Chapter 15 Revision 1 to Revision 2 Change List

Item	Location (e.g., subsection with paragraph/sentence/item, table with column/row, or figure)	Description of Change
1	S15.0, 1st para	• Clarified the 2nd and 3rd sentences to prevent future changes. • Added "significantly" to qualify the 3rd sentence, per the response to RAI 15.0-5.
2	S15.0, 5th para	Replaced 1st sentence with "The starting point for the NSOA is the regulatory acceptance criteria and design code allowables such that unacceptable safety analysis results can be determined," per the response to RAI 15.0-6
3	S15.0.1	Replaced the 2nd through 6th bullets, per the response to RAI 15.0-7.
4	S15.0.1, 4th para	Replaced to read "Based on Subsection 5.5.2, Item (3) of ANSI/ANS-58.14-1993, DBEs should have annual probabilities ≥ 10-6. Therefore, any event with an annual probability of < 10-6 is not considered credible, and thus, is not classified as a DBE," per the response to RAI 15.0-8.
5	S15.0.1.1, Item (4)	Deleted "ABWR DCD portions associated accidents," per the response to RAI 15.0-9.
6	S15.0.1.2, Item (1)a.	Clarified 2nd and 3rd bullets, per the response to RAI 15.0-10.
7	S15.0.1.2, Item (1)c.	Deleted the reference to the ABWR, per the response to RAI 15.0-10.
8	S15.0.1.2, Item (3)	Deleted the reference to the ABWR, per the response to RAI 15.0-10.
9	S15.0.2, 4th para	Modified the last sentence to read "These include reactivity and power distribution anomalies such as the Control Rod Withdrawal Error events and the Loss of Feedwater Heating With Failure of Selected Control Rod Run-In event, which is re-evaluated for each fuel reload," per the response to RAI 15.0-11.
10	S15.0.2, 3rd and 7th para	Removed loss of non-emergency AC power to station auxiliaries from list of AOOs to be analyzed for fuel reloads (3rd paragraph) and added the SBO to special events to be

Item	Location (e.g., subsection with paragraph/sentence/item, table with column/row, or figure)	Description of Change
		analyzed for fuel reloads.
11	S15.0.3, 1st para	Changed the last sentence to read "Where an acceptance criterion is not specified in regulations and the SRP, then the criterion in the Reference 1 LTR shall be used," per response to RAI 15.0-12.
12	S15.0.3.1, 1st para	Per the response to RAI 15.0-13, added "For AOOs, the GDC 10 acceptance criterion is that "The reactor core and associated coolant, control, and protection systems shall be designed with appropriate margin to assure that specified acceptable fuel design limits are not exceeded during any condition of normal operation, including the effects of anticipated operational occurrences" to the beginning of the paragraph.
13	S15.0.3.1, 2nd & 4th para	Changed for clarification, added "SRP" in front of "15.2" in section to coincide with changes made to RAI 15.0-13
14	S15.0.3.1, 6th para	Deleted per the response to RAI 15.0-12.
15	S15.0.3.4.7, 5th para	Deleted per the response to RAI 15.0-12.
16	S15.0.5	Changed 52.1 to 58.14, per the response to RAI 15.0-8.
17	S15.0.6	Revised the Reference 15.0-1 revision number and date.
18	T15.0-3, 2nd bullet	Revised test to make the acceptance criteria discussion more general. Replaced the word "transients" with AOOs for consistency with S15.0 terminology.
19	T15.0-3, 3rd thru 5th bullet	Deleted the * and its note, "(core wide AOOs only)," and 5th bullet, per the response to RAI 15.0-15 Added criterion "Reactor water level shall be maintained above the top of the core (i.e., active fuel)," to be consistent with NEDE-32906P-A, R1, S8.1.5
20	T15.0-3 last section "*"	Deleted per RAI 15.0-15 Based on SRP Sections 15.4.1 and 15.4.2, for the Uncontrolled Control Rod Assembly Withdrawal From a Subcritical or Low Power Startup Condition (i.e., control rod withdrawal error [RWE] during startup) event and the Uncontrolled Control Rod Assembly Withdrawal At Power (i.e., RWE during power operation) event.

