	Loss of SCS (S2)	0.3	95.5
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		3.49E-04	HR-FB-S2P05	Operator Fails to Feed during S2 POS 5		
		4.18E-01	HR-RS-S2P05	Operator Fails to Restore SCS during S2 POS 5		
		1.00E+00	COMBINATION_62-LP	HEP dependency factor for HR-RS-S2P05,HR-FB-S2P05		
18	3.89E-09	2.90E-03	%SO	RCS Overdraining due to SCS	0.3	95.8
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		3.49E-04	HR-FB-SOP11-01	Operator Fails to Feed during SO POS 11 w/makeup established		
		5.76E-03	HR-RS-SOP11	Operator Fails to Restore SCS during SO POS 11		
		1.00E+00	COMBINATION_3-LP	HEP dependency factor for HR-RS-SOP11,HR-FB-SOP11-01		
19	3.42E-09	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.3	96.1
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Table 19.1-97 (6 of 24)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
20	3.33E-09	1.86E-02	%ES	Loss of Essential Service Water	0.3	96.4
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		3.49E-04	HR-FB-ESP05	Operator Fails to Feed during ES POS 5		
		4.18E-01	HR-RS-ESP05	Operator Fails to Restore SCS during ES POS 5		
		1.00E+00	COMBINATION_63-LP	HEP dependency factor for HR-RS-ESP05,HR-FB-ESP05		
21	2.40E-09	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.2	96.6
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
22	2.36E-09	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.2	96.8
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
23	2.32E-09	2.90E-03	%SO	RCS Overdraining due to SCS	0.2	97.0
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		1.20E-06	PPSO-OS-PPS	CCF OF PPS OPERATING SYSTEM SOFTWARE		
24	2.10E-09	5.00E-03	%JL	Unrecoverable LOCA	0.2	97.2
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		5.37E-04	HR-FB-JLP05-01	Operator Fails to Feed during JL POS 5 w/makeup established		
		6.76E-03	HR-RS-JLP05	Operator Fails to Restore SCS during JL POS 5		
		9.41E+01	COMBINATION_19-LP	HEP dependency factor for HR-RS-JLP05,HR-FB-JLP05-01		

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Table 19.1-97 (7 of 24)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
25	2.07E-09	1.40E-01	%S1	Loss of SCS (S1)	0.2	97.3
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
26	1.91E-09	2.90E-03	%SO	RCS Overdraining due to SCS	0.2	97.5
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		3.49E-04	HR-FB-SOP05-01	Operator Fails to Feed during SO POS 5 w/makeup established		
		2.83E-03	SIMPR1B-SCPP01B	FAILS TO RUN SC PUMP 2 PP01B		
27	1.91E-09	2.90E-03	%SO	RCS Overdraining due to SCS	0.2	97.7
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		3.49E-04	HR-FB-SOP11-01	Operator Fails to Feed during SO POS 11 w/makeup established		
		2.83E-03	SIMPR1A-SCPP01A	FAILS TO RUN SC PUMP PP01A		
28	1.88E-09	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.2	97.8
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
29	1.21E-09	6.75E-03	%CC	Loss of Component Cooling Water	0.1	97.9
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		3.49E-04	HR-FB-CCP05	Operator Fails to Feed during CC POS 5		
		4.18E-01	HR-RS-CCP05	Operator Fails to Restore SCS during CC POS 5		
		1.00E+00	COMBINATION_87-LP	HEP dependency factor for HR-RS-CCP05,HR-FB-CCP05		

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Table 19.1-97 (8 of 24)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
30	8.77E-10	1.40E-01	%S1	Loss of SCS (S1)	0.1	98.0
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		4.18E-01	HR-RS-S1P05	Operator Fails to Restore SCS during S1 POS 5		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
31	6.50E-10	2.90E-03	%SO	RCS Overdraining due to SCS	0.1	98.0
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		9.63E-04	CCMVO-B-352	CCW MOV V352 FAILS TO OPEN		
		3.49E-04	HR-FB-SOP05-01	Operator Fails to Feed during SO POS 5 w/makeup established		
32	6.50E-10	2.90E-03	%SO	RCS Overdraining due to SCS	0.1	98.1
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		9.63E-04	CCMVO-A-351	CCW MOV V351 FAILS TO OPEN		
		3.49E-04	HR-FB-SOP11-01	Operator Fails to Feed during SO POS 11 w/makeup established		
33	6.39E-10	2.90E-03	%SO	RCS Overdraining due to SCS	0.1	98.1
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		3.49E-04	HR-FB-SOP05-01	Operator Fails to Feed during SO POS 5 w/makeup established		
		9.47E-04	SIMPS1B-SCPP01B	FAILS TO START SC PUMP 2 PP01B		

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Table 19.1-97 (9 of 24)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
34	6.39E-10	2.90E-03	%SO	RCS Overdraining due to SCS	0.1	98.2
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		3.49E-04	HR-FB-SOP11-01	Operator Fails to Feed during SO POS 11 w/makeup established		
		9.47E-04	SIMPS1A-SCPP01A	FAILS TO START SC PUMP PP01A		
35	6.19E-10	1.40E-01	%S1	Loss of SCS (S1)	0.1	98.3
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		3.49E-04	HR-FB-S1P11	Operator Fails to Feed during S1 POS 11		
		1.31E-02	HR-RS-S1P11	Operator Fails to Restore SCS during S1 POS 11		
		1.00E+00	COMBINATION_30-LP	HEP dependency factor for HR-RS-S1P11,HR-FB-S1P11		
36	5.63E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.0	98.3
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		3.49E-04	HR-FB-SLP11-01	Operator Fails to Feed during SL POS 11 w/makeup established		
		5.76E-03	HR-RS-SLP11	Operator Fails to Restore SCS during SL POS 11		
		1.00E+00	COMBINATION_12-LP	HEP dependency factor for HR-RS-SLP11,HR-FB-SLP11-01		
37	5.17E-10	3.50E-02	%KV	Loss of Class 1E 4.16KV	0.0	98.3
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
38	4.28E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.0	98.4
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.20E-06	PPSO-OS-PPS	CCF OF PPS OPERATING SYSTEM SOFTWARE		

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Table 19.1-97 (10 of 24)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
39	4.11E-10	3.67E-02	%LPWE	Loss of offsite power of Weather-related for LPSPD	0.0	98.4
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		2.73E-05	PFHBWQ4-SW2OUAT	4/4 CCF OF PCB BETWEEN UAT & 4.16KV SW01A/1B/1C/1D FAIL TO OPEN		
		4.25E-01	RAC-LXP11-AC-WE	Recovery Offsite Power within 4.0hr at SBO POS11 AC WE		
40	3.51E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.0	98.4
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		3.49E-04	HR-FB-SLP05-01	Operator Fails to Feed during SL POS 5 w/makeup established		
		2.83E-03	SIMPR1B-SCPP01B	FAILS TO RUN SC PUMP 2 PP01B		
41	3.25E-10	2.20E-02	%S2	Loss of SCS (S2)	0.0	98.5
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
42	3.11E-10	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.0	98.5
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		3.49E-04	HR-FB-JLP11-01	Operator Fails to Feed during JL POS 11 w/makeup established		
		5.76E-03	HR-RS-JLP11	Operator Fails to Restore SCS during JL POS 11		
		1.00E+00	COMBINATION_23-LP	HEP dependency factor for HR-RS-JLP11,HR-FB-JLP11-01		
43	2.98E-10	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.0	98.5
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		5.37E-04	HR-FB-JLP05-01	Operator Fails to Feed during JL POS 5 w/makeup established		
		2.83E-03	SIMPR1B-SCPP01B	FAILS TO RUN SC PUMP 2 PP01B		

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Table 19.1-97 (11 of 24)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
44	2.86E-10	6.39E-02	%LPSW	Loss of offsite power of Switchyard-centered for LPSD	0.0	98.5
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		3.49E-04	HR-FB-LPP05	Operator Fails to Feed during LP POS 5		
		4.18E-01	HR-RS-LPP05	Operator Fails to Restore SCS during LP POS 5		
		1.00E+00	COMBINATION_38-LP	HEP dependency factor for HR-RS-LPP05,HR-FB-LPP05		
45	2.76E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.0	98.6
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		3.49E-04	HR-FB-SLP11-01	Operator Fails to Feed during SL POS 11 w/makeup established		
		2.83E-03	SIMPR1A-SCPP01A	FAILS TO RUN SC PUMP PP01A		
46	2.75E-10	1.86E-02	%ES	Loss of Essential Service Water	0.0	98.6
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
47	2.45E-10	3.67E-02	%LPWE	Loss of offsite power of Weather-related for LPSD	0.0	98.6
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.57E-01	DATGR-S-AACTG	FAILS TO RUN AAC GAS TURBINE GENERATOR		
		5.95E-05	DGDGKQ4-DG01ABCD	4/4 CCF OF EDG 01A/01B/01C/01D FAIL TO RUN		
		5.83E-01	RAC-LXP05-AC-WE	Recover Offsite Power within 1.8hr at SBO POS5 WE		

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Table 19.1-97 (12 of 24)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
48	2.36E-10	5.28E-02	%LPPL	Loss of offsite power of Plant-centered for LPSD	0.0	98.6
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		3.49E-04	HR-FB-LPP05	Operator Fails to Feed during LP POS 5		
		4.18E-01	HR-RS-LPP05	Operator Fails to Restore SCS during LP POS 5		
		1.00E+00	COMBINATION_38-LP	HEP dependency factor for HR-RS-LPP05,HR-FB-LPP05		
49	2.36E-10	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.0	98.7
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.20E-06	PPSO-OS-PPS	CCF OF PPS OPERATING SYSTEM SOFTWARE		
50	2.32E-10	5.00E-03	%JL	Unrecoverable LOCA	0.0	98.7
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		2.72E-03	HR-FB-JLP05-02	Operator Fails to Feed during JL POS 5 w/makeup failed		
		7.18E-04	HR-MI-JLP05	Operator Fails to Isolate and Makeup JL at POS 5		
		1.93E+01	COMBINATION_20-LP	HEP dependency factor for HR-MI-JLP05,HR-FB-JLP05-02		
51	2.19E-10	3.50E-02	%KV	Loss of Class 1E 4.16KV	0.0	98.7
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		4.18E-01	HR-RS-KVP05	Operator Fails to Restore SCS during KV POS 5		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Table 19.1-97 (13 of 24)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
52	2.07E-10	1.40E-01	%S1	Loss of SCS (S1)	0.0	98.7
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.20E-06	PPSO-OS-PPS	CCF OF PPS OPERATING SYSTEM SOFTWARE		
53	1.94E-10	6.39E-02	%LPSW	Loss of offsite power of Switchyard-centered for LPSD	0.0	98.7
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		2.73E-05	PFHBWQ4-SW2OUAT	4/4 CCF OF PCB BETWEEN UAT & 4.16KV SW01A/1B/1C/1D FAIL TO OPEN		
		1.15E-01	RAC-LXP11-AC-SW	Recovery Offsite Power within 4.0hr at SBO POS11 AC SW		
54	1.91E-10	6.39E-02	%LPSW	Loss of offsite power of Switchyard-centered for LPSD	0.0	98.7
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.57E-01	DATGR-S-AACTG	FAILS TO RUN AAC GAS TURBINE GENERATOR		
		5.95E-05	DGDGKQ4-DG01ABCD	4/4 CCF OF EDG 01A/01B/01C/01D FAIL TO RUN		
		2.61E-01	RAC-LXP05-AC-SW	Recover Offsite Power within 1.8hr at SBO POS5 SW		
55	1.75E-10	5.00E-03	%JL	Unrecoverable LOCA	0.0	98.8
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		5.37E-04	HR-FB-JLP11-02	Operator Fails to Feed during JL POS 11 w/makeup failed		
		7.18E-04	HR-MI-JLP11	Operator Fails to Isolate and Makeup JL at POS 11		
		9.41E+01	COMBINATION_24-LP	HEP dependency factor for HR-MI-JLP11,HR-FB-JLP11-02		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
56	1.64E-10	3.67E-02	%LPWE	Loss of offsite power of Weather-related for LPSP	0.0	98.8
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		3.49E-04	HR-FB-LPP05	Operator Fails to Feed during LP POS 5		
		4.18E-01	HR-RS-LPP05	Operator Fails to Restore SCS during LP POS 5		
		1.00E+00	COMBINATION_38-LP	HEP dependency factor for HR-RS-LPP05,HR-FB-LPP05		
57	1.61E-10	3.67E-02	%LPWE	Loss of offsite power of Weather-related for LPSP	0.0	98.8
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.57E-01	DATGR-S-AACTG	FAILS TO RUN AAC GAS TURBINE GENERATOR		
		3.92E-05	DGDGKQ3-DG01ABC	3/4 CCF OF EDG 01A/01B/01C FAIL TO RUN		
		5.83E-01	RAC-LXP05-AC-WE	Recover Offsite Power within 1.8hr at SBO POS5 WE		
58	1.55E-10	3.50E-02	%KV	Loss of Class 1E 4.16KV	0.0	98.8
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		3.49E-04	HR-FB-KVP11	Operator Fails to Feed during KV POS 11		
		1.31E-02	HR-RS-KVP11	Operator Fails to Restore SCS during KV POS 11		
		1.00E+00	COMBINATION_58-LP	HEP dependency factor for HR-RS-KVP11,HR-FB-KVP11		
59	1.52E-10	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.0	98.8
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		3.49E-04	HR-FB-JLP11-01	Operator Fails to Feed during JL POS 11 w/makeup established		
		2.83E-03	SIMPR1A-SCPP01A	FAILS TO RUN SC PUMP PP01A		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
60	1.40E-10	3.67E-02	%LPWE	Loss of offsite power of Weather-related for LPSD	0.0	98.8
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		1.57E-01	DATGR-S-AACTG	FAILS TO RUN AAC GAS TURBINE GENERATOR		
		5.95E-05	DGDGKQ4-DG01ABCD	4/4 CCF OF EDG 01A/01B/01C/01D FAIL TO RUN		
		4.25E-01	RAC-LXP11-AC-WE	Recovery Offsite Power within 4.0hr at SBO POS11 AC WE		
61	1.39E-10	6.39E-02	%LPSW	Loss of offsite power of Switchyard-centered for LPSD	0.0	98.8
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		2.50E-02	DGDGR-B-DGB	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01B		
		2.83E-03	SIMPR2A-PP02C	FAILS TO RUN SI PUMP PP02C		
62	1.38E-10	2.20E-02	%S2	Loss of SCS (S2)	0.0	98.8
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		4.18E-01	HR-RS-S2P05	Operator Fails to Restore SCS during S2 POS 5		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
63	1.28E-10	5.28E-02	%LPPL	Loss of offsite power of Plant-centered for LPSD	0.0	98.9
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.57E-01	DATGR-S-AACTG	FAILS TO RUN AAC GAS TURBINE GENERATOR		
		5.95E-05	DGDGKQ4-DG01ABCD	4/4 CCF OF EDG 01A/01B/01C/01D FAIL TO RUN		
		2.12E-01	RAC-LXP05-AC-PL	Recover Offsite Power within 1.8hr at SBO POS5 PL		

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Table 19.1-97 (16 of 24)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE prob	Basic Event	Cutset Description	Cutset	Cumulative
64	1.26E-10	6.39E-02	%LPSW	Loss of offsite power of Switchyard-centered for LPSD	0.0	98.9
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.57E-01	DATGR-S-AACTG	FAILS TO RUN AAC GAS TURBINE GENERATOR		
		3.92E-05	DGDGKQ3-DG01ABC	3/4 CCF OF EDG 01A/01B/01C FAIL TO RUN		
		2.61E-01	RAC-LXP05-AC-SW	Recover Offsite Power within 1.8hr at SBO POS5 SW		
65	1.25E-10	5.28E-02	%LPPL	Loss of offsite power of Plant-centered for LPSD	0.0	98.9
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		2.73E-05	PFHBWQ4-SW2OUAT	4/4 CCF OF PCB BETWEEN UAT & 4.16KV SW01A/1B/1C/1D FAIL TO OPEN		
		9.00E-02	RAC-LXP11-AC-PL	Recovery Offsite Power within 4.0hr at SBO POS11 AC PL		
66	1.20E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.0	98.9
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		9.63E-04	CCMVO-B-352	CCW MOV V352 FAILS TO OPEN		
		3.49E-04	HR-FB-SLP05-01	Operator Fails to Feed during SL POS 5 w/makeup established		
67	1.18E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.0	98.9
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		3.49E-04	HR-FB-SLP05-01	Operator Fails to Feed during SL POS 5 w/makeup established		
		9.47E-04	SIMPS1B-SCPP01B	FAILS TO START SC PUMP 2 PP01B		

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Table 19.1-97 (17 of 24)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
68	1.16E-10	1.86E-02	%ES	Loss of Essential Service Water	0.0	98.9
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		4.18E-01	HR-RS-ESP05	Operator Fails to Restore SCS during ES POS 5		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
69	1.15E-10	5.28E-02	%LPPL	Loss of offsite power of Plant-centered for LPSD	0.0	98.9
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		2.50E-02	DGDGR-B-DGB	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01B		
		2.83E-03	SIMPR2A-PP02C	FAILS TO RUN SI PUMP PP02C		
70	1.12E-10	2.90E-03	%SO	RCS Overdraining due to SCS	0.0	98.9
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		2.50E-02	DGDGR-B-DGB	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01B		
		3.49E-04	HR-FB-SOP05-01	Operator Fails to Feed during SO POS 5 w/makeup established		
		6.66E-03	PFHBC1B-SW01B-A2	PCB SW01B-A2 OF 4.16KV SWGR SW01B FAILS TO CLOSE		
71	1.02E-10	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.0	98.9
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		9.63E-04	CCMVO-B-352	CCW MOV V352 FAILS TO OPEN		
		5.37E-04	HR-FB-JLP05-01	Operator Fails to Feed during JL POS 5 w/makeup established		

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Table 19.1-97 (18 of 24)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
72	1.00E-10	2.34E-04	%TC	Total Loss of Component Cooling Water	0.0	98.9
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		3.49E-04	HR-FB-TCP05	Operator Fails to Feed during TC POS 5		
73	1.00E-10	2.34E-04	%TS	Total Loss of Essential Service Water	0.0	98.9
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		3.49E-04	HR-FB-TSP05	Operator Fails to Feed during TS POS 5		
74	1.00E-10	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.0	99.0
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		5.37E-04	HR-FB-JLP05-01	Operator Fails to Feed during JL POS 5 w/makeup established		
		9.47E-04	SIMPS1B-SCPP01B	FAILS TO START SC PUMP 2 PP01B		
75	9.96E-11	6.75E-03	%CC	Loss of Component Cooling Water	0.0	99.0
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
76	9.73E-11	2.20E-02	%S2	Loss of SCS (S2)	0.0	99.0
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		3.49E-04	HR-FB-S2P11	Operator Fails to Feed during S2 POS 11		
		1.31E-02	HR-RS-S2P11	Operator Fails to Restore SCS during S2 POS 11		
		1.00E+00	COMBINATION_66-LP	HEP dependency factor for HR-RS-S2P11,HR-FB-S2P11		

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Table 19.1-97 (19 of 24)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
77	9.41E-11	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.0	99.0
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		9.63E-04	CCMVO-A-351	CCW MOV V351 FAILS TO OPEN		
		3.49E-04	HR-FB-SLP11-01	Operator Fails to Feed during SL POS 11 w/makeup established		
78	9.25E-11	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.0	99.0
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		3.49E-04	HR-FB-SLP11-01	Operator Fails to Feed during SL POS 11 w/makeup established		
		9.47E-04	SIMPS1A-SCPP01A	FAILS TO START SC PUMP PP01A		
79	9.04E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.0	99.0
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		4.68E-08	SICVWQ4-V217/227/237/247	4/4 CCF OF SI DVI CHECK VALVE V217/227/237/247 TO OPEN		
80	9.04E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.0	99.0
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		4.68E-08	SICVWQ4-V217/227/237/247	4/4 CCF OF SI DVI CHECK VALVE V217/227/237/247 TO OPEN		

