

**ESBWR DCD Tier 2 Chapter 15**  
**26A6642BP Revision 5 to Revision 6 Change List**

<b>Item</b>	<b>Location</b>	<b>Description of Change</b>
1.	Entire Chapter	Global chapter editorial changes to correct misspelling and grammar, spell out or integrate acronyms where appropriate, and update references as needed and where required.
2.	S15.0.1	Corrected "and/or" to either "and" or "or," depending on the context.
3.	S15.0.1.2 Items (3) and (4)	Revise definitions of "infrequent event" and "accident" to properly indicate relevant sub-categories.
4.	S15.0.3.4.4	Added clarification to the 1st bullet, and added 6th and 7th bullets for consistency with Reference 15.0-4.
5.	S15.0.3.4.6	Updated to more-conservatively state that stable shutdown must be achieved for Safe Shutdown Fire.
6.	S15.0.3.4.7	Replaced the text in Section 15.0.3.4.7 for consistency with NUREG-0800, Chapter 15.
7.	S15.0.7, Ref. 15.0-6, 15.0-7, and note	Revised references and added note in response to RAI 4.2-28.
8.	T15.0-2	Revise the name of the LOFWH event to include the FW Controller Failure.
9.	T15.0-2	Deleted reference to SRP 15.6.4 because it refers to MSL Break Outside containment and not RWCU/SDC line failure.
10.	T15.0-2	Corrected the reference to 7.4.
11.	T15.0-2	Removed cited SRP revision numbers and added footnote (4) to point to T1.9-20.
12.	T15.0-4	Added clarification by adding "over the duration of the event" to the end of the sentence that refers to dose consequence.
13.	T15.0-7	Revise the name of the LOFWH event to include the FW Controller Failure.
14.	T15.0-7	Deleted "10 CFR 20.1301" column.

Item	Location	Description of Change
15.	T15.0-8	Revise the name of the LOFWH event to include the FW Controller Failure.
16.	T15.0-8	Deleted incorrect detail of MELCOR code version in response to RAI 21.6-92 S01.
17.	T15.0-8	Added analysis code PANAC11 to “Control Rod Withdrawal Error During Startup.”
18.	T15.0-8	Corrected text to Footnote (3) for clarity.
19.	T15.1-3	Revise the name of the LOFWH event to include the FW Controller Failure.
20.	T15.1-3	For completeness, added a row to the Table for "Feedwater Controller Failure – Minimum Temperature Demand."
21.	T15.1-3	Changed Modes "1 - 5" to "1 - 4" for correctness.
22.	T15.1-5, heading	Revised the NSOA heading in response to RAI 21.6-103.
23.	T15.1-5	Added an “X” for the Loss of condenser vacuum event row.
24.	T15.1-5	Added an “X” for the Loss of shutdown cooling function of RWCU/SDC system row.
25.	T15.1-5 & Footnote 2	Revised Closure-of-1-TCV event to credit high neutron flux scram and automatic follow-up actions.
26.	T15.1-5	Add the FW Controller Failure event consistent with S15.3.1.
27.	T15.1-5	Added an “X” mark to the cell intersected by “Loss of Condenser Vacuum” and column “TBV initiation - TSV Closure.”
28.	T15.1-5	Revised line entry for “Closure of One Turbine Control Valve.”
29.	T15.1-5	Identify SRI can be credited in safety analysis of Turbine Trip and Load Reject with Single Failure in Bypass, and Turbine Trip and Load Reject with Total Bypass Failure (at High Power).