Item	Location (e.g., subsection with paragraph/sentence/item, table with column/row, or figure)	Description of Change
21	T15.0-7 note *	Added reference number for ABWR FSER
22	S15.1.2.2	Deleted the discussion of "Operating States" to use the distinction of 'Operating Modes'. This provides consistency with the Technical Specifications. Replaced Revision 1 Subsections 15.1.2.2.1 "Operating States" and 15.1.2.2.2 "Operating Modes" with a combined Subsection 15.1.2.2.1 "Operating Modes". The Revision 1 Subsection 15.1.2.2.3 then becomes Subsection 15.1.2.2.2.
23	S15.1.3.1	Replaced the term "Operating State" with "Operating Mode".
24	T15.1-1	Replaced the term "Operating State" with "Operating Mode".
25	T15.1-2	Replaced the term "Operating State" with "Operating Mode" and provided definition of the Operating Modes that is consistent with Technical Specifications.
26	T15.1-3	Replaced the term "Operating State" with "Operating Mode" and identified the Operating Modes applicable to each event that is evaluated in Chapter 15.
27	T15.1-4	Replaced the term "Operating State" with "Operating Mode"
28	T15.1-5	Added "(10-sec delay)" to ICS – RPV High Dome Pressure column heading
29	T15.1-5	Changed water level L1.5 to L1 in column headings for ICS initiation and MSIV closure
30	T15.1-5	Changed ICS initiation signal from "Level 2 with 30-sec Timer –or- MSIV Position" to "Loss of Power Generation Bus (Loss of Feedwater Flow)" for two events ['Loss of Non-Emergency AC Power to Station Auxiliaries' and 'Loss of All Feedwater Flow'].
31	T15.1-5	Added ICS Initiation on "Loss of Power Generation Bus (Loss of Feedwater Flow)" for LOCA, Main Steamline Break, Feedwater Line Break, Small Line Break, and RWCU/SDC Line Break.

Item	Location (e.g., subsection with paragraph/sentence/item, table with column/row, or figure)	Description of Change
32	T15.1-5	Deleted credit for CRD makeup flow for two AOO events ['Loss of Non-Emergency AC Power to Station Auxiliaries' and 'Loss of All Feedwater Flow'] and for LOCA, Main Steamline Break, Feedwater Line Break, Small Line Break, and RWCU/SDC Line Break.
33	T15.1-5	Deleted credit for SLCS actuation on low water level L2 signal for LOCA, Main Steamline Break, Feedwater Line Break, Small Line Break, and RWCU/SDC Line Break.
34	T15.1-5	Deleted FAPCS for Inadvertent Opening of Safety/Relief Valve, Inadvertent Opening of a DPV, and Stuck Open Safety/Relief Valve.
35	T15.1-5	Added actuation of ADS/DPV, and actuation of GDCS for Inadvertent Opening of a DPV and for Stuck Open Safety/Relief Valve.
36	T15.1-5	Deleted actuation of HP_CRD and added actuation of ADS and DPV for Stuck Open Safety/Relief Valve event
37	T15.1-5	Added initiation of FAPCS for suppression pool cooling initiated by high suppression pool temperature for Anticipated Transients Without Scram
38	T15.1-5	Added a footnote to the table to clarify that HP_CRD is a backup for inventory control; the primary success path is IC operation.
39	T15.1-5	Deleted the column headings for "ATWS-ARI" and "ATWS FMCRD"
40	F15.1-1 through F15.1-47	Removed the identification of applicable "Operating State". This information is provided in Table 15.1-3.
41	F15.1-15	Changed RPS scram signal from "Loss of Power on Four Power Generation Buses" to "Loss of Power Generation Bus (Loss of Feedwater Flow)"
42	F15.1-15	Changed ICS initiation signal from "Level 2 with 30-sec Timer –or- MSIV Position" to "Loss of Power Generation Bus (Loss of Feedwater Flow)"
43	F15.1-15	Changed MSIV closure signal from "… Low-Low Condenser Vacuum" to "… Low Condenser Vacuum".