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Table 19.1-97 (20 of 24)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
81	8.44E-11	5.28E-02	%LPPL	Loss of offsite power of Plant-centered for LPSD	0.0	99.0
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.57E-01	DATGR-S-AACTG	FAILS TO RUN AAC GAS TURBINE GENERATOR		
		3.92E-05	DGDGKQ3-DG01ABC	3/4 CCF OF EDG 01A/01B/01C FAIL TO RUN		
		2.12E-01	RAC-LXP05-AC-PL	Recover Offsite Power within 1.8hr at SBO POS5 PL		
82	8.30E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.0	99.0
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		3.49E-04	HR-FB-SOP05-01	Operator Fails to Feed during SO POS 5 w/makeup established		
		1.23E-04	SIMPL1B-SCPP01B	FAILS TO RUN FOR 1HR SC PUMP PP01B		
83	8.30E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.0	99.0
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		3.49E-04	HR-FB-SOP11-01	Operator Fails to Feed during SO POS 11 w/makeup established		
		1.23E-04	SIMPL1A-SCPP01A	FAILS TO RUN FOR 1HR SC PUMP PP01A		
84	8.22E-11	1.86E-02	%ES	Loss of Essential Service Water	0.0	99.0
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		3.49E-04	HR-FB-ESP11	Operator Fails to Feed during ES POS 11		
		1.31E-02	HR-RS-ESP11	Operator Fails to Restore SCS during ES POS 11		
		1.00E+00	COMBINATION_71-LP	HEP dependency factor for HR-RS-ESP11,HR-FB-ESP11		

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Table 19.1-97 (21 of 24)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
85	7.96E-11	3.67E-02	%LPWE	Loss of offsite power of Weather-related for LPSD	0.0	99.0
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		2.50E-02	DGDGR-B-DGB	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01B		
		2.83E-03	SIMPR2A-PP02C	FAILS TO RUN SI PUMP PP02C		
86	7.88E-11	2.34E-04	%TC	Total Loss of Component Cooling Water	0.0	99.0
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		3.49E-04	HR-FB-TCP11	Operator Fails to Feed during TC POS 11		
87	7.88E-11	2.34E-04	%TS	Total Loss of Essential Service Water	0.0	99.1
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		3.49E-04	HR-FB-TSP11	Operator Fails to Feed during TS POS 11		
88	7.82E-11	3.67E-02	%LPWE	Loss of offsite power of Weather-related for LPSD	0.0	99.1
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		5.00E-02	DATGM-S-AACTG	AAC DG UNAVAILABLE DUE TO T&M		
		5.95E-05	DGDGKQ4-DG01ABCD	4/4 CCF OF EDG 01A/01B/01C/01D FAIL TO RUN		
		5.83E-01	RAC-LXP05-AC-WE	Recover Offsite Power within 1.8hr at SBO POS5 WE		
89	7.50E-11	5.00E-03	%JL	Unrecoverable LOCA	0.0	99.1
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Table 19.1-97 (22 of 24)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
90	7.38E-11	5.00E-03	%JL	Unrecoverable LOCA	0.0	99.1
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
91	6.61E-11	6.39E-02	%LPSW	Loss of offsite power of Switchyard-centered for LPSD	0.0	99.1
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		1.57E-01	DATGR-S-AACTG	FAILS TO RUN AAC GAS TURBINE GENERATOR		
		5.95E-05	DGDGKQ4-DG01ABCD	4/4 CCF OF EDG 01A/01B/01C/01D FAIL TO RUN		
		1.15E-01	RAC-LXP11-AC-SW	Recovery Offsite Power within 4.0hr at SBO POS11 AC SW		
92	6.42E-11	3.67E-02	%LPWE	Loss of offsite power of Weather-related for LPSD	0.0	99.1
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.57E-01	DATGR-S-AACTG	FAILS TO RUN AAC GAS TURBINE GENERATOR		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		2.50E-02	DGDGR-B-DGB	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01B		
		2.50E-02	DGDGR-C-DGC	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01C		
		5.83E-01	RAC-LXP05-AC-WE	Recover Offsite Power within 1.8hr at SBO POS5 WE		
93	6.39E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.0	99.1
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		3.49E-04	HR-FB-SOP05-01	Operator Fails to Feed during SO POS 5 w/makeup established		
		9.48E-05	PELXY-B-LX01B-P	FAILURE OF PRIMARY LOOP CONTROLLER LX01B		

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Table 19.1-97 (23 of 24)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
94	6.39E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.0	99.1
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		3.49E-04	HR-FB-SOP05-01	Operator Fails to Feed during SO POS 5 w/makeup established		
		9.48E-05	PELXY-B-LX04B-P	FAILURE OF PRIMARY LOOP CONTROLLER LX04B		
95	6.39E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.0	99.1
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		3.49E-04	HR-FB-SOP11-01	Operator Fails to Feed during SO POS 11 w/makeup established		
		9.48E-05	PELXY-A-LX01A-P	FAILURE OF PRIMARY LOOP CONTROLLER LX01A		
96	6.39E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.0	99.1
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		3.49E-04	HR-FB-SOP11-01	Operator Fails to Feed during SO POS 11 w/makeup established		
		9.48E-05	PELXY-A-LX04A-P	FAILURE OF PRIMARY LOOP CONTROLLER LX04A		
97	6.22E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.0	99.1
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		9.22E-05	CCVVT-B-V1512	CCW HX. HE01B OUTLET MANUAL VALVE V1512 TRANSFER CLOSED		
		3.49E-04	HR-FB-SOP05-01	Operator Fails to Feed during SO POS 5 w/makeup established		

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Table 19.1-97 (24 of 24)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
98	6.22E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.0	99.1
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		3.49E-04	HR-FB-SOP05-01	Operator Fails to Feed during SO POS 5 w/makeup established		
		9.22E-05	SIVVT2B-V107	SCS PUMP 2 SUCTION MANUAL VALVE V107 TRANSFER CLOSED		
99	6.22E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.0	99.1
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		3.49E-04	HR-FB-SOP05-01	Operator Fails to Feed during SO POS 5 w/makeup established		
		9.22E-05	SIVVT2B-V579	SC PUMP 2 DISCH. PATH MANUAL VALVE V579 FAILS TO REMAIN OPEN		
100	6.22E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.0	99.1
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		9.22E-05	CCVVT-A-V1511	CCW HX. HE01A OUTLET MANUAL VALVE V1511 TRANSFER CLOSED		
		3.49E-04	HR-FB-SOP11-01	Operator Fails to Feed during SO POS 11 w/makeup established		

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Table 19.1-109 (1 of 21)

LPSD Internal Flooding PRA CDF Top 100 Cutsets – All POS

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob.	Basic Event	Cutset Description	Cutset	Cumulative
1	1.07E-08	2.08E-05	%IE-055-22A-IW-S-LP	UNISOLABLE IW BREAK IN ROOM 055-22A DURING LPSP	13.3	13.3
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR→CALENDAR YR) FOR POS5 DURATION		
		4.18E-01	HR-RS-S2P05	OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 5		
2	3.10E-09	1.98E-05	%IE-078-15D-AF-X-LP	MAJOR AF BREAK IN ROOM 078-15D DURING LPSP	3.9	17.2
		1.00E+00	AFOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A AF BREAK WITH LESS THAN 10 MUNITE AVAILABLE		
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
3	2.67E-09	1.71E-05	%IE-137-13B-FP-X-LP	MAJOR FP BREAK IN ROOM 137-13B DURING LPSP	3.3	20.5
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
4	1.36E-09	3.49E-04	%IE-078-19B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19B DURING LPSP	1.7	22.2
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		2.50E-02	DGDGR-D-DGD	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01D		
5	1.34E-09	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSP	1.7	23.9
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		2.50E-02	DGDGR-D-DGD	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01D		

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Table 19.1-109 (2 of 21)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
6	1.12E-09	3.49E-04	%IE-078-19B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19B DURING LPSD	1.4	25.3
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		2.06E-02	WOOPH-B-1/2B	OPERATOR'S FAILURE TO OPERATE ECW PUMPS 1/2B		
7	1.10E-09	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	1.4	26.7
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		2.06E-02	WOOPH-B-1/2B	OPERATOR'S FAILURE TO OPERATE ECW PUMPS 1/2B		
8	8.30E-10	2.08E-05	%IE-055-22A-IW-S-LP	UNISOLABLE IW BREAK IN ROOM 055-22A DURING LPSD	1.0	27.7
		2.74E-03	BE-RATE-P03B	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS03B DURATION		
		2.88E-01	HR-RS-S2P03B	OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 3B		
		6.06E-04	HR-SG-S2P03B	OPERATOR'S FAILURE TO REMOVE STEAM DURING S2 AT POS 3B		
		8.34E+01	COMBINATION_150-LP	HEP DEPENDENCY FACTOR FOR HR-RS-S2P03B, HR-SG-S2P03B		
9	8.25E-10	1.98E-05	%IE-078-15D-AF-X-LP	MAJOR AF BREAK IN ROOM 078-15D DURING LPSD	1.0	28.7
		1.00E+00	AFOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A AF BREAK WITH LESS THAN 10 MUNITE AVAILABLE		
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		6.66E-03	PFHBO1A-SW01A-H2	FAILS TO OPEN OF PCB SW01A-H2 OF 4.16kV SWGR SW01A FROM UAT		
10	8.22E-10	2.05E-07	%IE-055-21B-SI-M-LP	MODERATE SI BREAK IN ROOM 055-21B DURING LPSD	1.0	29.8
		4.01E-03	BE-RATE-P06	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS6 DURATION		

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Table 19.1-109 (3 of 21)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
11	7.47E-10	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.9	30.7
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		3.49E-04	HR-FB-S2P10	OPERATOR'S FAILURE TO FEED DURING S2 POS 10		
12	7.13E-10	1.71E-05	%IE-137-13B-FP-X-LP	MAJOR FP BREAK IN ROOM 137-13B DURING LPSD	0.9	31.6
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		6.66E-03	PFHBO1A-SW01A-H2	FAILS TO OPEN OF PCB SW01A-H2 OF 4.16kV SWGR SW01A FROM UAT		
13	7.10E-10	3.49E-04	%IE-078-19B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19B DURING LPSD	0.9	32.5
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		1.30E-02	WOCHS2B-CH02B	FAILS TO START ECW CHILLER CH02B		
14	6.95E-10	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.9	33.3
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		1.30E-02	WOCHS2B-CH02B	FAILS TO START ECW CHILLER CH02B		
15	6.68E-10	1.71E-04	%IE-078-01D-FP-X-LP	MAJOR FP BREAK IN ROOM 078-01D DURING LPSD	0.8	34.2
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		2.50E-02	DGDGR-B-DGB	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01B		

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Table 19.1-109 (4 of 21)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
16	5.24E-10	1.34E-04	%IE-078-19B-FP-M-LP	MODERATE FP BREAK IN ROOM 078-19B DURING LPSD	0.7	34.8
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		2.50E-02	DGDGR-D-DGD	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01D		
17	5.17E-10	3.49E-04	%IE-078-19B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19B DURING LPSD	0.6	35.5
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
18	4.99E-10	3.35E-04	%IE-100-20A-FP-X-LP	MAJOR FP BREAK IN ROOM 100-20A DURING LPSD	0.6	36.1
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		8.00E-03	FPOPH-2-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK BETWEEN 20 AND 40 MINUTES AVAILABLE		
		3.49E-04	HR-FB-S2P05	OPERATOR'S FAILURE TO FEED DURING S2 POS 5		
		4.18E-01	HR-RS-S2P05	OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 5		
		1.04E+03	COMBINATION_354-LP	HEP DEPENDENCY FACTOR FOR HR-RS-S2P05, FPOPH-2-ISO-FL, HR-FB-S2P05		
19	4.78E-10	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.6	36.7
		4.01E-03	BE-RATE-P06	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS6 DURATION		
		3.49E-04	HR-FB-S2P06	OPERATOR'S FAILURE TO FEED DURING S2 POS 6		

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Table 19.1-109 (5 of 21)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
20	4.69E-10	1.98E-05	%IE-078-15D-AF-X-LP	MAJOR AF BREAK IN ROOM 078-15D DURING LPSD	0.6	37.3
		1.00E+00	AFOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A AF BREAK WITH LESS THAN 10 MUNITE AVAILABLE		
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		3.78E-03	DGDGL-A-DGA	DG A FAILS TO LOAD AND RUN DURING 1ST 1HR OF OPERATION		
21	4.31E-10	1.34E-04	%IE-078-19B-FP-M-LP	MODERATE FP BREAK IN ROOM 078-19B DURING LPSD	0.5	37.8
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		2.06E-02	WOOPH-B-1/2B	OPERATOR'S FAILURE TO OPERATE ECW PUMPS 1/2B		
22	4.28E-10	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.5	38.3
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		8.00E-03	FPOPH-2-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK BETWEEN 20 AND 40 MINUTES AVAILABLE		
23	4.16E-10	2.66E-06	%IE-137-29B-FP-M-LP	MODERATE FP BREAK IN ROOM 137-29B DURING LPSD	0.5	38.9
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
24	4.13E-10	1.98E-05	%IE-078-15D-AF-X-LP	MAJOR AF BREAK IN ROOM 078-15D DURING LPSD	0.5	39.4
		1.00E+00	AFOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A AF BREAK WITH LESS THAN 10 MUNITE AVAILABLE		
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		3.33E-03	DGSQA-A-LOADSQ	LOAD SEUNCER A FAIL TO OPERATE		

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Table 19.1-109 (6 of 21)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
25	4.05E-10	1.71E-05	%IE-137-13B-FP-X-LP	MAJOR FP BREAK IN ROOM 137-13B DURING LPSD	0.5	39.9
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		3.78E-03	DGDGL-A-DGA	DG A FAILS TO LOAD AND RUN DURING 1ST 1HR OF OPERATION		
26	3.71E-10	2.49E-04	%IE-078-31A-FP-X-LP	MAJOR FP BREAK IN ROOM 078-31A DURING LPSD	0.5	40.3
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		8.00E-03	FPOPH-2-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK BETWEEN 20 AND 40 MINUTES AVAILABLE		
		2.93E-03	FPOPH-3DEP-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 72 MINUTES AVAILABLE		
		3.49E-04	HR-FB-S2P05	OPERATOR'S FAILURE TO FEED DURING S2 POS 5		
		4.18E-01	HR-RS-S2P05	OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 5		
		3.54E+05	COMBINATION_339-LP	HEP DEPENDENCY FACTOR FOR HR-RS-S2P05, FPOPH-2-ISO-FL, FPOPH-3DEP-ISO-FL, HR-FB-S2P05		
27	3.64E-10	3.49E-04	%IE-078-19B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19B DURING LPSD	0.5	40.8
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		6.66E-03	PFHBO2B-SW01D-G2	4.16kVCLASS 1E 4.16kV SWITCHGEAR PCB SW01D-G2 (UAT) FAILS TO OPEN		
28	3.64E-10	3.49E-04	%IE-078-19B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19B DURING LPSD	0.5	41.2
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-D-DGD	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01D		
		6.66E-03	PFHBO1A-SW01A-H2	FAILS TO OPEN OF PCB SW01A-H2 OF 4.16kV SWGR SW01A FROM UAT		

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Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
29	3.58E-10	1.98E-05	%IE-078-15D-AF-X-LP	MAJOR AF BREAK IN ROOM 078-15D DURING LPSD	0.4	41.7
		1.00E+00	AFOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A AF BREAK WITH LESS THAN 10 MUNITE AVAILABLE		
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.89E-03	DGDGS-A-DGA	FAILS TO START OF EMERGENCY DIESEL GENERATOR DG01A		
30	3.56E-10	1.71E-05	%IE-137-13B-FP-X-LP	MAJOR FP BREAK IN ROOM 137-13B DURING LPSD	0.4	42.1
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		3.33E-03	DGSQA-A-LOADSQ	LOAD SEQUENCER A FAIL TO OPERATE		
31	3.56E-10	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.4	42.6
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		6.66E-03	PFHBO2B-SW01D-G2	4.16kVCLASS 1E 4.16kV SWITCHGEAR PCB SW01D-G2 (UAT) FAILS TO OPEN		
32	3.56E-10	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.4	43.0
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-D-DGD	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01D		
		6.66E-03	PFHBO1A-SW01A-H2	FAILS TO OPEN OF PCB SW01A-H2 OF 4.16kV SWGR SW01A FROM UAT		
33	3.09E-10	1.71E-05	%IE-137-13B-FP-X-LP	MAJOR FP BREAK IN ROOM 137-13B DURING LPSD	0.4	43.4
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.89E-03	DGDGS-A-DGA	FAILS TO START OF EMERGENCY DIESEL GENERATOR DG01A		

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Table 19.1-109 (8 of 21)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
34	3.05E-10	2.05E-07	%IE-055-21B-SI-M-LP	MODERATE SI BREAK IN ROOM 055-21B DURING LPSD	0.4	43.8
		1.49E-03	BE-RATE-P4B	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS4B DURATION		
35	3.00E-10	3.49E-04	%IE-078-19B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19B DURING LPSD	0.4	44.2
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		6.66E-03	PFHBO1A-SW01A-H2	FAILS TO OPEN OF PCB SW01A-H2 OF 4.16kV SWGR SW01A FROM UAT		
		2.06E-02	WOOPH-B-1/2B	OPERATOR'S FAILURE TO OPERATE ECW PUMPS 1/2B		
36	2.94E-10	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.4	44.5
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		6.66E-03	PFHBO1A-SW01A-H2	FAILS TO OPEN OF PCB SW01A-H2 OF 4.16kV SWGR SW01A FROM UAT		
		2.06E-02	WOOPH-B-1/2B	OPERATOR'S FAILURE TO OPERATE ECW PUMPS 1/2B		
37	2.90E-10	2.08E-05	%IE-055-22A-IW-S-LP	UNISOLABLE IW BREAK IN ROOM 055-22A DURING LPSD	0.4	44.9
		3.36E-04	BE-RATE-P03A	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS03A DURATION		
		8.20E-01	HR-RS-S2P03A	OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 3A		
		6.06E-04	HR-SG-S2P03A	OPERATOR'S FAILURE TO REMOVE STEAM DURING S2 AT POS 3A		
		8.34E+01	COMBINATION_175-LP	HEP DEPENDENCY FACTOR FOR HR-RS-S2P03A, HR-SG-S2P03A		
38	2.82E-10	1.98E-05	%IE-078-15D-AF-X-LP	MAJOR AF BREAK IN ROOM 078-15D DURING LPSD	0.4	45.2
		1.00E+00	AFOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A AF BREAK WITH LESS THAN 10 MUNITE AVAILABLE		
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.28E-03	VDHVL-A-HV12A	EDG ROOM CUBICLE COOLER HV12A FAILS TO RUN FOR 1HR		

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Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
39	2.82E-10	1.98E-05	%IE-078-15D-AF-X-LP	MAJOR AF BREAK IN ROOM 078-15D DURING LPSD	0.4	45.6
		1.00E+00	AFOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A AF BREAK WITH LESS THAN 10 MUNITE AVAILABLE		
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.28E-03	VDHVL-A-HV13A	EDG ROOM CUBICLE COOLER HV13A FAIL TO RUN FOR 1HR		
40	2.72E-10	1.34E-04	%IE-078-19B-FP-M-LP	MODERATE FP BREAK IN ROOM 078-19B DURING LPSD	0.3	45.9
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		1.30E-02	WOCHS2B-CH02B	FAILS TO START ECW CHILLER CH02B		
41	2.52E-10	2.05E-07	%IE-055-21B-SI-M-LP	MODERATE SI BREAK IN ROOM 055-21B DURING LPSD	0.3	46.2
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
42	2.44E-10	1.71E-05	%IE-137-13B-FP-X-LP	MAJOR FP BREAK IN ROOM 137-13B DURING LPSD	0.3	46.5
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.28E-03	VDHVL-A-HV12A	EDG ROOM CUBICLE COOLER HV12A FAILS TO RUN FOR 1HR		
43	2.44E-10	1.71E-05	%IE-137-13B-FP-X-LP	MAJOR FP BREAK IN ROOM 137-13B DURING LPSD	0.3	46.9
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.28E-03	VDHVL-A-HV13A	EDG ROOM CUBICLE COOLER HV13A FAIL TO RUN FOR 1HR		
44	2.36E-10	2.08E-05	%IE-055-22A-IW-S-LP	UNISOLABLE IW BREAK IN ROOM 055-22A DURING LPSD	0.3	47.1
		4.01E-03	BE-RATE-P06	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS6 DURATION		
		2.83E-03	SIMPR1B-SCPP01B	SC PUMP 1B FAIL TO RUN		

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Table 19.1-109 (10 of 21)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
45	2.24E-10	1.43E-06	%IE-078-20B-AF-X-LP	MAJOR AF BREAK IN ROOM 078-20B DURING LPSD	0.3	47.4
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
46	2.23E-10	5.71E-05	%IE-100-10B-FP-X-LP	MAJOR FP BREAK IN ROOM 100-10B DURING LPSD	0.3	47.7
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		2.50E-02	DGDGR-D-DGD	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01D		
47	2.18E-10	3.49E-04	%IE-078-19B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19B DURING LPSD	0.3	48.0
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		4.00E-03	SXCTM-2B-CT02B	SXCT CT02B UNAVAILABLE DUE TO T&M		
48	2.15E-10	5.51E-05	%IE-078-01D-FP-M-LP	MODERATE FP BREAK IN ROOM 078-01D DURING LPSD	0.3	48.2
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		2.50E-02	DGDGR-B-DGB	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01B		
49	2.14E-10	1.71E-04	%IE-078-01D-FP-X-LP	MAJOR FP BREAK IN ROOM 078-01D DURING LPSD	0.3	48.5
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		8.00E-03	FPOPH-2-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK BETWEEN 20 AND 40 MINUTES AVAILABLE		