Item	Location	Description of Change
30.	T15.1-6	Removed SRNM Period Rod Block to clarify that it is not required as the primary success path. The RWE-during-startup event credits the SRNM Period Scram.
31.	T15.1-6	Revise Closure-of-1-TCV event to credit high neutron flux scram.
32.	T15.1-6	Add the FW Controller Failure event consistent with S15.3.1.
33.	T15.1-6	Clarification provided that the failure for manual withdrawal of in-sequence rods is assumed to be the SRNM short period block/scram.
34.	T15.1-6	For the Trip "Scram - APRM High Neutron Flux", removed the "X" marking from the Table 15.1-6 row "Control Rod Withdrawal Error During Power Operation" and inserted an "X" marking for the row "Control Rod Withdrawal Error During Startup." These additions are correct trips also for these events.
35.	T15.1-7	Add the FW Controller Failure event consistent with S15.3.1.
36.	F15.1-2	Clarify the subsystems / functions credited for the LOFWH event.
37.	F15.1-3	Revise Closure-of-1-TCV event to credit high neutron flux scram and automatic follow-up actions.
38.	F15.1-5	Identify SRI can be credited in safety analysis of Turbine Trip and Load Reject with Single Failure in Bypass, and Turbine Trip and Load Reject with Total Bypass Failure (at High Power).
39.	F15.1-5	Identify SRI can be credited in safety analysis of Turbine Trip and Load Reject with Single Failure in Bypass, and Turbine Trip and Load Reject with Total Bypass Failure (at High Power).
40.	F15.1-5	Changed Turbine trip input to DPS to Power/load unbalance.
41.	F15.1-11	"Sustained" added to clarify the L1 signal for GDCS.

Item	Location	Description of Change
42.	F15.1-11	Updated the Event Diagram Figure 15.1-11 to include a branch to accommodate the scenario when the Head Vent is open in Mode 5.
43.	F15.1-17b	Add new Figure for the FW Controller Failure event consistent with S15.3.1.
44.	F15.1-21	Identify SRI can be credited in safety analysis of Turbine Trip and Load Reject with Single Failure in Bypass, and Turbine Trip and Load Reject with Total Bypass Failure (at High Power).
45.	F15.1-21	Changed Turbine trip input to DPS to Power/load unbalance.
46.	F15.1-22	Identify SRI can be credited in safety analysis of Turbine Trip and Load Reject with Single Failure in Bypass, and Turbine Trip and Load Reject with Total Bypass Failure (at High Power).
47.	F15.1-24a	Removed SRNM Period Rod Block to clarify that it is not required as the primary success path.
48.	F15.1-24b	Added RPS scram on high neutron flux for when SRNM short-period functions fail.
49.	F15.1-30, F15.1-31	The initiating signal for GDCS and ADS is clarified to be a sustained L1.
50.	F15.1-34a	Updated Figures in response to RAI 21.6-103.
51.	F15.1-34b	Updated Figures in response to RAI 21.6-103.
52.	F15.1-34b	Corrected to eliminate the FW isolation signals from the containment isolation signals process.
53.	F15.1-34b, 35a, 35b, 37a, 37b, 38a, 38b, 39a, 39b, 45a, 45b	Clarification of initiating signals for GDCS, ADS, and SLCS is provided.
54.	F15.1-42	Changed the title of Figure 15.1-42 to "Shutdown Without Control Rods (i.e.SLC System Capability), to match the Title of Section 15.5.2.
55.	S15.2, new 3 <sup>rd</sup> para.	Added paragraph in response to RAI 4.3-17.
56.	S15.2.1.1	LOFWH analysis is updated due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern.