Item	Location (e.g., subsection with paragraph/sentence/item, table with column/row, or figure)	Description of Change
44	F15.1-15	Deleted credit for CRD makeup flow
45	F15.1-16	Deleted credit for CRD makeup flow
46	F15.1-16	Changed ICS initiation signal from “Level 2 with 30-sec Timer –or- MSIV Position” to “Loss of Power Generation Bus (Loss of Feedwater Flow)”
47	F15.1-20, F15.1-21, F15.1-22	Added “with 10-sec delay” to ICS high RPV pressure initiation signal
48	F15.1-29	Changed “Suppression Pool Temperature” initiation signal to “High Suppression Pool Temperature” and added a note that identifies Inadvertent Opening of a Safety/Relief Valve as a potential precursor to the Stuck Open Safety/Relief Valve event.
49	F15.1-30	Changed scram initiation signal from “Drywell Pressure” to “High Drywell Pressure”. Added paths for GDCS and ADS/DPV actuation.
50	F15.1-31	Deleted HP_CRD actuation and added paths for actuation of ADS/DPV, PCCS and GDCS.
51	F15.1-33	Changed isolation signal from “High Radiation …” to “High Exhaust Radiation …”
52	F15.1-34a, F15.1-35a, F15.1-37a, F15.1-38a, F15.1-39a, F15.1-45a	Removed Drywell pressure permissive signals from ADS and DPV actuation.
53	F15.1-34a, F15.1-35a, F15.1-37a, F15.1-38a, F15.1-39a	Added ICS initiation signal for “Loss of Power Generation Bus (Loss of Feedwater Flow)”
54	F15.1-34a, F15.1-35a, F15.1-37a, F15.1-38a, F15.1-39a	Changed the Required Action for ICS from “Steam Condensation and RV Depressurization” to “Inventory Control”.
55	F15.1-34a, F15.1-35a, F15.1-37a, F15.1-38a, F15.1-39a	Changed CRHAHVS signal from “High Radiation” to “MCR Air Intake High Radiation”
56	F15.1-34b, F15.1-35b, F15.1-37b, F15.1-38b, F15.1-39b	Deleted credit for SLCS actuation on low water level L2 signal.

Item	Location (e.g., subsection with paragraph/sentence/item, table with column/row, or figure)	Description of Change
57	F15.1-34, F15.1-35, F15.1-37, F15.1-38, F15.1-39, F15.1-43 through F15.1-46	Changed each occurrence of water level L1.5 to water level L1 (for ICS initiation, ADS/DPV opening, MSIV closure, GDCS, etc.)
58	F15.1-44b	Added initiation of FAPCS for suppression pool cooling initiated by high suppression pool temperature
59	S15.2, 2nd para	Added discussion of the circumstances under which nonsafety-related systems or components are assumed in AOO and infrequent event analysis.
60	S15.2.0	Updated based on analysis assumptions associated with ICS and level optimization design change and clarified to what analysis the assumptions apply.
61	S15.02.05.02.03, 1st para	Clarified primary success path for inventory control with safety related systems as discussed in RAI 15.0-2.
62	S15.02.05.03.02, 1st para	Clarified primary success path for inventory control with safety related systems as discussed in RAI 15.0-2.
63	S15.2.6, 2nd para	Updated references to Chapter 4 subsections based on RAI 4.4-4
64	S15.2.7	Removed loss of non-emergency AC power to station auxiliaries from list of AOOs to be analyzed for core design changes.
65	S15.2.8	Updated for consistency in format of references.
66	T15.2-1	Updated the Table based on ICS and level optimization design change and expanded detail of the table.
67	T15.2-5, T15.2-17, T15.2-21, T15.2-22	Updated the Tables to reflect the updated analysis based on the ICS and level optimization design change.
68	T15.2-21, T15.2-22	Clarified note about time difference between the tables and figures.
69	F15.2-11a though F15.2-11g	Replaced Figures. The new figures reflect the updated inadvertent isolation condenser initiation analysis based on the ICS and level optimization design change.
70	F15.2-15a though F15.2-15g	Replaced Figures. The new figures reflect the updated loss of non-emergency AC power to station auxiliaries analysis based on the ICS and level optimization design change.