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Table 19.1-109 (11 of 21)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
50	2.14E-10	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.3	48.8
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		4.00E-03	SXCTM-2B-CT02B	SXCT CT02B UNAVAILABLE DUE TO T&M		
51	2.11E-10	3.49E-04	%IE-078-19B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19B DURING LPSD	0.3	49.0
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		3.86E-03	VGAHS2B-AH02B	EWS PUMP ROOM II. SUPPLY FAN AH02B FAIL TO START		
52	2.06E-10	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.3	49.3
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		3.86E-03	VGAHS2B-AH02B	EWS PUMP ROOM II. SUPPLY FAN AH02B FAIL TO START		
53	2.06E-10	3.49E-04	%IE-078-19B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19B DURING LPSD	0.3	49.6
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		3.78E-03	DGDGL-A-DGA	DG A FAILS TO LOAD AND RUN DURING 1ST 1HR OF OPERATION		
		2.50E-02	DGDGR-D-DGD	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01D		
54	2.06E-10	3.49E-04	%IE-078-19B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19B DURING LPSD	0.3	49.8
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		3.78E-03	DGDGL-D-DGD	DG D FAILS TO LOAD AND RUN DURING 1ST 1HR OF OPERATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		

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Table 19.1-109 (12 of 21)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
55	2.02E-10	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.3	50.1
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		3.78E-03	DGDGL-A-DGA	DG A FAILS TO LOAD AND RUN DURING 1ST 1HR OF OPERATION		
		2.50E-02	DGDGR-D-DGD	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01D		
56	2.02E-10	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.3	50.3
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		3.78E-03	DGDGL-D-DGD	DG D FAILS TO LOAD AND RUN DURING 1ST 1HR OF OPERATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
57	1.96E-10	3.13E-08	%IE-055-21A-SI-X-LP	MAJOR SI BREAK IN ROOM 055-21A DURING LPSD	0.2	50.6
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
58	1.89E-10	3.49E-04	%IE-078-19B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19B DURING LPSD	0.2	50.8
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		6.66E-03	PFHBO1A-SW01A-H2	FAILS TO OPEN OF PCB SW01A-H2 OF 4.16kV SWGR SW01A FROM UAT		
		1.30E-02	WOCHS2B-CH02B	FAILS TO START ECW CHILLER CH02B		
59	1.85E-10	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.2	51.0
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		6.66E-03	PFHBO1A-SW01A-H2	FAILS TO OPEN OF PCB SW01A-H2 OF 4.16kV SWGR SW01A FROM UAT		
		1.30E-02	WOCHS2B-CH02B	FAILS TO START ECW CHILLER CH02B		

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Table 19.1-109 (13 of 21)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
60	1.84E-10	5.71E-05	%IE-100-10B-FP-X-LP	MAJOR FP BREAK IN ROOM 100-10B DURING LPSD	0.2	51.3
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		2.06E-02	WOOPH-B-1/2B	OPERATOR'S FAILURE TO OPERATE ECW PUMPS 1/2B		
61	1.82E-10	3.49E-04	%IE-078-19B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19B DURING LPSD	0.2	51.5
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		3.33E-03	DGSQA-D-LOADSQ	LOAD SEQUENCER D FAIL TO OPERATE		
62	1.82E-10	3.49E-04	%IE-078-19B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19B DURING LPSD	0.2	51.7
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-D-DGD	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01D		
		3.33E-03	DGSQA-A-LOADSQ	LOAD SEQUENCER D FAIL TO OPERATE		
63	1.78E-10	1.71E-04	%IE-078-01D-FP-X-LP	MAJOR FP BREAK IN ROOM 078-01D DURING LPSD	0.2	51.9
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		6.66E-03	PFHBO1B-SW01B-H2	4.16kVCLASS 1E 4.16kV SWITCHGEAR PCB SW01B-H2 (UAT) FAILS TO OPEN		
64	1.78E-10	1.71E-04	%IE-078-01D-FP-X-LP	MAJOR FP BREAK IN ROOM 078-01D DURING LPSD	0.2	52.2
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-B-DGB	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01B		
		6.66E-03	PFHBO1A-SW01A-H2	FAILS TO OPEN OF PCB SW01A-H2 OF 4.16kV SWGR SW01A FROM UAT		

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Table 19.1-109 (14 of 21)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
65	1.78E-10	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.2	52.4
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		3.33E-03	DGSQA-D-LOADSQ	LOAD SEQUENCER D FAIL TO OPERATE		
66	1.78E-10	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.2	52.6
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-D-DGD	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01D		
		3.33E-03	DGSQA-A-LOADSQ	LOAD SEQUENCER D FAIL TO OPERATE		
67	1.78E-10	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.2	52.8
		1.49E-03	BE-RATE-P4B	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS4B DURATION		
		3.49E-04	HR-FB-S2P04B	OPERATOR'S FAILURE TO FEED DURING S2 POS 4B		
68	1.70E-10	2.08E-05	%IE-055-22A-IW-S-LP	UNISOLABLE IW BREAK IN ROOM 055-22A DURING LPSD	0.2	53.0
		4.01E-03	BE-RATE-P06	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS6 DURATION		
		2.04E-03	HR-RS-S2P06	OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 6		
69	1.70E-10	1.22E-05	%IE-137-29B-FP-X-LP	MAJOR FP BREAK IN ROOM 137-29B DURING LPSD	0.2	53.2
		3.36E-04	BE-RATE-P03A	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS03A DURATION		
		8.20E-01	HR-RS-S2P03A	OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 3A		
		6.06E-04	HR-SG-S2P03A	OPERATOR'S FAILURE TO REMOVE STEAM DURING S2 AT POS 3A		
		8.34E+01	COMBINATION_175-LP	HEP DEPENDENCY FACTOR FOR HR-RS-S2P03A, HR-SG-S2P03A		

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Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
70	1.70E-10	3.49E-04	%IE-078-19B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19B DURING LPSD	0.2	53.5
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		3.78E-03	DGDGL-A-DGA	DG A FAILS TO LOAD AND RUN DURING 1ST 1HR OF OPERATION		
		2.06E-02	WOOPH-B-1/2B	OPERATOR'S FAILURE TO OPERATE ECW PUMPS 1/2B		
71	1.67E-10	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.2	53.7
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		3.78E-03	DGDGL-A-DGA	DG A FAILS TO LOAD AND RUN DURING 1ST 1HR OF OPERATION		
		2.06E-02	WOOPH-B-1/2B	OPERATOR'S FAILURE TO OPERATE ECW PUMPS 1/2B		
72	1.59E-10	2.54E-08	%IE-055-21B-SI-X-LP	MAJOR SI BREAK IN ROOM 055-21B DURING LPSD	0.2	53.9
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
73	1.58E-10	3.49E-04	%IE-078-19B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19B DURING LPSD	0.2	54.1
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		2.89E-03	DGDGS-D-DGD	FAILS TO START OF EMERGENCY DIESEL GENERATOR DG01D		
74	1.58E-10	3.49E-04	%IE-078-19B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19B DURING LPSD	0.2	54.3
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-D-DGD	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01D		
		2.89E-03	DGDGS-A-DGA	FAILS TO START OF EMERGENCY DIESEL GENERATOR DG01A		

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Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
75	1.55E-10	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.2	54.5
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		2.89E-03	DGDGS-D-DGD	FAILS TO START OF EMERGENCY DIESEL GENERATOR DG01D		
76	1.55E-10	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.2	54.6
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-D-DGD	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01D		
		2.89E-03	DGDGS-A-DGA	FAILS TO START OF EMERGENCY DIESEL GENERATOR DG01A		
77	1.54E-10	3.49E-04	%IE-078-19B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19B DURING LPSD	0.2	54.8
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		2.83E-03	SIMPR2B-PP02D	SI PUMP 2D FAIL TO RUN		
78	1.51E-10	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.2	55.0
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		2.83E-03	SIMPR2B-PP02D	SI PUMP 2D FAIL TO RUN		
79	1.51E-10	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.2	55.2
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-D-DGD	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01D		
		2.83E-03	SIMPR1A-PP02A	SI PUMP 2A FAIL TO RUN		

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Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
80	1.50E-10	3.49E-04	%IE-078-19B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19B DURING LPSD	0.2	55.4
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		3.33E-03	DGSQA-A-LOADSQ	LOAD SEQUENCER A FAIL TO OPERATE		
		2.06E-02	WOOPH-B-1/2B	OPERATOR'S FAILURE TO OPERATE ECW PUMPS 1/2B		
81	1.47E-10	9.94E-05	%IE-100-37B-FP-X-LP	MAJOR FP BREAK IN ROOM 100-37B DURING LPSD	0.2	55.6
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
82	1.47E-10	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.2	55.8
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		3.33E-03	DGSQA-A-LOADSQ	LOAD SEQUENCER A FAIL TO OPERATE		
		2.06E-02	WOOPH-B-1/2B	OPERATOR'S FAILURE TO OPERATE ECW PUMPS 1/2B		
83	1.47E-10	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.2	55.9
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		3.49E-04	HR-FB-S2P05	OPERATOR'S FAILURE TO FEED DURING S2 POS 5		
84	1.40E-10	1.34E-04	%IE-078-19B-FP-M-LP	MODERATE FP BREAK IN ROOM 078-19B DURING LPSD	0.2	56.1
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		6.66E-03	PFHBO2B-SW01D-G2	4.16kVCLASS 1E 4.16kV SWITCHGEAR PCB SW01D-G2 (UAT) FAILS TO OPEN		

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Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
85	1.40E-10	1.34E-04	%IE-078-19B-FP-M-LP	MODERATE FP BREAK IN ROOM 078-19B DURING LPSD	0.2	56.3
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-D-DGD	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01D		
		6.66E-03	PFHBO1A-SW01A-H2	FAILS TO OPEN OF PCB SW01A-H2 OF 4.16kV SWGR SW01A FROM UAT		
86	1.38E-10	3.49E-04	%IE-078-19B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19B DURING LPSD	0.2	56.5
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		6.66E-03	PFHBO1A-SW01A-H2	FAILS TO OPEN OF PCB SW01A-H2 OF 4.16kV SWGR SW01A FROM UAT		
87	1.36E-10	3.49E-04	%IE-078-19B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19B DURING LPSD	0.2	56.6
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		2.50E-03	VOHVM2B-HV32B	CUBICLE COOLER HV32B UAVAILABLE DUE TO T&M		
88	1.34E-10	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.2	56.8
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		2.50E-03	VOHVM2B-HV32B	CUBICLE COOLER HV32B UAVAILABLE DUE TO T&M		
89	1.32E-10	3.49E-04	%IE-078-19B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19B DURING LPSD	0.2	57.0
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		6.03E-05	PFHBWQ2-SW2OUATAD	CCF OF PCB BETWEEN UAT & 4.16KV SW01A/1D FAIL TO OPEN		

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Table 19.1-109 (19 of 21)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
90	1.30E-10	3.49E-04	%IE-078-19B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19B DURING LPSD	0.2	57.1
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.89E-03	DGDGS-A-DGA	FAILS TO START OF EMERGENCY DIESEL GENERATOR DG01A		
		2.06E-02	WOOPH-B-1/2B	OPERATOR'S FAILURE TO OPERATE ECW PUMPS 1/2B		
91	1.30E-10	3.49E-04	%IE-078-19B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19B DURING LPSD	0.2	57.3
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		5.95E-05	DGDGKQ4-DG01ABCD	CCF OF EDG 01A/01B/01C/01D FAIL TO RUN		
92	1.29E-10	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.2	57.5
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		6.03E-05	PFHBWQ2-SW2OUATAD	CCF OF PCB BETWEEN UAT & 4.16KV SW01A/1D FAIL TO OPEN		
93	1.27E-10	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.2	57.6
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.89E-03	DGDGS-A-DGA	FAILS TO START OF EMERGENCY DIESEL GENERATOR DG01A		
		2.06E-02	WOOPH-B-1/2B	OPERATOR'S FAILURE TO OPERATE ECW PUMPS 1/2B		
94	1.27E-10	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.2	57.8
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		5.95E-05	DGDGKQ4-DG01ABCD	CCF OF EDG 01A/01B/01C/01D FAIL TO RUN		

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Table 19.1-109 (20 of 21)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
95	1.27E-10	3.49E-04	%IE-078-19B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19B DURING LPSD	0.2	57.9
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		2.32E-03	SXCTS-2B-CT02B	SX CT02B FANS (ANY 1 OF 3) FAIL TO START		
96	1.26E-10	3.13E-08	%IE-055-21A-SI-X-LP	MAJOR SI BREAK IN ROOM 055-21A DURING LPSD	0.2	58.1
		4.01E-03	BE-RATE-P06	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS6 DURATION		
97	1.25E-10	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.2	58.2
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.83E-03	SIMPR1A-PP02A	SI PUMP 2A FAIL TO RUN		
		2.06E-02	WOOPH-B-1/2B	OPERATOR'S FAILURE TO OPERATE ECW PUMPS 1/2B		
98	1.24E-10	3.49E-04	%IE-078-19B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19B DURING LPSD	0.2	58.4
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		2.28E-03	VDHVL-D-HV12D	EDG ROOM CUBICLE COOLER HV12D FAIL TO RUN FOR 1HR		
99	1.24E-10	3.49E-04	%IE-078-19B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19B DURING LPSD	0.2	58.6
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-A-DGA	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01A		
		2.28E-03	VDHVL-D-HV13D	EDG ROOM CUBICLE COOLER HV13D FAIL TO RUN FOR 1HR		

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Table 19.1-109 (21 of 21)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
100	1.24E-10	3.49E-04	%IE-078-19B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19B DURING LPSD	0.2	58.7
		6.26E-03	BE-RATE-P10	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS10 DURATION		
		2.50E-02	DGDGR-D-DGD	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01D		
		2.28E-03	VDHVL-A-HV12A	EDG ROOM CUBICLE COOLER HV12A FAILS TO RUN FOR 1HR		

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Table 19.1-110 (1 of 21)

LPSD Internal Flooding PRA CDF Top 100 Cutsets – Reduced Inventory

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
1	1.07E-08	2.08E-05	%IE-055-22A-IW-S-LP	UNISOLABLE IW BREAK IN ROOM 055-22A DURING LPSD	81.3	81.3
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		4.18E-01	HR-RS-S2P05	OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 5		
2	4.99E-10	3.35E-04	%IE-100-20A-FP-X-LP	MAJOR FP BREAK IN ROOM 100-20A DURING LPSD	3.8	85.1
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		8.00E-03	FPOPH-2-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK BETWEEN 20 AND 40 MINUTES AVAILABLE		
		3.49E-04	HR-FB-S2P05	OPERATOR'S FAILURE TO FEED DURING S2 POS 5		
		4.18E-01	HR-RS-S2P05	OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 5		
		1.04E+03	COMBINATION_354-LP	HEP DEPENDENCY FACTOR FOR HR-RS-S2P05, FPOPH-2-ISO-FL, HR-FB-S2P05		
3	3.71E-10	2.49E-04	%IE-078-31A-FP-X-LP	MAJOR FP BREAK IN ROOM 078-31A DURING LPSD	2.8	87.9
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		8.00E-03	FPOPH-2-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK BETWEEN 20 AND 40 MINUTES AVAILABLE		
		2.93E-03	FPOPH-3DEP-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 72 MINUTES AVAILABLE		
		3.49E-04	HR-FB-S2P05	OPERATOR'S FAILURE TO FEED DURING S2 POS 5		
		4.18E-01	HR-RS-S2P05	OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 5		
		3.54E+05	COMBINATION_339-LP	HEP DEPENDENCY FACTOR FOR HR-RS-S2P05, FPOPH-2-ISO-FL, FPOPH-3DEP-ISO-FL, HR-FB-S2P05		

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Table 19.1-110 (2 of 21)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
4	2.52E-10	2.05E-07	%IE-055-21B-SI-M-LP	MODERATE SI BREAK IN ROOM 055-21B DURING LPSD	1.9	89.8
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
5	1.47E-10	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	1.1	90.9
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		3.49E-04	HR-FB-S2P05	OPERATOR'S FAILURE TO FEED DURING S2 POS 5		
6	1.15E-10	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.9	91.8
		9.66E-04	BE-RATE-P11	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS11 DURATION		
		3.49E-04	HR-FB-S2P11	OPERATOR'S FAILURE TO FEED DURING S2 POS 11		
7	1.06E-10	7.13E-05	%IE-100-20A-FP-M-LP	MODERATE FP BREAK IN ROOM 100-20A DURING LPSD	0.8	92.6
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		8.00E-03	FPOPH-2-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK BETWEEN 20 AND 40 MINUTES AVAILABLE		
		3.49E-04	HR-FB-S2P05	OPERATOR'S FAILURE TO FEED DURING S2 POS 5		
		4.18E-01	HR-RS-S2P05	OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 5		
		1.04E+03	COMBINATION_354-LP	HEP DEPENDENCY FACTOR FOR HR-RS-S2P05, FPOPH-2-ISO-FL, HR-FB-S2P05		
8	9.04E-11	1.76E-07	%IE-055-21A-SI-M-LP	MODERATE SI BREAK IN ROOM 055-21A DURING LPSD	0.7	93.3
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		4.18E-01	HR-RS-S2P05	OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 5		

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Table 19.1-110 (3 of 21)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
9	7.23E-11	2.08E-05	%IE-055-22A-IW-S-LP	UNISOLABLE IW BREAK IN ROOM 055-22A DURING LPSD	0.5	93.8
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		2.83E-03	SIMPR1B-SCPP01B	SC PUMP 1B FAIL TO RUN		
10	6.29E-11	3.51E-04	%IE-078-10C-FP-X-LP	MAJOR FP BREAK IN ROOM 078-10C DURING LPSD	0.5	94.3
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		3.49E-04	HR-FB-S2P05	OPERATOR'S FAILURE TO FEED DURING S2 POS 5		
		4.18E-01	HR-RS-S2P05	OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 5		
		1.00E+00	COMBINATION_62-LP	HEP dependency factor for HR-RS-S2P05, HR-FB-S2P05		
11	6.00E-11	3.35E-04	%IE-100-20A-FP-X-LP	MAJOR FP BREAK IN ROOM 100-20A DURING LPSD	0.5	94.8
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		3.49E-04	HR-FB-S2P05	OPERATOR'S FAILURE TO FEED DURING S2 POS 5		
		4.18E-01	HR-RS-S2P05	OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 5		
		1.00E+00	COMBINATION_62-LP	HEP dependency factor for HR-RS-S2P05, HR-FB-S2P05		
12	5.34E-11	2.98E-04	%IE-078-19A-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19A DURING LPSD	0.4	95.2
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		3.49E-04	HR-FB-S2P05	OPERATOR'S FAILURE TO FEED DURING S2 POS 5		
		4.18E-01	HR-RS-S2P05	OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 5		
		1.00E+00	COMBINATION_62-LP	HEP dependency factor for HR-RS-S2P05, HR-FB-S2P05		

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Table 19.1-110 (4 of 21)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
13	3.85E-11	3.13E-08 1.23E-03	%IE-055-21A-SI-X-LP BE-RATE-P05	MAJOR SI BREAK IN ROOM 055-21A DURING LPSD CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION	0.3	95.5
14	3.47E-11	6.76E-08 1.23E-03 4.18E-01	%IE-050A-SI-X-LP BE-RATE-P05 HR-RS-S2P05	MAJOR SI BREAK IN ROOM 050-03A DURING LPSD CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 5	0.3	95.8
15	3.12E-11	2.54E-08 1.23E-03	%IE-055-21B-SI-X-LP BE-RATE-P05	MAJOR SI BREAK IN ROOM 055-21B DURING LPSD CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION	0.2	96.0
16	3.02E-11	3.13E-08 9.66E-04	%IE-055-21A-SI-X-LP BE-RATE-P11	MAJOR SI BREAK IN ROOM 055-21A DURING LPSD CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS11 DURATION	0.2	96.2
17	2.46E-11	2.08E-05 1.23E-03 9.63E-04	%IE-055-22A-IW-S-LP BE-RATE-P05 CCMVO-B-352	UNISOLABLE IW BREAK IN ROOM 055-22A DURING LPSD CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION CCW MOV V352 FAIL TO OPEN	0.2	96.4
18	2.45E-11	2.54E-08 9.66E-04	%IE-055-21B-SI-X-LP BE-RATE-P11	MAJOR SI BREAK IN ROOM 055-21B DURING LPSD CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS11 DURATION	0.2	96.6
19	2.42E-11	2.08E-05 1.23E-03 9.47E-04	%IE-055-22A-IW-S-LP BE-RATE-P05 SIMPS1B-SCPP01B	UNISOLABLE IW BREAK IN ROOM 055-22A DURING LPSD CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION SC PUMP 1B FAIL TO START	0.2	96.8
20	2.20E-11	1.79E-08 1.23E-03	%IE-055-21B-CS-X-LP BE-RATE-P05	MAJOR CS BREAK IN ROOM 055-21B DURING LPSD CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION	0.2	97.0

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Table 19.1-110 (5 of 21)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
21	1.86E-11	1.04E-04	%IE-078-10C-FP-M-LP	MODERATE FP BREAK IN ROOM 078-10C DURING LPSD	0.1	97.1
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		3.49E-04	HR-FB-S2P05	OPERATOR'S FAILURE TO FEED DURING S2 POS 5		
		4.18E-01	HR-RS-S2P05	OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 5		
		1.00E+00	COMBINATION_62-LP	HEP dependency factor for HR-RS-S2P05, HR-FB-S2P05		
22	1.76E-11	1.18E-05	%IE-137-20A-FP-M-LP	MODERATE FP BREAK IN ROOM 137-20A DURING LPSD	0.1	97.2
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		8.00E-03	FPOPH-2-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK BETWEEN 20 AND 40 MINUTES AVAILABLE		
		3.49E-04	HR-FB-S2P05	OPERATOR'S FAILURE TO FEED DURING S2 POS 5		
		4.18E-01	HR-RS-S2P05	OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 5		
		1.04E+03	COMBINATION_354-LP	HEP DEPENDENCY FACTOR FOR HR-RS-S2P05, FPOPH-2-ISO-FL, HR-FB-S2P05		
23	1.73E-11	1.79E-08	%IE-055-21B-CS-X-LP	MAJOR CS BREAK IN ROOM 055-21B DURING LPSD	0.1	97.3
		9.66E-04	BE-RATE-P11	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS11 DURATION		
24	1.64E-11	1.33E-08	%IE-055-21A-CS-X-LP	MAJOR CS BREAK IN ROOM 055-21A DURING LPSD	0.1	97.4
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
25	1.61E-11	3.13E-08	%IE-078-21A-SI-X-LP	MAJOR SI BREAK IN ROOM 078-21A DURING LPSD	0.1	97.5
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		4.18E-01	HR-RS-S2P05	OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 5		

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Table 19.1-110 (6 of 21)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
26	1.49E-11	8.31E-05	%IE-078-19A-FP-M-LP	MODERATE FP BREAK IN ROOM 078-19A DURING LPSD	0.1	97.6
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR		
		3.49E-04	HR-FB-S2P05	POS5 DURATION		
		4.18E-01	HR-RS-S2P05	OPERATOR'S FAILURE TO FEED DURING S2 POS 5		
		1.00E+00	COMBINATION_62-LP	OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 5 HEP dependency factor for HR-RS-S2P05, HR-FB-S2P05		
27	1.28E-11	1.33E-08	%IE-055-21A-CS-X-LP	MAJOR CS BREAK IN ROOM 055-21A DURING LPSD	0.1	97.7
		9.66E-04	BE-RATE-P11	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS11 DURATION		
28	1.17E-11	6.55E-05	%IE-078-25A-WO-S-LP	ANY WO BREAK IN ROOM 078-25A DURING LPSD	0.1	97.8
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR		
		3.49E-04	HR-FB-S2P05	POS5 DURATION		
		4.18E-01	HR-RS-S2P05	OPERATOR'S FAILURE TO FEED DURING S2 POS 5		
		1.00E+00	COMBINATION_62-LP	OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 5 HEP dependency factor for HR-RS-S2P05, HR-FB-S2P05		
29	1.04E-11	2.02E-08	%IE-050A-CS-X-LP	MAJOR CS BREAK IN ROOM 050-03A DURING LPSD	0.1	97.9
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR		
		4.18E-01	HR-RS-S2P05	POS5 DURATION OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 5		

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Table 19.1-110 (7 of 21)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
30	9.72E-12	3.76E-07	%IE-078-15C-AF-X-LP	MAJOR AF BREAK IN ROOM 078-15C DURING LPSD	0.1	98.0
		1.00E+00	AFOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A AF BREAK WITH LESS THAN 10 MUNITE AVAILABLE		
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POSS DURATION		
		3.49E-04	HR-FB-S2P05	OPERATOR'S FAILURE TO FEED DURING S2 POS 5		
		4.18E-01	HR-RS-S2P05	OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 5		
		1.44E+02	COMBINATION_409-LP	HEP dependency factor for HR-RS-S2P05, AFOPH-1-ISO-FL, HR-FB-S2P05		
31	9.49E-12	3.51E-04	%IE-078-10C-FP-X-LP	MAJOR FP BREAK IN ROOM 078-10C DURING LPSD	0.1	98.1
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POSS DURATION		
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		3.49E-04	HR-FB-S2P05	OPERATOR'S FAILURE TO FEED DURING S2 POS 5		
		4.18E-01	HR-RS-S2P05	OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 5		
		1.59E+01	COMBINATION_568-LP	HEP dependency factor for HR-RS-S2P05, FPOPH-1-ISO-FL		
32	9.21E-12	3.49E-04	%IE-078-19B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19B DURING LPSD	0.1	98.2
		9.66E-04	BE-RATE-P11	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS11 DURATION		
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1B,1C,1D FAIL TO OPEN		
33	9.02E-12	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.1	98.3
		9.66E-04	BE-RATE-P11	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS11 DURATION		
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1B,1C,1D FAIL TO OPEN		

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Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
34	8.06E-12	2.98E-04	%IE-078-19A-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19A DURING LPSD	0.1	98.4
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POSS DURATION		
		9.48E-03	FPOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 20 MINUTE AVAILABLE		
		3.49E-04	HR-FB-S2P05	OPERATOR'S FAILURE TO FEED DURING S2 POS 5		
		4.18E-01	HR-RS-S2P05	OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 5		
		1.59E+01	COMBINATION_568-LP	HEP dependency factor for HR-RS-S2P05, FPOPH-1-ISO-FL		
35	8.02E-12	4.48E-05	%IE-137-09C-FP-M-LP	MODERATE FP BREAK IN ROOM 137-09C DURING LPSD	0.1	98.5
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POSS DURATION		
		3.49E-04	HR-FB-S2P05	OPERATOR'S FAILURE TO FEED DURING S2 POS 5		
		4.18E-01	HR-RS-S2P05	OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 5		
		1.00E+00	COMBINATION_62-LP	HEP dependency factor for HR-RS-S2P05, HR-FB-S2P05		
36	7.91E-12	2.76E-07	%IE-050A-SI-M-LP	MODERATE SI BREAK IN ROOM 050-03A DURING LPSD	0.0	98.5
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POSS DURATION		
		6.08E-03	CSOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A CS OR SI BREAK WITH LESS THAN 53 MUNITE AVAILABLE		
		4.18E-01	HR-RS-S2P05	OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 5		
		9.17E+00	COMBINATION_415-LP	HEP dependency factor for HR-RS-S2P05, CSOPH-1-ISO-FL		

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Table 19.1-110 (9 of 21)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
37	5.58E-12	3.49E-04	%IE-078-19B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19B DURING LPSD	0.0	98.5
		9.66E-04	BE-RATE-P11	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS11 DURATION		
		1.65E-05	PFHBWQ3-SW2OUATACD	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1C,1D FAIL TO OPEN		
38	5.47E-12	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.0	98.6
		9.66E-04	BE-RATE-P11	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS11 DURATION		
		1.65E-05	PFHBWQ3-SW2OUATACD	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1C,1D FAIL TO OPEN		
39	5.18E-12	3.51E-04	%IE-078-10C-FP-X-LP	MAJOR FP BREAK IN ROOM 078-10C DURING LPSD	0.0	98.6
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
40	5.13E-12	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.0	98.6
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
41	5.05E-12	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.0	98.7
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
42	4.94E-12	3.35E-04	%IE-100-20A-FP-X-LP	MAJOR FP BREAK IN ROOM 100-20A DURING LPSD	0.0	98.7
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		

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Table 19.1-110 (10 of 21)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
43	4.58E-12	2.56E-05	%IE-137-09C-FP-X-LP	MAJOR FP BREAK IN ROOM 137-09C DURING LPSD	0.0	98.7
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		3.49E-04	HR-FB-S2P05	OPERATOR'S FAILURE TO FEED DURING S2 POS 5		
		4.18E-01	HR-RS-S2P05	OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 5		
		1.00E+00	COMBINATION_62-LP	HEP dependency factor for HR-RS-S2P05, HR-FB-S2P05		
44	4.51E-12	1.71E-04	%IE-078-01D-FP-X-LP	MAJOR FP BREAK IN ROOM 078-01D DURING LPSD	0.0	98.8
		9.66E-04	BE-RATE-P11	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS11 DURATION		
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1B,1C,1D FAIL TO OPEN		
45	4.40E-12	2.98E-04	%IE-078-19A-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19A DURING LPSD	0.0	98.8
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
46	4.26E-12	2.08E-05	%IE-055-22A-IW-S-LP	UNISOLABLE IW BREAK IN ROOM 055-22A DURING LPSD	0.0	98.8
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		2.50E-02	DGDGR-B-DGB	FAILS TO RUN EMERGENCY DIESEL GENERATOR DG01B		
		6.66E-03	PFHBC1B-SW01B-A2	PCB SW01B-A2 OF 4.16KV SWGR SW01B FAIL TO CLOSE		
47	4.05E-12	3.49E-04	%IE-078-19B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19B DURING LPSD	0.0	98.9
		9.66E-04	BE-RATE-P11	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS11 DURATION		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		

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Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
48	4.03E-12	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.0	98.9
		9.66E-04	BE-RATE-P11	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS11 DURATION		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
49	4.02E-12	2.91E-06	%IE-100-32B-WM-M-LP	MODERATE WM BREAK IN ROOM 100-32B DURING LPSD	0.0	98.9
		9.66E-04	BE-RATE-P11	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS11 DURATION		
		3.49E-04	HR-FB-S2P11	OPERATOR'S FAILURE TO FEED DURING S2 POS 11		
		2.84E-02	WMOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A WM BREAK WITH LESS THAN 40 MUNITE AVAILABLE		
		1.44E+02	COMBINATION_378-LP	HEP dependency factor for WMOPH-1-ISO-FL, HR-FB-S2P11		
50	3.96E-12	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.0	99.0
		9.66E-04	BE-RATE-P11	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS11 DURATION		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
51	3.53E-12	1.34E-04	%IE-078-19B-FP-M-LP	MODERATE FP BREAK IN ROOM 078-19B DURING LPSD	0.0	99.0
		9.66E-04	BE-RATE-P11	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS11 DURATION		
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1B,1C,1D FAIL TO OPEN		
52	3.36E-12	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.0	99.0
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		2.83E-03	SIMPR1A-PP02A	SI PUMP 2A FAIL TO RUN		
		2.83E-03	SIMPR2A-PP02C	SI PUMP 2C FAIL TO RUN		

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Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
53	3.22E-12	3.20E-04	%IE-078-31A-FP-M-LP	MODERATE FP BREAK IN ROOM 078-31A DURING LPSD CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 80 MUNITE AVAILABLE OPERATOR'S FAILURE TO FEED DURING S2 POS 5 OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 5 HEP dependency factor for HR-RS-S2P05, FPOPH-4-ISO-FL, HR-FB-S2P05	0.0	99.0
		1.23E-03	BE-RATE-P05			
		6.51E-03	FPOPH-4-ISO-FL			
		3.49E-04	HR-FB-S2P05			
		4.18E-01	HR-RS-S2P05			
		8.63E+00	COMBINATION_337-LP			
54	3.15E-12	2.08E-05	%IE-055-22A-IW-S-LP	UNISOLABLE IW BREAK IN ROOM 055-22A DURING LPSD CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION SC PUMP 1B FAIL TO RUN FOR 1HR	0.0	99.1
		1.23E-03	BE-RATE-P05			
		1.23E-04	SIMPL1B-SCPP01B			
55	2.73E-12	1.71E-04	%IE-078-01D-FP-X-LP	MAJOR FP BREAK IN ROOM 078-01D DURING LPSD CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS11 DURATION CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1B,1C FAIL TO OPEN	0.0	99.1
		9.66E-04	BE-RATE-P11			
		1.65E-05	PFHBWQ3-SW2OUATABC			
56	2.60E-12	2.05E-07	%IE-078-21B-SI-M-LP	MODERATE SI BREAK IN ROOM 078-21B DURING LPSD CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS11 DURATION OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 11	0.0	99.1
		9.66E-04	BE-RATE-P11			
		1.31E-02	HR-RS-S2P11			
57	2.43E-12	2.08E-05	%IE-055-22A-IW-S-LP	UNISOLABLE IW BREAK IN ROOM 055-22A DURING LPSD CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION FAILURE OF PRIMARY LOOP CONTROLLER 1B	0.0	99.1
		1.23E-03	BE-RATE-P05			
		9.48E-05	PELXY-B-LX01B-P			

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Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
58	2.43E-12	2.08E-05	%IE-055-22A-IW-S-LP	UNISOLABLE IW BREAK IN ROOM 055-22A DURING LPSD	0.0	99.1
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR		
		9.48E-05	PELXY-B-LX04B-P	POS5 DURATION FAILURE OF PRIMARY LOOP CONTROLLER 4B		
59	2.36E-12	2.08E-05	%IE-055-22A-IW-S-LP	UNISOLABLE IW BREAK IN ROOM 055-22A DURING LPSD	0.0	99.2
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR		
		9.22E-05	CCVVT-B-V1512	POS5 DURATION CCW HX. HE01B OUTLET MANUAL VALVE 1512 TRANSFER CLOSED		
60	2.36E-12	2.08E-05	%IE-055-22A-IW-S-LP	UNISOLABLE IW BREAK IN ROOM 055-22A DURING LPSD	0.0	99.2
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR		
		9.22E-05	SIVVT2B-V107	POS5 DURATION SCS PUMP 2 SUCTION MANUAL VALVE 107 TRANSFER CLOSED		
61	2.36E-12	2.08E-05	%IE-055-22A-IW-S-LP	UNISOLABLE IW BREAK IN ROOM 055-22A DURING LPSD	0.0	99.2
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR		
		9.22E-05	SIVVT2B-V579	POS5 DURATION SC PUMP 2 DISCHARGE PATH MANUAL VALVE V579 FAIL TO REMAIN OPEN		
62	2.20E-12	3.51E-04	%IE-078-10C-FP-X-LP	MAJOR FP BREAK IN ROOM 078-10C DURING LPSD	0.0	99.2
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR		
		4.18E-01	HR-RS-S2P05	POS5 DURATION OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 5		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Table 19.1-110 (14 of 21)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
63	2.18E-12	1.22E-05	%IE-137-29B-FP-X-LP	MAJOR FP BREAK IN ROOM 137-29B DURING LPSD	0.0	99.2
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		3.49E-04	HR-FB-S2P05	OPERATOR'S FAILURE TO FEED DURING S2 POS 5		
		4.18E-01	HR-RS-S2P05	OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 5		
		1.00E+00	COMBINATION_62-LP	HEP dependency factor for HR-RS-S2P05, HR-FB-S2P05		
64	2.14E-12	1.34E-04	%IE-078-19B-FP-M-LP	MODERATE FP BREAK IN ROOM 078-19B DURING LPSD	0.0	99.3
		9.66E-04	BE-RATE-P11	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS11 DURATION		
		1.65E-05	PFHBWQ3-SW2OUATACD	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1C,1D FAIL TO OPEN		
65	2.10E-12	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.0	99.3
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		5.00E-06	SIMVWQ2-636/46	CCF OF DVI LINE MOV 636/646 FAIL TO OPEN		
66	2.10E-12	3.35E-04	%IE-100-20A-FP-X-LP	MAJOR FP BREAK IN ROOM 100-20A DURING LPSD	0.0	99.3
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		4.18E-01	HR-RS-S2P05	OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 5		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
67	1.98E-12	1.71E-04	%IE-078-01D-FP-X-LP	MAJOR FP BREAK IN ROOM 078-01D DURING LPSD	0.0	99.3
		9.66E-04	BE-RATE-P11	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS11 DURATION		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		

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Table 19.1-110 (15 of 21)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
68	1.87E-12	2.98E-04	%IE-078-19A-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19A DURING LPSD	0.0	99.3
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		4.18E-01	HR-RS-S2P05	OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 5		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
69	1.63E-12	2.08E-05	%IE-055-22A-IW-S-LP	UNISOLABLE IW BREAK IN ROOM 055-22A DURING LPSD	0.0	99.3
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		6.36E-05	PED0Y-B-LX01B02	FAILURE OF DIGITAL OUTPUT MODULE LX01B BRANCH 02		
70	1.63E-12	2.08E-05	%IE-055-22A-IW-S-LP	UNISOLABLE IW BREAK IN ROOM 055-22A DURING LPSD	0.0	99.3
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		6.36E-05	PED0Y-B-LX04B03	FAILURE OF DIGITAL OUTPUT MODULE LX04B BRANCH 03		
71	1.55E-12	1.34E-04	%IE-078-19B-FP-M-LP	MODERATE FP BREAK IN ROOM 078-19B DURING LPSD	0.0	99.3
		9.66E-04	BE-RATE-P11	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS11 DURATION		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
72	1.54E-12	3.49E-04	%IE-078-19B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19B DURING LPSD	0.0	99.4
		9.66E-04	BE-RATE-P11	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS11 DURATION		
		3.49E-04	HR-FB-S2P11	OPERATOR'S FAILURE TO FEED DURING S2 POS 11		
		1.31E-02	HR-RS-S2P11	OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 11		
		1.00E+00	COMBINATION_66-LP	HEP dependency factor for HR-RS-S2P11, HR-FB-S2P11		

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Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
73	1.54E-12	1.04E-04	%IE-078-10C-FP-M-LP	MODERATE FP BREAK IN ROOM 078-10C DURING LPSD	0.0	99.4
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
74	1.51E-12	5.71E-05	%IE-100-10B-FP-X-LP	MAJOR FP BREAK IN ROOM 100-10B DURING LPSD	0.0	99.4
		9.66E-04	BE-RATE-P11	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS11 DURATION		
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1B,1C,1D FAIL TO OPEN		
75	1.45E-12	5.51E-05	%IE-078-01D-FP-M-LP	MODERATE FP BREAK IN ROOM 078-01D DURING LPSD	0.0	99.4
		9.66E-04	BE-RATE-P11	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS11 DURATION		
		2.73E-05	PFHBWQ4-SW2OUAT	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1B,1C,1D FAIL TO OPEN		
76	1.39E-12	7.78E-06	%IE-050-A04A-WO-S-LP	ANY WO BREAK IN ROOM 050-04A DURING LPSD	0.0	99.4
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		3.49E-04	HR-FB-S2P05	OPERATOR'S FAILURE TO FEED DURING S2 POS 5		
		4.18E-01	HR-RS-S2P05	OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 5		
		1.00E+00	COMBINATION_62-LP	HEP dependency factor for HR-RS-S2P05, HR-FB-S2P05		
77	1.32E-12	2.05E-07	%IE-078-21B-SI-M-LP	MODERATE SI BREAK IN ROOM 078-21B DURING LPSD	0.0	99.4
		9.66E-04	BE-RATE-P11	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS11 DURATION		
		6.66E-03	PFHBO1A-SW01A-H2	FAILS TO OPEN OF PCB SW01A-H2 OF 4.16kV SWGR SW01A FROM UAT		

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Table 19.1-110 (17 of 21)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
78	1.23E-12	8.31E-05	%IE-078-19A-FP-M-LP	MODERATE FP BREAK IN ROOM 078-19A DURING LPSD	0.0	99.4
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
79	1.15E-12	1.98E-05	%IE-078-15D-AF-X-LP	MAJOR AF BREAK IN ROOM 078-15D DURING LPSD	0.0	99.4
		1.00E+00	AFOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A AF BREAK WITH LESS THAN 10 MUNITE AVAILABLE		
		9.66E-04	BE-RATE-P11	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS11 DURATION		
		6.03E-05	PFHBWQ2-SW2OUATAC	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1C FAIL TO OPEN		
80	1.15E-12	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.0	99.4
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		2.73E-06	SIMVWQ4-616/26/36/46	CCF OF DVI LINE MOV 616/626/636/646 FAIL TO OPEN		
81	1.14E-12	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.0	99.5
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		2.83E-03	SIMPR1A-PP02A	SI PUMP 2A FAIL TO RUN		
		9.63E-04	SIMVO2A-636	SI PUMP 1 INJECTION LINE MOV V636 FAIL TO OPEN		
82	1.14E-12	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.0	99.5
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		2.83E-03	SIMPR2A-PP02C	SI PUMP 2C FAIL TO RUN		
		9.63E-04	SIMVO1A-646	SI PUMP 1 INJECTION LINE MOV V646 FAILS TO OPEN		