Item	Location (e.g., subsection with paragraph/sentence/item, table with column/row, or figure)	Description of Change
71	F15.2-16a though F15.2-16g	Replaced Figures. The new figures reflect the updated loss of all feedwater flow analysis based on the ICS and level optimization design change.
72	S15.3 2nd para	Added clarification of which analyses use assumptions from Subsection 15.2.0 and Table 15.2-1, 2 and 3.
73	S15.3.15.2 1st para	Added discussion of impact on the sequence of events is auxiliary power is not available.
74	S15.3.16.1, 2nd & 3rd para	Updated for clarification in reference to RAI 2.4-29
75	S15.3.16.2, 1st & 2nd para	Updated for clarification in reference to RAI 2.4-29
76	S15.3.16.3, 2nd & 3rd para	Updated table numbering reference to reflect the addition of omitted tables
77	T15.3-1, Sub-section I.D. and Description column	Changes made to correct section numbers for events. Changes “Inadverted” to “Inadvertent” SRV open.
78	T15.3.11, T15.3.12	Noted that FAPCS is not credited for suppression pool cooling to clarify primary success path with safety-related systems as discussed in RAI 15.0-2.
79	T15.3-17	Inserted omitted Table “Radwaste System Failure Accident Parameters “
80	T15.3-18	Inserted omitted Table “Radwaste System Failure Accident Isotopic Release to Environment (megabecquerel)”
81	T15.3-19	Inserted omitted Table “Radwaste System Failure Accident Meteorology and Dose Results”
82	S15.5.4.3.3, 4th para	Added discussion to clarify that ATWS analysis uses different assumption for ICS volume.
83	S15.4.4.5.2.4, 1st para	Deleted integrity reference per RAI 3.2-41 “The condenser is designed as a Seismic Category II component to withstand a SSE and maintain structural and leak tightness”
84	S15.5.5	Clarified the purpose of the Section and removed the

Item	Location (e.g., subsection with paragraph/sentence/item, table with column/row, or figure)	Description of Change
		reference to TRACG.
85	S15.5.5.2	Analysis assumptions have been updated and added to reflect the updated SBO analysis based on the ICS and level optimization design change.
86	S15.5.5.3, 1st –3rd para	Updated to reflect the updated SBO analysis based on the ICS and level optimization design change.
87	S15.5.5.3, 4th para	Added to discuss primary success path for long term inventory control in case RPV leakage is significant.
88	S15.5.6.2, 11th bullet	Corrected level at which ADS is initiated.
89	S15.5.6, 1st para	Update discussion that referred to the loss of FW and loss of AC power/auxiliary transformer analysis.
90	S15.5.6.3, 2nd para	Update discussion that referenced the SBO analysis.
91	Table 15.5-10a, Table 15.5-10b	Added Tables to reflect the updated SBO analysis based on the ICS and level optimization design change.
92	F15.5-10a though F15.5-10e.	Replaced Figures F15.5-10 though F15.5-13 with Figures F15.5-10a though F15.5-10e. The new figures reflect the updated SBO analysis based on the ICS and level optimization design change.
93	T15A-2, 1st, 2nd 3rd and 5th para	Revised to correct reference typos and add negative signs inadvertently left off the exponent of several numbers.