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Table 19.1-110 (18 of 21)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
83	1.14E-12	2.66E-06	%IE-137-29B-FP-M-LP	MODERATE FP BREAK IN ROOM 137-29B DURING LPSD	0.0	99.5
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		3.49E-04	HR-FB-S2P05	OPERATOR'S FAILURE TO FEED DURING S2 POS 5		
84	1.13E-12	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.0	99.5
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		2.83E-03	SIMPR1A-PP02A	SI PUMP 2A FAIL TO RUN		
		9.47E-04	SIMPS2A-PP02C	SI PUMP 2C FAIL TO START		
85	1.13E-12	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.0	99.5
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		2.83E-03	SIMPR2A-PP02C	SI PUMP 2C FAIL TO RUN		
		9.47E-04	SIMPS1A-PP02A	SI PUMP 2A FAIL TO START		
86	1.08E-12	3.76E-08	%IE-050A-CS-M-LP	MODERATE CS BREAK IN ROOM 050-03A DURING LPSD	0.0	99.5
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		6.08E-03	CSOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A CS OR SI BREAK WITH LESS THAN 53 MUNITE AVAILABLE		
		4.18E-01	HR-RS-S2P05	OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 5		
		9.17E+00	COMBINATION_415-LP	HEP dependency factor for HR-RS-S2P05, CSOPH-1-ISO-FL		
87	9.96E-13	1.71E-05	%IE-137-13B-FP-X-LP	MAJOR FP BREAK IN ROOM 137-13B DURING LPSD	0.0	99.5
		9.66E-04	BE-RATE-P11	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS11 DURATION		
		6.03E-05	PFHBWQ2-SW2OUATAC	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1C FAIL TO OPEN		

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Table 19.1-110 (19 of 21)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
88	9.67E-13	6.55E-05	%IE-078-25A-WO-S-LP	ANY WO BREAK IN ROOM 078-25A DURING LPSD	0.0	99.5
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
89	9.13E-13	5.71E-05	%IE-100-10B-FP-X-LP	MAJOR FP BREAK IN ROOM 100-10B DURING LPSD	0.0	99.5
		9.66E-04	BE-RATE-P11	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS11 DURATION		
		1.65E-05	PFHBWQ3-SW2OUATACD	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1C,1D FAIL TO OPEN		
90	9.00E-13	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.0	99.5
		9.66E-04	BE-RATE-P11	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS11 DURATION		
		2.73E-06	SIMVWQ4-616/26/36/46	CCF OF DVI LINE MOV 616/626/636/646 FAIL TO OPEN		
91	8.96E-13	2.66E-06	%IE-137-29B-FP-M-LP	MODERATE FP BREAK IN ROOM 137-29B DURING LPSD	0.0	99.5
		9.66E-04	BE-RATE-P11	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS11 DURATION		
		3.49E-04	HR-FB-S2P11	OPERATOR'S FAILURE TO FEED DURING S2 POS 11		
92	8.81E-13	5.51E-05	%IE-078-01D-FP-M-LP	MODERATE FP BREAK IN ROOM 078-01D DURING LPSD	0.0	99.5
		9.66E-04	BE-RATE-P11	CONVERSION FACTOR (SD-YR→ CALENDAR YR) FOR POS11 DURATION		
		1.65E-05	PFHBWQ3-SW2OUATABC	CCF OF PCB BETWEEN UAT & 4.16kV SW01A,1B,1C FAIL TO OPEN		
93	8.53E-13	2.08E-05	%IE-055-22A-IW-S-LP	UNISOLABLE IW BREAK IN ROOM 055-22A DURING LPSD	0.0	99.5
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		3.34E-05	PFBSY1B-SW01B	BUS FAULT ON 4.16KV SWGR SW01B		

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Table 19.1-110 (20 of 21)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
94	8.53E-13	2.08E-05	%IE-055-22A-IW-S-LP	UNISOLABLE IW BREAK IN ROOM 055-22A DURING LPSD	0.0	99.5
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		3.34E-05	PGBSY1B-LC01B	BUS FAULT ON 480V LC LC01B		
95	8.48E-13	1.98E-05	%IE-078-15D-AF-X-LP	MAJOR AF BREAK IN ROOM 078-15D DURING LPSD	0.0	99.6
		1.00E+00	AFOPH-1-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A AF BREAK WITH LESS THAN 10 MUNITE AVAILABLE		
		9.66E-04	BE-RATE-P11	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS11 DURATION		
		6.66E-03	PFHBO1A-SW01A-H2	FAILS TO OPEN OF PCB SW01A-H2 OF 4.16kV SWGR SW01A FROM UAT		
		6.66E-03	PFHBO2A-SW01C-C2	4.16kV CLASS 1E 4.16kV SWITCHGEAR PCB SW01C-C2 (UAT) FAILS TO OPEN		
96	8.30E-13	8.25E-05	%IE-100-22A-FP-S-LP	ANY FP BREAK IN ROOM 100-22A DURING LPSD	0.0	99.6
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		6.51E-03	FPOPH-4-ISO-FL	OPERATOR'S FAILURE TO ISOLATE A FP BREAK WITH LESS THAN 80 MUNITE AVAILABLE		
		3.49E-04	HR-FB-S2P05	OPERATOR'S FAILURE TO FEED DURING S2 POS 5		
		4.18E-01	HR-RS-S2P05	OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 5		
		8.63E+00	COMBINATION_337-LP	HEP dependency factor for HR-RS-S2P05, FPOPH-4-ISO-FL, HR-FB-S2P05		
97	7.83E-13	3.49E-04	%IE-078-19B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-19B DURING LPSD	0.0	99.6
		9.66E-04	BE-RATE-P11	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS11 DURATION		
		3.49E-04	HR-FB-S2P11	OPERATOR'S FAILURE TO FEED DURING S2 POS 11		
		6.66E-03	PFHBO1A-SW01A-H2	FAILS TO OPEN OF PCB SW01A-H2 OF 4.16kV SWGR SW01A FROM UAT		

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Table 19.1-110 (21 of 21)

Rank	Frequency (yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
98	7.56E-13	1.71E-04	%IE-078-01D-FP-X-LP	MAJOR FP BREAK IN ROOM 078-01D DURING LPSD	0.0	99.6
		9.66E-04	BE-RATE-P11	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS11 DURATION		
		3.49E-04	HR-FB-S2P11	OPERATOR'S FAILURE TO FEED DURING S2 POS 11		
		1.31E-02	HR-RS-S2P11	OPERATOR'S FAILURE TO RESTORE SCS DURING S2 POS 11		
		1.00E+00	COMBINATION_66-LP	HEP dependency factor for HR-RS-S2P11, HR-FB-S2P11		
99	7.33E-13	1.71E-05	%IE-137-13B-FP-X-LP	MAJOR FP BREAK IN ROOM 137-13B DURING LPSD	0.0	99.6
		9.66E-04	BE-RATE-P11	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS11 DURATION		
		6.66E-03	PFHBO1A-SW01A-H2	FAILS TO OPEN OF PCB SW01A-H2 OF 4.16kV SWGR SW01A FROM UAT		
		6.66E-03	PFHBO2A-SW01C-C2	4.16kV CLASS 1E 4.16kV SWITCHGEAR PCB SW01C-C2 (UAT) FAILS TO OPEN		
100	6.93E-13	3.42E-04	%IE-078-44B-FP-X-LP	MAJOR FP BREAK IN ROOM 078-44B DURING LPSD	0.0	99.6
		1.23E-03	BE-RATE-P05	CONVERSION FACTOR (SD-YR → CALENDAR YR) FOR POS5 DURATION		
		1.65E-06	SIMVWQ3-616/36/46	CCF OF DVI LINE MOV 646/636/616 FAIL TO OPEN		

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Table 19.1-135 (1 of 53)

LPSD Internal Events PRA Top 100 Cutsets (LRF) – All POS

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
1	6.72E-09	1.60E-01	%SL1	Small LOCA at Reduced Inventory	9.6	9.6
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		5.37E-04	HR-FB-JLP05-01	Operator Fails to Feed during JL POS 5 w/makeup established		
		6.76E-03	HR-RS-JLP05	Operator Fails to Restore SCS during JL POS 5		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		9.41E+01	COMBINATION_19-LP	HEP dependency factor for HR-RS-JLP05,HR-FB-JLP05-01		
2	3.06E-09	2.90E-03	%SO	RCS Overdraining due to SCS	4.4	13.9
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		3.49E-04	HR-FB-SOP05-01	Operator Fails to Feed during SO POS 5 w/makeup established		
		6.76E-03	HR-RS-SOP05	Operator Fails to Restore SCS during SO POS 5		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		1.75E+05	COMBINATION_730-LP	HEP dependency factor for HR-RS-SOP05,HR-FB-SOP05-01,HR-FB-SAMG,IWOPH-S-CFS		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
3	2.76E-09	2.90E-03	%SO	RCS Overdraining due to SCS	3.9	17.9
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		3.49E-04	HR-FB-SOP05-01	Operator Fails to Feed during SO POS 5 w/makeup established		
		6.76E-03	HR-RS-SOP05	Operator Fails to Restore SCS during SO POS 5		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCFH2BRUP	Late contmt failure due to late H2 burn		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		1.75E+05	COMBINATION_730-LP	HEP dependency factor for HR-RS-SOP05,HR-FB-SOP05-01,HR-FB-SAMG,IWOPH-S-CFS		
4	1.84E-09	2.90E-03	%SO	RCS Overdraining due to SCS	2.6	20.5
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		

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Table 19.1-135 (3 of 53)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
5	1.70E-09	2.90E-03	%SO	RCS Overdraining due to SCS	2.4	22.9
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		3.49E-04	HR-FB-SOP05-01	Operator Fails to Feed during SO POS 5 w/makeup established		
		6.76E-03	HR-RS-SOP05	Operator Fails to Restore SCS during SO POS 5		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		2.55E+03	COMBINATION_616-LP	HEP dependency factor for HR-RS-SOP05,HR-FB-SOP05-01,HR-FB-SAMG		

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Table 19.1-135 (4 of 53)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
6	1.70E-09	2.90E-03	%SO	RCS Overdraining due to SCS	2.4	25.3
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		3.49E-04	HR-FB-SOP05-01	Operator Fails to Feed during SO POS 5 w/makeup established		
		6.76E-03	HR-RS-SOP05	Operator Fails to Restore SCS during SO POS 5		
		5.00E-01	LPSD-L2-DCOOL-YES	Debris in cavity covered by water and cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		2.55E+03	COMBINATION_616-LP	HEP dependency factor for HR-RS-SOP05,HR-FB-SOP05-01,HR-FB-SAMG		

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Table 19.1-135 (5 of 53)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
7	1.66E-09	2.90E-03	%SO	RCS Overdraining due to SCS	2.4	27.7
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		1.00E-01	LPSD-L2-LCFH2BRUP	Late contmt failure due to late H2 burn		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
8	1.54E-09	3.50E-02	%SL2	Small LOCA above Reduced Inventory	2.2	29.9
		4.01E-03	BE-RATE-P06	Conversion factor (SD-yr -> Calendar yr) for POS6 duration		
		2.72E-03	HR-FB-JLP06-01	Operator Fails to Feed during JL POS 6 w/makeup established		
		2.08E-03	HR-RS-JLP06	Operator Fails to Restore SCS during JL POS 6		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		1.93E+01	COMBINATION_26-LP	HEP dependency factor for HR-RS-JLP06,HR-FB-JLP06-01		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
9	1.15E-09	2.90E-03	%SO	RCS Overdraining due to SCS	1.6	31.5
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
10	1.15E-09	2.90E-03	%SO	RCS Overdraining due to SCS	1.6	33.2
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	LPSD-L2-DCOOL-YES	Debris in cavity covered by water and cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
11	1.15E-09	2.90E-03	%SO	RCS Overdraining due to SCS	1.6	34.8
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
12	1.15E-09	2.90E-03	%SO	RCS Overdraining due to SCS	1.6	36.5
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		5.00E-01	LPSD-L2-DCOOL-YES	Debris in cavity covered by water and cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Table 19.1-135 (8 of 53)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
13	1.15E-09	2.90E-03	%SO	RCS Overdraining due to SCS	1.6	38.1
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
14	1.15E-09	2.90E-03	%SO	RCS Overdraining due to SCS	1.6	39.7
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	LPSD-L2-DCOOL-YES	Debris in cavity covered by water and cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Table 19.1-135 (9 of 53)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
15	1.03E-09	2.90E-03	%SO	RCS Overdraining due to SCS	1.5	41.2
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.90E-01	SISPP-LPSD-L2-E2-NOT	Core debris does not plug screens (LPSD Level 2, POS 3A)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Table 19.1-135 (10 of 53)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
16	9.34E-10	2.90E-03	%SO	RCS Overdraining due to SCS	1.3	42.5
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
17	7.43E-10	1.60E-01	%SL1	Small LOCA at Reduced Inventory	1.1	43.6
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		2.72E-03	HR-FB-JLP05-02	Operator Fails to Feed during JL POS 5 w/makeup failed		
		7.18E-04	HR-MI-JLP05	Operator Fails to Isolate and Makeup JL at POS 5		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		1.93E+01	COMBINATION_20-LP	HEP dependency factor for HR-MI-JLP05,HR-FB-JLP05-02		

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Table 19.1-135 (11 of 53)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
18	6.70E-10	2.90E-03	%SO	RCS Overdraining due to SCS	1.0	44.6
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		3.49E-04	HR-FB-SOP05-01	Operator Fails to Feed during SO POS 5 w/makeup established		
		6.76E-03	HR-RS-SOP05	Operator Fails to Restore SCS during SO POS 5		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		2.14E-02	LPSD-L2-NOPAR	PARS fail to control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		1.75E+05	COMBINATION_730-LP	HEP dependency factor for HR-RS-SOP05,HR-FB-SOP05-01,HR-FB-SAMG,IWOPH-S-CFS		
19	5.65E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.8	45.4
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		3.49E-04	HR-FB-SLP05-01	Operator Fails to Feed during SL POS 5 w/makeup established		
		6.76E-03	HR-RS-SLP05	Operator Fails to Restore SCS during SL POS 5		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		1.75E+05	COMBINATION_734-LP	HEP dependency factor for HR-RS-SLP05,HR-FB-SLP05-01,HR-FB-SAMG,IWOPH-S-CFS		

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Table 19.1-135 (12 of 53)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
20	5.34E-10	1.40E-01	%S1	Loss of SCS (S1)	0.8	46.1
		4.01E-03	BE-RATE-P06	Conversion factor (SD-yr -> Calendar yr) for POS6 duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
21	5.30E-10	3.50E-02	%SL2	Small LOCA above Reduced Inventory	0.8	46.9
		4.01E-03	BE-RATE-P06	Conversion factor (SD-yr -> Calendar yr) for POS6 duration		
		2.72E-03	HR-FB-JLP06-02	Operator Fails to Feed during JL POS 6 w/makeup failed		
		7.18E-04	HR-MI-JLP06	Operator Fails to Isolate and Makeup JL at POS 6		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		1.93E+01	COMBINATION_27-LP	HEP dependency factor for HR-MI-JLP06,HR-FB-JLP06-02		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
22	5.08E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.7	47.6
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		3.49E-04	HR-FB-SLP05-01	Operator Fails to Feed during SL POS 5 w/makeup established		
		6.76E-03	HR-RS-SLP05	Operator Fails to Restore SCS during SL POS 5		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCFH2BRUP	Late contmt failure due to late H2 burn		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		1.75E+05	COMBINATION_734-LP	HEP dependency factor for HR-RS-SLP05,HR-FB-SLP05-01,HR-FB-SAMG,IWOPH-S-CFS		
23	4.81E-10	1.40E-01	%S1	Loss of SCS (S1)	0.7	48.3
		4.01E-03	BE-RATE-P06	Conversion factor (SD-yr -> Calendar yr) for POS6 duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		1.00E-01	LPSD-L2-LCFH2BRUP	Late contmt failure due to late H2 burn		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		

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Table 19.1-135 (14 of 53)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
24	4.02E-10	2.90E-03	%SO	RCS Overdraining due to SCS	0.6	48.9
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		2.14E-02	LPSD-L2-NOPAR	PARS fail to control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
25	3.59E-10	2.90E-03	%SO	RCS Overdraining due to SCS	0.5	49.4
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		5.37E-04	HR-FB-SOP11-02	Operator Fails to Feed during SO POS 11 w/makeup failed		
		7.18E-04	HR-MI-SOP11	Operator Fails to Isolate and Makeup SO at POS 11		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.90E-01	SISPP-LPSD-L2-E2-NOT	Core debris does not plug screens (LPSD Level 2, POS 3A)		
		1.14E+05	COMBINATION_729-LP	HEP dependency factor for HR-MI-SOP11,HR-FB-SOP11-02,HR-FB-SAMG,IWOPH-S-CFS		

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Table 19.1-135 (15 of 53)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
26	3.40E-10	2.90E-03	%SO	RCS Overdraining due to SCS	0.5	49.9
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		2.72E-03	HR-FB-SOP05-02	Operator Fails to Feed during SO POS 5 w/makeup failed		
		7.18E-04	HR-MI-SOP05	Operator Fails to Isolate and Makeup SO at POS 5		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		2.34E+04	COMBINATION_731-LP	HEP dependency factor for HR-MI-SOP05,HR-FB-SOP05-02,HR-FB-SAMG,IWOPH-S-CFS		
27	3.39E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.5	50.3
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		

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Table 19.1-135 (16 of 53)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
28	3.23E-10	2.90E-03	%SO	RCS Overdraining due to SCS	0.5	50.8
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		5.37E-04	HR-FB-SOP11-02	Operator Fails to Feed during SO POS 11 w/makeup failed		
		7.18E-04	HR-MI-SOP11	Operator Fails to Isolate and Makeup SO at POS 11		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCFH2BRUP	Late contmt failure due to late H2 burn		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.90E-01	SISPP-LPSD-L2-E2-NOT	Core debris does not plug screens (LPSD Level 2, POS 3A)		
		1.14E+05	COMBINATION_729-LP	HEP dependency factor for HR-MI-SOP11,HR-FB- SOP11-02,HR-FB-SAMG,IWOPH-S-CFS		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
29	3.14E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.4	51.2
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		3.49E-04	HR-FB-SLP05-01	Operator Fails to Feed during SL POS 5 w/makeup established		
		6.76E-03	HR-RS-SLP05	Operator Fails to Restore SCS during SL POS 5		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		2.55E+03	COMBINATION_620-LP	HEP dependency factor for HR-RS-SLP05,HR-FB-SLP05-01,HR-FB-SAMG		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
30	3.14E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.4	51.7
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		3.49E-04	HR-FB-SLP05-01	Operator Fails to Feed during SL POS 5 w/makeup established		
		6.76E-03	HR-RS-SLP05	Operator Fails to Restore SCS during SL POS 5		
		5.00E-01	LPSD-L2-DCOOL-YES	Debris in cavity covered by water and cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		2.55E+03	COMBINATION_620-LP	HEP dependency factor for HR-RS-SLP05,HR-FB-SLP05-01,HR-FB-SAMG		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
31	3.13E-10	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.4	52.1
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		5.37E-04	HR-FB-JLP05-01	Operator Fails to Feed during JL POS 5 w/makeup established		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		6.76E-03	HR-RS-JLP05	Operator Fails to Restore SCS during JL POS 5		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		1.14E+05	COMBINATION_742-LP	HEP dependency factor for HR-RS-JLP05,HR-FB-JLP05-01,HR-FB-SAMG,IWOPH-S-CFS		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
32	3.06E-10	2.90E-03	%SO	RCS Overdraining due to SCS	0.4	52.6
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		2.72E-03	HR-FB-SOP05-02	Operator Fails to Feed during SO POS 5 w/makeup failed		
		7.18E-04	HR-MI-SOP05	Operator Fails to Isolate and Makeup SO at POS 5		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCFH2BRUP	Late contmt failure due to late H2 burn		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		2.34E+04	COMBINATION_731-LP	HEP dependency factor for HR-MI-SOP05,HR-FB-SOP05-02,HR-FB-SAMG,IWOPH-S-CFS		
33	3.05E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.4	53.0
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		1.00E-01	LPSD-L2-LCFH2BRUP	Late contmt failure due to late H2 burn		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		

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Table 19.1-135 (21 of 53)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
34	2.81E-10	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.4	53.4
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		5.37E-04	HR-FB-JLP05-01	Operator Fails to Feed during JL POS 5 w/makeup established		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		6.76E-03	HR-RS-JLP05	Operator Fails to Restore SCS during JL POS 5		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCFH2BRUP	Late contmt failure due to late H2 burn		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		1.14E+05	COMBINATION_742-LP	HEP dependency factor for HR-RS-JLP05,HR-FB-JLP05-01,HR-FB-SAMG,IWOPH-S-CFS		
35	2.67E-10	3.50E-02	%SL2	Small LOCA above Reduced Inventory	0.4	53.8
		6.26E-03	BE-RATE-P10	Conversion factor (SD-yr -> Calendar yr) for POS10 duration		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
36	2.40E-10	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.3	54.1
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
37	2.40E-10	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.3	54.5
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
38	2.36E-10	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.3	54.8
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
39	2.36E-10	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.3	55.2
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
40	2.30E-10	3.50E-02	%SL2	Small LOCA above Reduced Inventory	0.3	55.5
		6.26E-03	BE-RATE-P10	Conversion factor (SD-yr -> Calendar yr) for POS10 duration		
		5.37E-04	HR-FB-JLP10-01	Operator Fails to Feed during JL POS 10 w/makeup established		
		2.08E-03	HR-RS-JLP10	Operator Fails to Restore SCS during JL POS 10		
		1.00E-02	SISPP-LPSD-L2-E2	Sump plugs for POSs 3A analysis (Level 2)		
		9.41E+01	COMBINATION_16-LP	HEP dependency factor for HR-RS-JLP10,HR-FB-JLP10-01		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
41	2.19E-10	5.00E-03	%JL	Unrecoverable LOCA	0.3	55.8
		4.01E-03	BE-RATE-P06	Conversion factor (SD-yr -> Calendar yr) for POS6 duration		
		2.72E-03	HR-FB-JLP06-01	Operator Fails to Feed during JL POS 6 w/makeup established		
		2.08E-03	HR-RS-JLP06	Operator Fails to Restore SCS during JL POS 6		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		1.93E+01	COMBINATION_26-LP	HEP dependency factor for HR-RS-JLP06,HR-FB-JLP06-01		
42	2.13E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.3	56.1
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
43	2.13E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.3	56.4
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		5.00E-01	LPSD-L2-DCOOL-YES	Debris in cavity covered by water and cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
44	2.13E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.3	56.7
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
45	2.13E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.3	57.0
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	LPSD-L2-DCOOL-YES	Debris in cavity covered by water and cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Table 19.1-135 (25 of 53)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
46	2.10E-10	5.00E-03	%JL	Unrecoverable LOCA	0.3	57.3
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		5.37E-04	HR-FB-JLP05-01	Operator Fails to Feed during JL POS 5 w/makeup established		
		6.76E-03	HR-RS-JLP05	Operator Fails to Restore SCS during JL POS 5		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		9.41E+01	COMBINATION_19-LP	HEP dependency factor for HR-RS-JLP05,HR-FB-JLP05-01		
47	1.98E-10	1.40E-01	%S1	Loss of SCS (S1)	0.3	57.6
		1.49E-03	BE-RATE-P4B	Conversion factor (SD-yr -> Calendar yr) for POS4B duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
48	1.89E-10	3.50E-02	%SL2	Small LOCA above Reduced Inventory	0.3	57.9
		1.49E-03	BE-RATE-P4B	Conversion factor (SD-yr -> Calendar yr) for POS4B duration		
		5.37E-04	HR-FB-JLP04B-02	Operator Fails to Feed during JL POS 4B w/makeup failed		
		7.18E-04	HR-MI-JLP04B	Operator Fails to Isolate and Makeup JL at POS 4B		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		9.41E+01	COMBINATION_49-LP	HEP dependency factor for HR-MI-JLP04B,HR-FB-JLP04B-02		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
49	1.89E-10	2.90E-03	%SO	RCS Overdraining due to SCS	0.3	58.1
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		2.72E-03	HR-FB-SOP05-02	Operator Fails to Feed during SO POS 5 w/makeup failed		
		7.18E-04	HR-MI-SOP05	Operator Fails to Isolate and Makeup SO at POS 5		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		3.41E+02	COMBINATION_617-LP	HEP dependency factor for HR-MI-SOP05,HR-FB- SOP05-02,HR-FB-SAMG		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
50	1.89E-10	2.90E-03	%SO	RCS Overdraining due to SCS	0.3	58.4
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		2.72E-03	HR-FB-SOP05-02	Operator Fails to Feed during SO POS 5 w/makeup failed		
		7.18E-04	HR-MI-SOP05	Operator Fails to Isolate and Makeup SO at POS 5		
		5.00E-01	LPSD-L2-DCOOL-YES	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		3.41E+02	COMBINATION_617-LP	HEP dependency factor for HR-MI-SOP05,HR-FB- SOP05-02,HR-FB-SAMG		
51	1.88E-10	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.3	58.7
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Table 19.1-135 (28 of 53)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
52	1.87E-10	2.90E-03	%SO	RCS Overdraining due to SCS	0.3	58.9
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		3.49E-04	HR-FB-SOP11-01	Operator Fails to Feed during SO POS 11 w/makeup established		
		5.76E-03	HR-RS-SOP11	Operator Fails to Restore SCS during SO POS 11		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.90E-01	SISPP-LPSD-L2-E2-NOT	Core debris does not plug screens (LPSD Level 2, POS 3A)		
		1.14E+04	COMBINATION_728-LP	HEP dependency factor for HR-RS-SOP11,HR-FB-SOP11-01,HR-FB-SAMG,IWOPH-S-CFS		
53	1.87E-10	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.3	59.2
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		

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Table 19.1-135 (29 of 53)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
54	1.84E-10	2.90E-03	%SO	RCS Overdraining due to SCS	0.3	59.5
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.20E-06	PPSO-OS-PPS	CCF OF PPS OPERATING SYSTEM SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
55	1.79E-10	1.40E-01	%S1	Loss of SCS (S1)	0.3	59.7
		1.49E-03	BE-RATE-P4B	Conversion factor (SD-yr -> Calendar yr) for POS4B duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		1.00E-01	LPSD-L2-LCFH2BRUP	Late contmt failure due to late H2 burn		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
56	1.72E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.2	60.0
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
57	1.71E-10	3.50E-02	%SL2	Small LOCA above Reduced Inventory	0.2	60.2
		4.01E-03	BE-RATE-P06	Conversion factor (SD-yr -> Calendar yr) for POS6 duration		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
58	1.71E-10	3.50E-02	%SL2	Small LOCA above Reduced Inventory	0.2	60.4
		4.01E-03	BE-RATE-P06	Conversion factor (SD-yr -> Calendar yr) for POS6 duration		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Table 19.1-135 (31 of 53)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
59	1.69E-10	2.90E-03	%SO	RCS Overdraining due to SCS	0.2	60.7
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		3.49E-04	HR-FB-SOP11-01	Operator Fails to Feed during SO POS 11 w/makeup established		
		5.76E-03	HR-RS-SOP11	Operator Fails to Restore SCS during SO POS 11		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCFH2BRUP	Late contmt failure due to late H2 burn		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.90E-01	SISPP-LPSD-L2-E2-NOT	Core debris does not plug screens (LPSD Level 2, POS 3A)		
		1.14E+04	COMBINATION_728-LP	HEP dependency factor for HR-RS-SOP11,HR-FB-SOP11-01,HR-FB-SAMG,IWOPH-S-CFS		
60	1.68E-10	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.2	60.9
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		1.00E-01	LPSD-L2-LCFH2BRUP	Late contmt failure due to late H2 burn		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		

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Table 19.1-135 (32 of 53)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
61	1.68E-10	3.50E-02	%SL2	Small LOCA above Reduced Inventory	0.2	61.2
		4.01E-03	BE-RATE-P06	Conversion factor (SD-yr -> Calendar yr) for POS6 duration		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
62	1.68E-10	3.50E-02	%SL2	Small LOCA above Reduced Inventory	0.2	61.4
		4.01E-03	BE-RATE-P06	Conversion factor (SD-yr -> Calendar yr) for POS6 duration		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
63	1.67E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.2	61.6
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Table 19.1-135 (33 of 53)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
64	1.67E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.2	61.9
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	LPSD-L2-DCOOL-YES	Debris in cavity covered by water and cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
65	1.66E-10	2.90E-03	%SO	RCS Overdraining due to SCS	0.2	62.1
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		1.00E-01	LPSD-L2-LCFH2BRUP	Late contmt failure due to late H2 burn		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.20E-06	PPSO-OS-PPS	CCF OF PPS OPERATING SYSTEM SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		

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Table 19.1-135 (34 of 53)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
66	1.64E-10	1.40E-01	%S1	Loss of SCS (S1)	0.2	62.4
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
67	1.53E-10	2.90E-03	%SO	RCS Overdraining due to SCS	0.2	62.6
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		3.49E-04	HR-FB-SOP05-01	Operator Fails to Feed during SO POS 5 w/makeup established		
		6.76E-03	HR-RS-SOP05	Operator Fails to Restore SCS during SO POS 5		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		1.00E-02	LPSD-L2-LCFH2BRUPE	Late contmt failure due to late H2 burn - EARLY CS success and WET cavity		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		2.55E+03	COMBINATION_616-LP	HEP dependency factor for HR-RS-SOP05,HR-FB-SOP05-01,HR-FB-SAMG		

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Table 19.1-135 (35 of 53)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
68	1.49E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.2	62.8
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.90E-01	SISPP-LPSD-L2-E2-NOT	Core debris does not plug screens (LPSD Level 2, POS 3A)		
69	1.47E-10	1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING	0.2	63.0
		1.40E-01	%S1	Loss of SCS (S1)		
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		1.00E-01	LPSD-L2-LCFH2BRUP	Late contmt failure due to late H2 burn		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE PR _{rob}	Basic Event	Cutset Description	Cutset	Cumulative
70	1.47E-10	3.67E-02	%LPWE	Loss of offsite power of Weather-related for LPSD	0.2	63.2
		6.26E-03	BE-RATE-P10	Conversion factor (SD-yr -> Calendar yr) for POS10 duration		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		2.73E-05	PFHBWQ4-SW2OUAT	4/4 CCF OF PCB BETWEEN UAT & 4.16KV SW01A/1B/1C/1D FAIL TO OPEN		
		4.78E-01	RAC-LXP10-AC-WE	Recovery Offsite Power within 3.0hr at SBO POS10 AC WE		
71	1.47E-10	3.67E-02	%LPWE	Loss of offsite power of Weather-related for LPSD	0.2	63.4
		6.26E-03	BE-RATE-P10	Conversion factor (SD-yr -> Calendar yr) for POS10 duration		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	LPSD-L2-DCOOL-YES	Debris in cavity covered by water and cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		2.73E-05	PFHBWQ4-SW2OUAT	4/4 CCF OF PCB BETWEEN UAT & 4.16KV SW01A/1B/1C/1D FAIL TO OPEN		
		4.78E-01	RAC-LXP10-AC-WE	Recovery Offsite Power within 3.0hr at SBO POS10 AC WE		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
72	1.41E-10	2.90E-03	%SO	RCS Overdraining due to SCS	0.2	63.6
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		6.07E-03	H-CI-OPEN	Operator Fails to Recovery CIS Valve by Local Manual Operation		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
73	1.34E-10	3.50E-02	%KV	Loss of Class 1E 4.16KV	0.2	63.8
		4.01E-03	BE-RATE-P06	Conversion factor (SD-yr -> Calendar yr) for POS6 duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
74	1.34E-10	3.50E-02	%SL2	Small LOCA above Reduced Inventory	0.2	64.0
		4.01E-03	BE-RATE-P06	Conversion factor (SD-yr -> Calendar yr) for POS6 duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
75	1.31E-10	3.67E-02	%LPWE	Loss of offsite power of Weather-related for LPSD	0.2	64.2
		6.26E-03	BE-RATE-P10	Conversion factor (SD-yr -> Calendar yr) for POS10 duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		2.73E-05	PFHBWQ4-SW2OUAT	4/4 CCF OF PCB BETWEEN UAT & 4.16KV SW01A/1B/1C/1D FAIL TO OPEN		
		4.78E-01	RAC-LXP10-AC-WE	Recovery Offsite Power within 3.0hr at SBO POS10 AC WE		
		9.90E-01	SISPP-LPSD-L2-E2-NOT	Core debris does not plug screens (LPSD Level 2, POS 3A)		

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Table 19.1-135 (39 of 53)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
76	1.24E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.2	64.4
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		3.49E-04	HR-FB-SLP05-01	Operator Fails to Feed during SL POS 5 w/makeup established		
		6.76E-03	HR-RS-SLP05	Operator Fails to Restore SCS during SL POS 5		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		2.14E-02	LPSD-L2-NOPAR	PARS fail to control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		1.75E+05	COMBINATION_734-LP	HEP dependency factor for HR-RS-SLP05,HR-FB-SLP05-01,HR-FB-SAMG,IWOPH-S-CFS		
77	1.20E-10	3.50E-02	%KV	Loss of Class 1E 4.16KV	0.2	64.5
		4.01E-03	BE-RATE-P06	Conversion factor (SD-yr -> Calendar yr) for POS6 duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		1.00E-01	LPSD-L2-LCFH2BRUP	Late contmt failure due to late H2 burn		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		

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Table 19.1-135 (40 of 53)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
78	1.20E-10	3.50E-02	%SL2	Small LOCA above Reduced Inventory	0.2	64.7
		4.01E-03	BE-RATE-P06	Conversion factor (SD-yr -> Calendar yr) for POS6 duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		1.00E-01	LPSD-L2-LCFH2BRUP	Late contmt failure due to late H2 burn		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
79	1.18E-10	3.50E-02	%SL2	Small LOCA above Reduced Inventory	0.2	64.9
		6.26E-03	BE-RATE-P10	Conversion factor (SD-yr -> Calendar yr) for POS10 duration		
		5.37E-04	HR-FB-JLP10-01	Operator Fails to Feed during JL POS 10 w/makeup established		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		2.08E-03	HR-RS-JLP10	Operator Fails to Restore SCS during JL POS 10		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.90E-01	SISPP-LPSD-L2-E2-NOT	Core debris does not plug screens (LPSD Level 2, POS 3A)		
		1.14E+05	COMBINATION_739-LP	HEP dependency factor for HR-RS-JLP10,HR-FB-JLP10-01,HR-FB-SAMG,IWOPH-S-CFS		

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Table 19.1-135 (41 of 53)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
80	1.17E-10	1.40E-01	%S1	Loss of SCS (S1)	0.2	65.0
		4.01E-03	BE-RATE-P06	Conversion factor (SD-yr -> Calendar yr) for POS6 duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		2.14E-02	LPSD-L2-NOPAR	PARS fail to control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
81	1.17E-10	1.40E-01	%S1	Loss of SCS (S1)	0.2	65.2
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		3.49E-04	HR-FB-S1P05	Operator Fails to Feed during S1 POS 5		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		4.18E-01	HR-RS-S1P05	Operator Fails to Restore SCS during S1 POS 5		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		1.21E+03	COMBINATION_744-LP	HEP dependency factor for HR-RS-S1P05,HR-FB-S1P05,HR-FB-SAMG,IWOPH-S-CFS		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
82	1.16E-10	3.50E-02	%SL2	Small LOCA above Reduced Inventory	0.2	65.4
		6.26E-03	BE-RATE-P10	Conversion factor (SD-yr -> Calendar yr) for POS10 duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.90E-01	SISPP-LPSD-L2-E2-NOT	Core debris does not plug screens (LPSD Level 2, POS 3A)		
83	1.15E-10	1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING	0.2	65.5
		2.90E-03	%SO	RCS Overdraining due to SCS		
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.00E-02	SISPP-LPSD-L2-E2	Sump plugs for POSs 3A analysis (Level 2)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
84	1.15E-10	2.90E-03	%SO	RCS Overdraining due to SCS	0.2	65.7
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		5.00E-01	LPSD-L2-DCOOL-YES	Debris in cavity covered by water and cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.00E-02	SISPP-LPSD-L2-E2	Sump plugs for POSs 3A analysis (Level 2)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
85	1.08E-10	3.50E-02	%SL2	Small LOCA above Reduced Inventory	0.2	65.8
		4.01E-03	BE-RATE-P06	Conversion factor (SD-yr -> Calendar yr) for POS6 duration		
		2.72E-03	HR-FB-JLP06-01	Operator Fails to Feed during JL POS 6 w/makeup established		
		2.83E-03	SIMPR1B-SCPP01B	FAILS TO RUN SC PUMP 2 PP01B		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		

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Table 19.1-135 (44 of 53)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
86	1.06E-10	3.50E-02	%SL2	Small LOCA above Reduced Inventory	0.2	66.0
		6.26E-03	BE-RATE-P10	Conversion factor (SD-yr -> Calendar yr) for POS10 duration		
		5.37E-04	HR-FB-JLP10-01	Operator Fails to Feed during JL POS 10 w/makeup established		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		2.08E-03	HR-RS-JLP10	Operator Fails to Restore SCS during JL POS 10		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCFH2BRUP	Late contmt failure due to late H2 burn		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.90E-01	SISPP-LPSD-L2-E2-NOT	Core debris does not plug screens (LPSD Level 2, POS 3A)		
		1.14E+05	COMBINATION_739-LP	HEP dependency factor for HR-RS-JLP10,HR-FB-JLP10-01,HR-FB-SAMG,IWOPH-S-CFS		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
87	1.05E-10	1.40E-01	%S1	Loss of SCS (S1)	0.1	66.1
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		3.49E-04	HR-FB-S1P05	Operator Fails to Feed during S1 POS 5		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		4.18E-01	HR-RS-S1P05	Operator Fails to Restore SCS during S1 POS 5		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCFH2BRUP	Late contmt failure due to late H2 burn		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		1.21E+03	COMBINATION_744-LP	HEP dependency factor for HR-RS-S1P05,HR-FB-S1P05,HR-FB-SAMG,IWOPH-S-CFS		

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Table 19.1-135 (46 of 53)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
88	9.50E-11	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.1	66.3
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Table 19.1-135 (47 of 53)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
89	9.24E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.1	66.4
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		1.00E-02	LPSD-L2-LCFH2BRUPE	Late contmt failure due to late H2 burn - EARLY CS success and WET cavity		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.90E-01	SISPP-LPSD-L2-E2-NOT	Core debris does not plug screens (LPSD Level 2, POS 3A)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Table 19.1-135 (48 of 53)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
90	8.88E-11	3.67E-02	%LPWE	Loss of offsite power of Weather-related for LPSD	0.1	66.5
		6.26E-03	BE-RATE-P10	Conversion factor (SD-yr -> Calendar yr) for POS10 duration		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.65E-05	PFHBWQ3-SW2OUATABD	3/4 CCF OF PCB BETWEEN UAT & 4.16KV SW01A/1B/1D FAIL TO OPEN		
		4.78E-01	RAC-LXP10-AC-WE	Recovery Offsite Power within 3.0hr at SBO POS10 AC WE		
91	8.88E-11	3.67E-02	%LPWE	Loss of offsite power of Weather-related for LPSD	0.1	66.7
		6.26E-03	BE-RATE-P10	Conversion factor (SD-yr -> Calendar yr) for POS10 duration		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	LPSD-L2-DCOOL-YES	Debris in cavity covered by water and cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.65E-05	PFHBWQ3-SW2OUATABD	3/4 CCF OF PCB BETWEEN UAT & 4.16KV SW01A/1B/1D FAIL TO OPEN		
		4.78E-01	RAC-LXP10-AC-WE	Recovery Offsite Power within 3.0hr at SBO POS10 AC WE		

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Table 19.1-135 (49 of 53)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
92	8.49E-11	1.40E-01	%S1	Loss of SCS (S1)	0.1	66.8
		6.26E-03	BE-RATE-P10	Conversion factor (SD-yr -> Calendar yr) for POS10 duration		
		3.49E-04	HR-FB-S1P10	Operator Fails to Feed during S1 POS 10		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		3.17E-04	HR-RS-S1P10	Operator Fails to Restore SCS during S1 POS 10		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.90E-01	SISPP-LPSD-L2-E2-NOT	Core debris does not plug screens (LPSD Level 2, POS 3A)		
		2.07E+05	COMBINATION_732-LP	HEP dependency factor for HR-RS-S1P10,HR-FB-S1P10,HR-FB-SAMG,IWOPH-S-CFS		

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Table 19.1-135 (50 of 53)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
93	8.40E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.1	66.9
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		1.00E-02	LPSD-L2-LCFH2BRUPE	Late contmt failure due to late H2 burn - EARLY CS success and WET cavity		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
94	8.39E-11	2.20E-02	%S2	Loss of SCS (S2)	0.1	67.0
		4.01E-03	BE-RATE-P06	Conversion factor (SD-yr -> Calendar yr) for POS6 duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		

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Table 19.1-135 (51 of 53)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
95	8.21E-11	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.1	67.1
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.90E-01	SISPP-LPSD-L2-E2-NOT	Core debris does not plug screens (LPSD Level 2, POS 3A)		
96	8.01E-11	1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING	0.1	67.3
		6.39E-02	%LPSW	Loss of offsite power of Switchyard-centered for LPSD		
		6.26E-03	BE-RATE-P10	Conversion factor (SD-yr -> Calendar yr) for POS10 duration		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		2.73E-05	PFHBWQ4-SW2OUAT	4/4 CCF OF PCB BETWEEN UAT & 4.16KV SW01A/1B/1C/1D FAIL TO OPEN		
		1.50E-01	RAC-LXP10-AC-SW	Recovery Offsite Power within 3.0hr at SBO POS10 AC SW		

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Table 19.1-135 (52 of 53)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
97	8.01E-11	6.39E-02	%LPSW	Loss of offsite power of Switchyard-centered for LPSD	0.1	67.4
		6.26E-03	BE-RATE-P10	Conversion factor (SD-yr -> Calendar yr) for POS10 duration		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	LPSD-L2-DCOOL-YES	Debris in cavity covered by water and cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		2.73E-05	PFHBWQ4-SW2OUAT	4/4 CCF OF PCB BETWEEN UAT & 4.16KV SW01A/1B/1C/1D FAIL TO OPEN		
98	7.95E-11	1.50E-01	RAC-LXP10-AC-SW	Recovery Offsite Power within 3.0hr at SBO POS10 AC SW	0.1	67.5
		3.50E-02	%SL2	Small LOCA above Reduced Inventory		
		6.26E-03	BE-RATE-P10	Conversion factor (SD-yr -> Calendar yr) for POS10 duration		
		5.37E-04	HR-FB-JLP10-02	Operator Fails to Feed during JL POS 10 w/makeup failed		
		7.18E-04	HR-MI-JLP10	Operator Fails to Isolate and Makeup JL at POS 10		
		1.00E-02	SISPP-LPSD-L2-E2	Sump plugs for POSs 3A analysis (Level 2)		
		9.41E+01	COMBINATION_17-LP	HEP dependency factor for HR-MI-JLP10,HR-FB-JLP10-02		

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Table 19.1-135 (53 of 53)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
99	7.91E-11	3.67E-02	%LPWE	Loss of offsite power of Weather-related for LPSD	0.1	67.6
		6.26E-03	BE-RATE-P10	Conversion factor (SD-yr -> Calendar yr) for POS10 duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.65E-05	PFHBWQ3-SW2OUATABD	3/4 CCF OF PCB BETWEEN UAT & 4.16KV SW01A/1B/1D FAIL TO OPEN		
		4.78E-01	RAC-LXP10-AC-WE	Recovery Offsite Power within 3.0hr at SBO POS10 AC WE		
		9.90E-01	SISPP-LPSD-L2-E2-NOT	Core debris does not plug screens (LPSD Level 2, POS 3A)		
100	7.86E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.1	67.7
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		5.37E-04	HR-FB-SOP11-02	Operator Fails to Feed during SO POS 11 w/makeup failed		
		7.18E-04	HR-MI-SOP11	Operator Fails to Isolate and Makeup SO at POS 11		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		2.14E-02	LPSD-L2-NOPAR	PARS fail to control hydrogen in containment		
		9.90E-01	SISPP-LPSD-L2-E2-NOT	Core debris does not plug screens (LPSD Level 2, POS 3A)		
		1.14E+05	COMBINATION_729-LP	HEP dependency factor for HR-MI-SOP11,HR-FB-SOP11-02,HR-FB-SAMG,IWOPH-S-CFS		

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Table 19.1-136 (1 of 52)

LPSD Internal Events PRA Top 100 Cutsets (LRF) – Reduced Inventory

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
1	6.72E-09	1.60E-01	%SL1	Small LOCA at Reduced Inventory	14.2	14.2
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		5.37E-04	HR-FB-JLP05-01	Operator Fails to Feed during JL POS 5 w/makeup established		
		6.76E-03	HR-RS-JLP05	Operator Fails to Restore SCS during JL POS 5		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		9.41E+01	COMBINATION_19-LP	HEP dependency factor for HR-RS-JLP05,HR-FB-JLP05-01		
2	3.06E-09	2.90E-03	%SO	RCS Overdraining due to SCS	6.5	20.7
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		3.49E-04	HR-FB-SOP05-01	Operator Fails to Feed during SO POS 5 w/makeup established		
		6.76E-03	HR-RS-SOP05	Operator Fails to Restore SCS during SO POS 5		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		1.75E+05	COMBINATION_730-LP	HEP dependency factor for HR-RS-SOP05,HR-FB-SOP05-01,HR-FB-SAMG,IWOPH-S-CFS		

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Table 19.1-136 (2 of 52)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
3	2.76E-09	2.90E-03	%SO	RCS Overdraining due to SCS	5.8	26.5
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		3.49E-04	HR-FB-SOP05-01	Operator Fails to Feed during SO POS 5 w/makeup established		
		6.76E-03	HR-RS-SOP05	Operator Fails to Restore SCS during SO POS 5		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCFH2BRUP	Late contmt failure due to late H2 burn		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		1.75E+05	COMBINATION_730-LP	HEP dependency factor for HR-RS-SOP05,HR-FB-SOP05-01,HR-FB-SAMG,IWOPH-S-CFS		
4	1.84E-09	2.90E-03	%SO	RCS Overdraining due to SCS	3.9	30.4
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		

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Table 19.1-136 (3 of 52)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
5	1.70E-09	2.90E-03	%SO	RCS Overdraining due to SCS	3.6	34.0
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		3.49E-04	HR-FB-SOP05-01	Operator Fails to Feed during SO POS 5 w/makeup established		
		6.76E-03	HR-RS-SOP05	Operator Fails to Restore SCS during SO POS 5		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		2.55E+03	COMBINATION_616-LP	HEP dependency factor for HR-RS-SOP05,HR-FB-SOP05-01,HR-FB-SAMG		

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Table 19.1-136 (4 of 52)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
6	1.70E-09	2.90E-03	%SO	RCS Overdraining due to SCS	3.6	37.6
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		3.49E-04	HR-FB-SOP05-01	Operator Fails to Feed during SO POS 5 w/makeup established		
		6.76E-03	HR-RS-SOP05	Operator Fails to Restore SCS during SO POS 5		
		5.00E-01	LPSD-L2-DCOOL-YES	Debris in cavity covered by water and cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		2.55E+03	COMBINATION_616-LP	HEP dependency factor for HR-RS-SOP05,HR-FB-SOP05-01,HR-FB-SAMG		
7	1.66E-09	2.90E-03	%SO	RCS Overdraining due to SCS	3.5	41.1
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		1.00E-01	LPSD-L2-LCFH2BRUP	Late contmt failure due to late H2 burn		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		

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Table 19.1-136 (5 of 52)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
8	1.15E-09	2.90E-03	%SO	RCS Overdraining due to SCS	2.4	43.5
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
9	1.15E-09	2.90E-03	%SO	RCS Overdraining due to SCS	2.4	45.9
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	LPSD-L2-DCOOL-YES	Debris in cavity covered by water and cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Table 19.1-136 (6 of 52)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
10	1.15E-09	2.90E-03	%SO	RCS Overdraining due to SCS	2.4	48.4
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
11	1.15E-09	2.90E-03	%SO	RCS Overdraining due to SCS	2.4	50.8
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		5.00E-01	LPSD-L2-DCOOL-YES	Debris in cavity covered by water and cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Table 19.1-136 (7 of 52)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
12	1.15E-09	2.90E-03	%SO	RCS Overdraining due to SCS	2.4	53.2
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
13	1.15E-09	2.90E-03	%SO	RCS Overdraining due to SCS	2.4	55.7
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	LPSD-L2-DCOOL-YES	Debris in cavity covered by water and cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Table 19.1-136 (8 of 52)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
14	1.03E-09	2.90E-03	%SO	RCS Overdraining due to SCS	2.2	57.8
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.90E-01	SISPP-LPSD-L2-E2-NOT	Core debris does not plug screens (LPSD Level 2, POS 3A)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
15	9.34E-10	2.90E-03	%SO	RCS Overdraining due to SCS	2.0	59.8
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Table 19.1-136 (9 of 52)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
16	7.43E-10	1.60E-01	%SL1	Small LOCA at Reduced Inventory	1.6	61.4
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		2.72E-03	HR-FB-JLP05-02	Operator Fails to Feed during JL POS 5 w/makeup failed		
		7.18E-04	HR-MI-JLP05	Operator Fails to Isolate and Makeup JL at POS 5		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		1.93E+01	COMBINATION_20-LP	HEP dependency factor for HR-MI-JLP05,HR-FB-JLP05-02		
17	6.70E-10	2.90E-03	%SO	RCS Overdraining due to SCS	1.4	62.8
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		3.49E-04	HR-FB-SOP05-01	Operator Fails to Feed during SO POS 5 w/makeup established		
		6.76E-03	HR-RS-SOP05	Operator Fails to Restore SCS during SO POS 5		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		2.14E-02	LPSD-L2-NOPAR	PARS fail to control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		1.75E+05	COMBINATION_730-LP	HEP dependency factor for HR-RS-SOP05,HR-FB-SOP05-01,HR-FB-SAMG,IWOPH-S-CFS		

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Table 19.1-136 (10 of 52)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
18	5.65E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	1.2	64.0
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		3.49E-04	HR-FB-SLP05-01	Operator Fails to Feed during SL POS 5 w/makeup established		
		6.76E-03	HR-RS-SLP05	Operator Fails to Restore SCS during SL POS 5		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		1.75E+05	COMBINATION_734-LP	HEP dependency factor for HR-RS-SLP05,HR-FB-SLP05-01,HR-FB-SAMG,IWOPH-S-CFS		

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Table 19.1-136 (11 of 52)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
19	5.08E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	1.1	65.1
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		3.49E-04	HR-FB-SLP05-01	Operator Fails to Feed during SL POS 5 w/makeup established		
		6.76E-03	HR-RS-SLP05	Operator Fails to Restore SCS during SL POS 5		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCFH2BRUP	Late contmt failure due to late H2 burn		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		1.75E+05	COMBINATION_734-LP	HEP dependency factor for HR-RS-SLP05,HR-FB-SLP05-01,HR-FB-SAMG,IWOPH-S-CFS		
20	4.02E-10	2.90E-03	%SO	RCS Overdraining due to SCS	0.9	65.9
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		2.14E-02	LPSD-L2-NOPAR	PARS fail to control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		

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Table 19.1-136 (12 of 52)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
21	3.59E-10	2.90E-03	%SO	RCS Overdraining due to SCS	0.8	66.7
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		5.37E-04	HR-FB-SOP11-02	Operator Fails to Feed during SO POS 11 w/makeup failed		
		7.18E-04	HR-MI-SOP11	Operator Fails to Isolate and Makeup SO at POS 11		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.90E-01	SISPP-LPSD-L2-E2-NOT	Core debris does not plug screens (LPSD Level 2, POS 3A)		
		1.14E+05	COMBINATION_729-LP	HEP dependency factor for HR-MI-SOP11,HR-FB-SOP11-02,HR-FB-SAMG,IWOPH-S-CFS		

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Table 19.1-136 (13 of 52)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
22	3.40E-10	2.90E-03	%SO	RCS Overdraining due to SCS	0.7	67.4
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		2.72E-03	HR-FB-SOP05-02	Operator Fails to Feed during SO POS 5 w/makeup failed		
		7.18E-04	HR-MI-SOP05	Operator Fails to Isolate and Makeup SO at POS 5		
		1.46E-02	WOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		2.34E+04	COMBINATION_731-LP	HEP dependency factor for HR-MI-SOP05,HR-FB-SOP05-02,HR-FB-SAMG,IWOPH-S-CFS		
23	3.39E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.7	68.1
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		

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Table 19.1-136 (14 of 52)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
24	3.23E-10	2.90E-03	%SO	RCS Overdraining due to SCS	0.7	68.8
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		5.37E-04	HR-FB-SOP11-02	Operator Fails to Feed during SO POS 11 w/makeup failed		
		7.18E-04	HR-MI-SOP11	Operator Fails to Isolate and Makeup SO at POS 11		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCFH2BRUP	Late contmt failure due to late H2 burn		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.90E-01	SISPP-LPSD-L2-E2-NOT	Core debris does not plug screens (LPSD Level 2, POS 3A)		
		1.14E+05	COMBINATION_729-LP	HEP dependency factor for HR-MI-SOP11,HR-FB-SOP11-02,HR-FB-SAMG,IWOPH-S-CFS		

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Table 19.1-136 (15 of 52)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
25	3.14E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.7	69.5
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		3.49E-04	HR-FB-SLP05-01	Operator Fails to Feed during SL POS 5 w/makeup established		
		6.76E-03	HR-RS-SLP05	Operator Fails to Restore SCS during SL POS 5		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		2.55E+03	COMBINATION_620-LP	HEP dependency factor for HR-RS-SLP05,HR-FB-SLP05-01,HR-FB-SAMG		
26	3.14E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.7	70.1
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		3.49E-04	HR-FB-SLP05-01	Operator Fails to Feed during SL POS 5 w/makeup established		
		6.76E-03	HR-RS-SLP05	Operator Fails to Restore SCS during SL POS 5		
		5.00E-01	LPSD-L2-DCOOL-YES	Debris in cavity covered by water and cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		2.55E+03	COMBINATION_620-LP	HEP dependency factor for HR-RS-SLP05,HR-FB-SLP05-01,HR-FB-SAMG		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
27	3.13E-10	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.7	70.8
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		5.37E-04	HR-FB-JLP05-01	Operator Fails to Feed during JL POS 5 w/makeup established		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		6.76E-03	HR-RS-JLP05	Operator Fails to Restore SCS during JL POS 5		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		1.14E+05	COMBINATION_742-LP	HEP dependency factor for HR-RS-JLP05,HR-FB-JLP05-01,HR-FB-SAMG,IWOPH-S-CFS		

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Table 19.1-136 (17 of 52)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
28	3.06E-10	2.90E-03	%SO	RCS Overdraining due to SCS	0.6	71.4
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		2.72E-03	HR-FB-SOP05-02	Operator Fails to Feed during SO POS 5 w/makeup failed		
		7.18E-04	HR-MI-SOP05	Operator Fails to Isolate and Makeup SO at POS 5		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCFH2BRUP	Late contmt failure due to late H2 burn		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		2.34E+04	COMBINATION_731-LP	HEP dependency factor for HR-MI-SOP05,HR-FB-SOP05-02,HR-FB-SAMG,IWOPH-S-CFS		
29	3.05E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.6	72.1
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		1.00E-01	LPSD-L2-LCFH2BRUP	Late contmt failure due to late H2 burn		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		

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Table 19.1-136 (18 of 52)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
30	2.81E-10	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.6	72.7
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		5.37E-04	HR-FB-JLP05-01	Operator Fails to Feed during JL POS 5 w/makeup established		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		6.76E-03	HR-RS-JLP05	Operator Fails to Restore SCS during JL POS 5		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCFH2BRUP	Late contmt failure due to late H2 burn		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		1.14E+05	COMBINATION_742-LP	HEP dependency factor for HR-RS-JLP05,HR-FB-JLP05-01,HR-FB-SAMG,IWOPH-S-CFS		
31	2.40E-10	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.5	73.2
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
32	2.40E-10	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.5	73.7
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Table 19.1-136 (19 of 52)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
33	2.36E-10	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.5	74.2
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
34	2.36E-10	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.5	74.7
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
35	2.13E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.4	75.1
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
36	2.13E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.4	75.6
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		5.00E-01	LPSD-L2-DCOOL-YES	Debris in cavity covered by water and cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
37	2.13E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.4	76.0
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
38	2.13E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.4	76.5
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	LPSD-L2-DCOOL-YES	Debris in cavity covered by water and cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Table 19.1-136 (21 of 52)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
39	2.10E-10	5.00E-03	%JL	Unrecoverable LOCA	0.4	76.9
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		5.37E-04	HR-FB-JLP05-01	Operator Fails to Feed during JL POS 5 w/makeup established		
		6.76E-03	HR-RS-JLP05	Operator Fails to Restore SCS during JL POS 5		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		9.41E+01	COMBINATION_19-LP	HEP dependency factor for HR-RS-JLP05,HR-FB-JLP05-01		
40	1.89E-10	2.90E-03	%SO	RCS Overdraining due to SCS	0.4	77.3
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		2.72E-03	HR-FB-SOP05-02	Operator Fails to Feed during SO POS 5 w/makeup failed		
		7.18E-04	HR-MI-SOP05	Operator Fails to Isolate and Makeup SO at POS 5		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		3.41E+02	COMBINATION_617-LP	HEP dependency factor for HR-MI-SOP05,HR-FB-SOP05-02,HR-FB-SAMG		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
41	1.89E-10	2.90E-03	%SO	RCS Overdraining due to SCS	0.4	77.7
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		2.72E-03	HR-FB-SOP05-02	Operator Fails to Feed during SO POS 5 w/makeup failed		
		7.18E-04	HR-MI-SOP05	Operator Fails to Isolate and Makeup SO at POS 5		
		5.00E-01	LPSD-L2-DCOOL-YES	Debris in cavity covered by water and cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		3.41E+02	COMBINATION_617-LP	HEP dependency factor for HR-MI-SOP05,HR-FB-SOP05-02,HR-FB-SAMG		
42	1.88E-10	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.4	78.1
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Table 19.1-136 (23 of 52)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
43	1.87E-10	2.90E-03	%SO	RCS Overdraining due to SCS	0.4	78.5
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		3.49E-04	HR-FB-SOP11-01	Operator Fails to Feed during SO POS 11 w/makeup established		
		5.76E-03	HR-RS-SOP11	Operator Fails to Restore SCS during SO POS 11		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.90E-01	SISPP-LPSD-L2-E2-NOT	Core debris does not plug screens (LPSD Level 2, POS 3A)		
		1.14E+04	COMBINATION_728-LP	HEP dependency factor for HR-RS-SOP11,HR-FB-SOP11-01,HR-FB-SAMG,IWOPH-S-CFS		
44	1.87E-10	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.4	78.9
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		

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Table 19.1-136 (24 of 52)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
45	1.84E-10	2.90E-03	%SO	RCS Overdraining due to SCS	0.4	79.3
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.20E-06	PPSO-OS-PPS	CCF OF PPS OPERATING SYSTEM SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
46	1.72E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.4	79.7
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Table 19.1-136 (25 of 52)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
47	1.69E-10	2.90E-03	%SO	RCS Overdraining due to SCS	0.4	80.0
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		3.49E-04	HR-FB-SOP11-01	Operator Fails to Feed during SO POS 11 w/makeup established		
		5.76E-03	HR-RS-SOP11	Operator Fails to Restore SCS during SO POS 11		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCFH2BRUP	Late contmt failure due to late H2 burn		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.90E-01	SISPP-LPSD-L2-E2-NOT	Core debris does not plug screens (LPSD Level 2, POS 3A)		
		1.14E+04	COMBINATION_728-LP	HEP dependency factor for HR-RS-SOP11,HR-FB-SOP11-01,HR-FB-SAMG,IWOPH-S-CFS		
48	1.68E-10	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.4	80.4
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		1.00E-01	LPSD-L2-LCFH2BRUP	Late contmt failure due to late H2 burn		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		

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Table 19.1-136 (26 of 52)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
49	1.67E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.4	80.7
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
50	1.67E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.4	81.1
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	LPSD-L2-DCOOL-YES	Debris in cavity covered by water and cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
51	1.66E-10	2.90E-03	%SO	RCS Overdraining due to SCS	0.3	81.4
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		1.00E-01	LPSD-L2-LCFH2BRUP	Late contmt failure due to late H2 burn		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.20E-06	PPSO-OS-PPS	CCF OF PPS OPERATING SYSTEM SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
52	1.64E-10	1.40E-01	%S1	Loss of SCS (S1)	0.3	81.8
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
53	1.53E-10	2.90E-03	%SO	RCS Overdraining due to SCS	0.3	82.1
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		3.49E-04	HR-FB-SOP05-01	Operator Fails to Feed during SO POS 5 w/makeup established		
		6.76E-03	HR-RS-SOP05	Operator Fails to Restore SCS during SO POS 5		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		1.00E-02	LPSD-L2-LCFH2BRUPE	Late contmt failure due to late H2 burn - EARLY CS success and WET cavity		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		2.55E+03	COMBINATION_616-LP	HEP dependency factor for HR-RS-SOP05,HR-FB-SOP05-01,HR-FB-SAMG		

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Table 19.1-136 (29 of 52)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
54	1.49E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.3	82.4
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.90E-01	SISPP-LPSD-L2-E2-NOT	Core debris does not plug screens (LPSD Level 2, POS 3A)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
55	1.47E-10	1.40E-01	%S1	Loss of SCS (S1)	0.3	82.7
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		1.00E-01	LPSD-L2-LCFH2BRUP	Late contmt failure due to late H2 burn		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		

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Table 19.1-136 (30 of 52)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
56	1.41E-10	2.90E-03	%SO	RCS Overdraining due to SCS	0.3	83.0
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		6.07E-03	H-CI-OPEN	Operator Fails to Recovery CIS Valve by Local Manual Operation		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
57	1.24E-10	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.3	83.3
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		3.49E-04	HR-FB-SLP05-01	Operator Fails to Feed during SL POS 5 w/makeup established		
		6.76E-03	HR-RS-SLP05	Operator Fails to Restore SCS during SL POS 5		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		2.14E-02	LPSD-L2-NOPAR	PARS fail to control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		1.75E+05	COMBINATION_734-LP	HEP dependency factor for HR-RS-SLP05,HR-FB-SLP05-01,HR-FB-SAMG,IWOPH-S-CFS		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
58	1.17E-10	1.40E-01	%S1	Loss of SCS (S1)	0.2	83.5
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		3.49E-04	HR-FB-S1P05	Operator Fails to Feed during S1 POS 5		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		4.18E-01	HR-RS-S1P05	Operator Fails to Restore SCS during S1 POS 5		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		1.21E+03	COMBINATION_744-LP	HEP dependency factor for HR-RS-S1P05,HR-FB-S1P05,HR-FB-SAMG,IWOPH-S-CFS		
59	1.15E-10	2.90E-03	%SO	RCS Overdraining due to SCS	0.2	83.8
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.00E-02	SISPP-LPSD-L2-E2	Sump plugs for POSs 3A analysis (Level 2)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
60	1.15E-10	2.90E-03	%SO	RCS Overdraining due to SCS	0.2	84.0
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		5.00E-01	LPSD-L2-DCOOL-YES	Debris in cavity covered by water and cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.00E-02	SISPP-LPSD-L2-E2	Sump plugs for POSs 3A analysis (Level 2)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
61	1.05E-10	1.40E-01	%S1	Loss of SCS (S1)	0.2	84.2
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		3.49E-04	HR-FB-S1P05	Operator Fails to Feed during S1 POS 5		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate S1 per SAMG, given failure in Lev 1		
		4.18E-01	HR-RS-S1P05	Operator Fails to Restore SCS during S1 POS 5		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCFH2BRUP	Late contmt failure due to late H2 burn		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		1.21E+03	COMBINATION_744-LP	HEP dependency factor for HR-RS-S1P05,HR-FB-S1P05,HR-FB-SAMG,IWOPH-S-CFS		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
62	9.50E-11	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.2	84.4
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
63	9.24E-11	1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING	0.2	84.6
		2.90E-03	%SO	RCS Overdraining due to SCS		
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		1.00E-02	LPSD-L2-LCFH2BRUPE	Late contmt failure due to late H2 burn - EARLY CS success and WET cavity		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.90E-01	SISPP-LPSD-L2-E2-NOT	Core debris does not plug screens (LPSD Level 2, POS 3A)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
64	8.40E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.2	84.8
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		1.00E-02	LPSD-L2-LCFH2BRUPE	Late contmt failure due to late H2 burn - EARLY CS success and WET cavity		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
65	8.21E-11	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.2	85.0
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.90E-01	SISPP-LPSD-L2-E2-NOT	Core debris does not plug screens (LPSD Level 2, POS 3A)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Table 19.1-136 (35 of 52)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
66	7.86E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.2	85.1
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		5.37E-04	HR-FB-SOP11-02	Operator Fails to Feed during SO POS 11 w/makeup failed		
		7.18E-04	HR-MI-SOP11	Operator Fails to Isolate and Makeup SO at POS 11		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		2.14E-02	LPSD-L2-NOPAR	PARS fail to control hydrogen in containment		
		9.90E-01	SISPP-LPSD-L2-E2-NOT	Core debris does not plug screens (LPSD Level 2, POS 3A)		
67	7.44E-11	1.14E+05	COMBINATION_729-LP	HEP dependency factor for HR-MI-SOP11,HR-FB-SOP11-02,HR-FB-SAMG,IWOPH-S-CFS	0.2	85.3
		2.90E-03	%SO	RCS Overdraining due to SCS		
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		3.49E-04	HR-FB-SOP05-01	Operator Fails to Feed during SO POS 5 w/makeup established		
		6.76E-03	HR-RS-SOP05	Operator Fails to Restore SCS during SO POS 5		
		1.00E-01	LPSD-L2-ECFH2-RUPTDET	Containment ruptures due to early H2 burn		
		2.14E-02	LPSD-L2-NOPAR	PARS fail to control hydrogen in containment		
		2.55E+03	COMBINATION_616-LP	HEP dependency factor for HR-RS-SOP05,HR-FB-SOP05-01,HR-FB-SAMG		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
68	7.44E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.2	85.5
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		2.72E-03	HR-FB-SOP05-02	Operator Fails to Feed during SO POS 5 w/makeup failed		
		7.18E-04	HR-MI-SOP05	Operator Fails to Isolate and Makeup SO at POS 5		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		2.14E-02	LPSD-L2-NOPAR	PARS fail to control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
69	7.42E-11	2.34E+04	COMBINATION_731-LP	HEP dependency factor for HR-MI-SOP05,HR-FB-SOP05-02,HR-FB-SAMG,IWOPH-S-CFS	0.2	85.6
		2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory		
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		2.14E-02	LPSD-L2-NOPAR	PARS fail to control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		

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Table 19.1-136 (37 of 52)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
70	6.84E-11	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.1	85.8
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		5.37E-04	HR-FB-JLP05-01	Operator Fails to Feed during JL POS 5 w/makeup established		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		6.76E-03	HR-RS-JLP05	Operator Fails to Restore SCS during JL POS 5		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		2.14E-02	LPSD-L2-NOPAR	PARS fail to control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		1.14E+05	COMBINATION_742-LP	HEP dependency factor for HR-RS-JLP05,HR-FB-JLP05-01,HR-FB-SAMG,IWOPH-S-CFS		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
71	6.69E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.1	85.9
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		3.49E-04	HR-FB-SOP05-01	Operator Fails to Feed during SO POS 5 w/makeup established		
		6.76E-03	HR-RS-SOP05	Operator Fails to Restore SCS during SO POS 5		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		9.00E-01	LPSD-L2-ECFH2-INT	Containment intact after early H2 burn		
		9.99E-01	LPSD-L2-LCFSEALINT	Containment intact - no late contmnt seal failure		
		2.14E-02	LPSD-L2-NOPAR	PARS fail to control hydrogen in containment		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		1.75E+05	COMBINATION_730-LP	HEP dependency factor for HR-RS-SOP05,HR-FB-SOP05-01,HR-FB-SAMG,IWOPH-S-CFS		
72	6.58E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.1	86.0
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		1.00E-04	CI-HATCH	HATCH FAILS TO ISOLATE		
		3.49E-04	HR-FB-SOP05-01	Operator Fails to Feed during SO POS 5 w/makeup established		
		6.76E-03	HR-RS-SOP05	Operator Fails to Restore SCS during SO POS 5		
		1.44E+02	COMBINATION_1-LP	HEP dependency factor for HR-RS-SOP05,HR-FB-SOP05-01		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
73	6.58E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.1	86.2
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		1.00E-04	CHLRTLINES	LEAK RATE TEST LINES FAIL TO ISOLATE (VQ-2024, 2014, 2016)		
		3.49E-04	HR-FB-SOP05-01	Operator Fails to Feed during SO POS 5 w/makeup established		
		6.76E-03	HR-RS-SOP05	Operator Fails to Restore SCS during SO POS 5		
		1.44E+02	COMBINATION_1-LP	HEP dependency factor for HR-RS-SOP05,HR-FB-SOP05-01		
74	6.48E-11	1.40E-01	%S1	Loss of SCS (S1)	0.1	86.3
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		3.49E-04	HR-FB-S1P05	Operator Fails to Feed during S1 POS 5		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		4.18E-01	HR-RS-S1P05	Operator Fails to Restore SCS during S1 POS 5		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		1.77E+01	COMBINATION_630-LP	HEP dependency factor for HR-RS-S1P05,HR-FB-S1P05,HR-FB-SAMG		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
75	6.48E-11	1.40E-01	%S1	Loss of SCS (S1)	0.1	86.5
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		3.49E-04	HR-FB-S1P05	Operator Fails to Feed during S1 POS 5		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		4.18E-01	HR-RS-S1P05	Operator Fails to Restore SCS during S1 POS 5		
		5.00E-01	LPSD-L2-DCOOL-YES	Debris in cavity covered by water and cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		1.77E+01	COMBINATION_630-LP	HEP dependency factor for HR-RS-S1P05,HR-FB-S1P05,HR-FB-SAMG		
76	6.27E-11	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.1	86.6
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		2.72E-03	HR-FB-SLP05-02	Operator Fails to Feed during SL POS 5 w/makeup failed		
		7.18E-04	HR-MI-SLP05	Operator Fails to Isolate and Makeup SL at POS 5		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		2.34E+04	COMBINATION_735-LP	HEP dependency factor for HR-MI-SLP05,HR-FB-SLP05-02,HR-FB-SAMG,IWOPH-S-CFS		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
77	6.10E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.1	86.7
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		9.26E-05	CVAVWD2-505/6	2/2 CCF OF AOV V505/506 FAIL TO CLOSE		
		3.49E-04	HR-FB-SOP05-01	Operator Fails to Feed during SO POS 5 w/makeup established		
		6.76E-03	HR-RS-SOP05	Operator Fails to Restore SCS during SO POS 5		
		1.44E+02	COMBINATION_1-LP	HEP dependency factor for HR-RS-SOP05,HR-FB-SOP05-01		
78	6.10E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.1	86.8
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		9.26E-05	CVAVWD2-522/3	2/2 CCF OF AOV V522/523 FAIL TO CLOSE		
		3.49E-04	HR-FB-SOP05-01	Operator Fails to Feed during SO POS 5 w/makeup established		
		6.76E-03	HR-RS-SOP05	Operator Fails to Restore SCS during SO POS 5		
		1.44E+02	COMBINATION_1-LP	HEP dependency factor for HR-RS-SOP05,HR-FB-SOP05-01		
79	6.10E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.1	87.0
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		9.26E-05	CVAVWD2-560/1	2/2 CCF OF AOV V560/561 FAIL TO CLOSE		
		3.49E-04	HR-FB-SOP05-01	Operator Fails to Feed during SO POS 5 w/makeup established		
		6.76E-03	HR-RS-SOP05	Operator Fails to Restore SCS during SO POS 5		
		1.44E+02	COMBINATION_1-LP	HEP dependency factor for HR-RS-SOP05,HR-FB-SOP05-01		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
80	6.03E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.1	87.1
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		3.49E-04	HR-FB-SOP05-01	Operator Fails to Feed during SO POS 5 w/makeup established		
		6.76E-03	HR-RS-SOP05	Operator Fails to Restore SCS during SO POS 5		
		9.00E-01	LPSD-L2-ECFH2-INT	Containment intact after early H2 burn		
		1.00E-01	LPSD-L2-ECFLH2B-RUP	Late H2 burn caused containment rupture		
		2.14E-02	LPSD-L2-NOPAR	PARS fail to control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		2.55E+03	COMBINATION_616-LP	HEP dependency factor for HR-RS-SOP05,HR-FB-SOP05-01,HR-FB-SAMG		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
81	6.03E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.1	87.2
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		3.49E-04	HR-FB-SOP05-01	Operator Fails to Feed during SO POS 5 w/makeup established		
		6.76E-03	HR-RS-SOP05	Operator Fails to Restore SCS during SO POS 5		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		9.00E-01	LPSD-L2-ECFH2-INT	Containment intact after early H2 burn		
		2.14E-02	LPSD-L2-NOPAR	PARS fail to control hydrogen in containment		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		1.75E+05	COMBINATION_730-LP	HEP dependency factor for HR-RS-SOP05,HR-FB-SOP05-01,HR-FB-SAMG,IWOPH-S-CFS		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
82	5.64E-11	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.1	87.4
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		2.72E-03	HR-FB-SLP05-02	Operator Fails to Feed during SL POS 5 w/makeup failed		
		7.18E-04	HR-MI-SLP05	Operator Fails to Isolate and Makeup SL at POS 5		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCFH2BRUP	Late contmt failure due to late H2 burn		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		2.34E+04	COMBINATION_735-LP	HEP dependency factor for HR-MI-SLP05,HR-FB-SLP05-02,HR-FB-SAMG,IWOPH-S-CFS		
83	5.61E-11	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.1	87.5
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		5.37E-04	HR-FB-JLP11-02	Operator Fails to Feed during JL POS 11 w/makeup failed		
		7.18E-04	HR-MI-JLP11	Operator Fails to Isolate and Makeup JL at POS 11		
		1.00E-02	SISPP-LPSD-L2-E2	Sump plugs for POSs 3A analysis (Level 2)		
		9.41E+01	COMBINATION_24-LP	HEP dependency factor for HR-MI-JLP11,HR-FB-JLP11-02		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
84	5.20E-11	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.1	87.6
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		5.37E-04	HR-FB-SLP11-02	Operator Fails to Feed during SL POS 11 w/makeup failed		
		7.18E-04	HR-MI-SLP11	Operator Fails to Isolate and Makeup SL at POS 11		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.90E-01	SISPP-LPSD-L2-E2-NOT	Core debris does not plug screens (LPSD Level 2, POS 3A)		
		1.14E+05	COMBINATION_737-LP	HEP dependency factor for HR-MI-SLP11,HR-FB-SLP11-02,HR-FB-SAMG,IWOPH-S-CFS		
85	5.05E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.1	87.7
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		1.00E-01	LPSD-L2-ECFH2-RUPTDET	Containment ruptures due to early H2 burn		
		2.14E-02	LPSD-L2-NOPAR	PARS fail to control hydrogen in containment		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
86	5.05E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.1	87.8
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		1.00E-01	LPSD-L2-ECFH2-RUPTDET	Containment ruptures due to early H2 burn		
		2.14E-02	LPSD-L2-NOPAR	PARS fail to control hydrogen in containment		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
87	4.97E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.1	87.9
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		1.00E-01	LPSD-L2-ECFH2-RUPTDET	Containment ruptures due to early H2 burn		
		2.14E-02	LPSD-L2-NOPAR	PARS fail to control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
88	4.68E-11	2.90E-01	%SL	Failure to Maintain Water Level at Reduced Inventory	0.1	88.0
		9.66E-04	BE-RATE-P11	Conversion factor (SD-yr -> Calendar yr) for POS11 duration		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		5.37E-04	HR-FB-SLP11-02	Operator Fails to Feed during SL POS 11 w/makeup failed		
		7.18E-04	HR-MI-SLP11	Operator Fails to Isolate and Makeup SL at POS 11		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		1.00E-01	LPSD-L2-LCFH2BRUP	Late contmt failure due to late H2 burn		
		9.00E-01	LPSD-L2-LCF-INTDET	Containment intact after late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		9.90E-01	SISPP-LPSD-L2-E2-NOT	Core debris does not plug screens (LPSD Level 2, POS 3A)		
		1.14E+05	COMBINATION_737-LP	HEP dependency factor for HR-MI-SLP11,HR-FB-SLP11-02,HR-FB-SAMG,IWOPH-S-CFS		
89	4.50E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.1	88.1
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		9.00E-01	LPSD-L2-ECFH2-INT	Containment intact after early H2 burn		
		1.00E-01	LPSD-L2-ECFLH2B-RUP	Late H2 burn caused containment rupture		
		2.14E-02	LPSD-L2-NOPAR	PARS fail to control hydrogen in containment		
		9.90E-01	SISPP-LPSD-L2-E2-NOT	Core debris does not plug screens (LPSD Level 2, POS 3A)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
90	4.47E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.1	88.2
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		9.00E-01	LPSD-L2-ECFH2-INT	Containment intact after early H2 burn		
		9.99E-01	LPSD-L2-LCFSEALINT	Containment intact - no late contmt seal failure		
		2.14E-02	LPSD-L2-NOPAR	PARS fail to control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
91	4.47E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.1	88.3
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		9.00E-01	LPSD-L2-ECFH2-INT	Containment intact after early H2 burn		
		9.99E-01	LPSD-L2-LCFSEALINT	Containment intact - no late contmt seal failure		
		2.14E-02	LPSD-L2-NOPAR	PARS fail to control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
92	4.29E-11	1.40E-01	%S1	Loss of SCS (S1)	0.1	88.4
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		4.18E-01	HR-RS-S1P05	Operator Fails to Restore SCS during S1 POS 5		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
93	4.29E-11	1.40E-01	%S1	Loss of SCS (S1)	0.1	88.5
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		4.18E-01	HR-RS-S1P05	Operator Fails to Restore SCS during S1 POS 5		
		5.00E-01	LPSD-L2-DCOOL-YES	Debris in cavity covered by water and cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
94	4.29E-11	1.40E-01	%S1	Loss of SCS (S1)	0.1	88.6
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		4.18E-01	HR-RS-S1P05	Operator Fails to Restore SCS during S1 POS 5		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	LPSD-L2-DCOOL-NO	Debris in cavity covered by water but not cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
95	4.29E-11	1.40E-01	%S1	Loss of SCS (S1)	0.1	88.6
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		4.18E-01	HR-RS-S1P05	Operator Fails to Restore SCS during S1 POS 5		
		1.00E-01	L2-PROB-CSRECSBS-NO	MELTSTOP DET: CSRECSBS = NO		
		5.00E-01	LPSD-L2-DCOOL-YES	Debris in cavity covered by water and cooled		
		9.99E-01	LPSD-L2-EVSE-MED-SUC	Success of branch for EVSE-Med water level		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		

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Table 19.1-136 (51 of 52)

Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
96	4.10E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.1	88.7
		6.67E-01	BE-RATE-OT-11	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 11		
		2.99E-03	HR-FB-SAMG	Conditional HEP - Initiate SI per SAMG, given failure in Lev 1		
		3.49E-04	HR-FB-SOP11-01	Operator Fails to Feed during SO POS 11 w/makeup established		
		5.76E-03	HR-RS-SOP11	Operator Fails to Restore SCS during SO POS 11		
		1.46E-02	IWOPH-S-CFS	Operator Fails to Open CFS Valves		
		2.14E-02	LPSD-L2-NOPAR	PARS fail to control hydrogen in containment		
		9.90E-01	SISPP-LPSD-L2-E2-NOT	Core debris does not plug screens (LPSD Level 2, POS 3A)		
		1.14E+04	COMBINATION_728-LP	HEP dependency factor for HR-RS-SOP11,HR-FB-SOP11-01,HR-FB-SAMG,IWOPH-S-CFS		
97	4.09E-11	3.50E-02	%KV	Loss of Class 1E 4.16KV	0.1	88.8
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		1.00E-01	LPSD-L2-LCF-RUPTDET	Containment ruptures due to late H2 burn		
		9.79E-01	LPSD-L2-PAR	PARS successfully control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		

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Rank	Frequency (/yr)	Cutsets			Contribution to CDF (%)	
		BE Prob	Basic Event	Cutset Description	Cutset	Cumulative
98	4.09E-11	1.60E-01	%SL1	Small LOCA at Reduced Inventory	0.1	88.9
		1.23E-03	BE-RATE-P05	Conversion factor (SD-yr -> Calendar yr) for POS5 duration		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		2.14E-02	LPSD-L2-NOPAR	PARS fail to control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
99	4.09E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.1	89.0
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		9.00E-01	LPSD-L2-ECFH2-INT	Containment intact after early H2 burn		
		1.00E-01	LPSD-L2-ECFLH2B-RUP	Late H2 burn caused containment rupture		
		2.14E-02	LPSD-L2-NOPAR	PARS fail to control hydrogen in containment		
		9.00E-01	SISPP-LPSD-L2-E1-NOT	Core debris does not plug screens (LPSD Level 2, POSs 3B-6)		
		1.22E-05	SISPP-S-IRWST	CCF OF IRWST SUMPS DUE TO PLUGGING		
100	4.02E-11	2.90E-03	%SO	RCS Overdraining due to SCS	0.1	89.1
		6.67E-01	BE-RATE-OT-05	Conv. factor (Outage-yr -> Cal. yr, 1/(18mon/12mon)) for Demand Failure during POS 05		
		9.00E-01	L2-PROB-CSRECSBS-YES	MELTSTOP DET: CSRECSBS = YES - ECSBS is successful		
		9.00E-01	LPSD-L2-ECFH2-INT	Containment intact after early H2 burn		
		2.14E-02	LPSD-L2-NOPAR	PARS fail to control hydrogen in containment		
		1.20E-05	PPSO-AP-LC	CCF OF PPS LC APPLICATION SOFTWARE		
		1.00E-01	SISPP-LPSD-L2-E1	Sump plugs for POSs 3B to 6 analysis (Level 2)		