Item	Location	Description of Change
57.	S15.2.1.1.1	“and/or” is changed to “or” to clarify that both failures could not happen for an AOO.
58.	S15.2.1.1.1, 7 <sup>th</sup> para., 4 <sup>th</sup> to 5 <sup>th</sup> sentences	SCRRI/SRI assumptions are updated in response to RAI 15.2-27. Subsequently, they were revised again for reanalysis due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern.
59.	S15.2.1.1.3	“Limiting SCRRI/SRI rod pattern” is deleted because as discussed in the response to RAI 15.2-27, the event with the SCRRI/SRI rod pattern that will be defined in the COLR will be analyzed.
60.	S15.2.2.1	Closure of One TCV analysis is updated due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern. Credit is taken for the high flux scram.
61.	S15.2.2.1.1	Added text to indicate improved fault tolerance for control actuators in SB&PC for TCVs and turbine bypass valves.
62.	S15.2.2.1.2	Clarified plots and plot legends for the Critical Power Ratio (CPR) plots.
63.	S15.2.2.1.3	All revised analyses in 15.2 and 15.3 assume the “bounding” steamline, therefore, the “historical” discussion is no longer applicable and is deleted.
64.	S15.2.2.2	LRWBP analysis is updated due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern. SCRRI/SRI rod pattern is revised to optimize the results.
65.	15.2.2.2.3, 2 <sup>nd</sup> para., new 3 <sup>rd</sup> to 5 <sup>th</sup> sent.	Sentences added to clarify that scram is not credited.
66.	S15.2.2.2.3, 5 <sup>th</sup> para.	“Limiting SCRRI/SRI rod pattern” is deleted because as discussed in the response to RAI 15.2-27, the event with the SCRRI/SRI rod pattern that will be defined in the COLR will be analyzed.

Item	Location	Description of Change
67.	S15.2.2.3	LRHBP analysis is updated due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern. All revised analyses in 15.2 and 15.3 assume the “bounding” steamline, therefore, the “historical” discussion is no longer applicable and is deleted.
68.	S15.2.2.3.1	Added text to indicate improved fault tolerance for control actuators in SB&PC for TCVs and turbine bypass valves.
69.	S15.2.2.3.3 S15.2.2.5.3 S15.3.5.3.1 S15.3.6.3.1	Identify events where SCRRI/SRI would occur, but are not simulated in the calculation.
70.	S15.2.2.3.3	Identify events where SCRRI/SRI would occur, but is not simulated in the calculation.
71.	S15.2.2.4.1	Changed "high velocity separator" to "moisture separator" for clarity.
72.	S15.2.2.5.1	Changed "high velocity separator" to "moisture separator" for clarity.
73.	S15.2.2.5.3	Identify events where SCRRI/SRI would occur, but is not simulated in the calculation.
74.	S15.2.2.5.3, 2 <sup>nd</sup> para., new 2 <sup>nd</sup> and 3 <sup>rd</sup> sentence	Added new sentences in response to RAI 15.2-41. Since this response, the analysis was reperformed out to a longer time per the NRC’s recommendation; therefore, the added sentences are no longer applicable and were deleted.
75.	S15.2.3	Deleted first sentence because it contradicts the rest of S15.2.3.
76.	S15.2.3.1.1	Discussion of “upscale rod block/scram” is deleted consistent with update in DCD Chapter 7 Rev 5. APRM high flux trip serves as backup.
77.	S15.2.3.1.3	Clarification that it is the reactor period that causes a rod block.
78.	S15.2.3.2.1	Switched order of first and second paragraphs and removed redundant sentences.

Item	Location	Description of Change
79.	S15.2.4.1.3	Deleted "and enthalpy, startup time", and replaced "flow rate" with "valve opening time" for appropriateness.
80.	S15.2.5.1.1	Added text to indicate improved fault tolerance for control actuators in SB&PC for TCVs and turbine bypass valves.
81.	S15.2.8, Ref. 15.2-2, 15.2-3 and note	Revised references and added note in response to RAI 4.2-28.
82.	T15.2-1	Steady state analyses are updated due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern. Calculated steady-state values are updated accordingly. "Reference" values were also added to document values used in the figures.
83.	T15.2-1	Added units (s) to TSV or TCV delay time and to the High Flux Trip time constant.
84.	T15.2-1	The TCV closure time is revised to credit the high flux scram.
85.	T15.2-1 and footnotes 5 and 6	The high flux trip setpoint as a function of FW temperature is added.
86.	T15.2-1	Made values and units of flow rate and temperature consistent.
87.	T15.2-2 & T15.2-3	Tables updated in response to RAI 15.2-16 S01.
88.	T15.2-4a	Analyses are updated due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern. All revised analyses in 15.2 assume the "bounding" steamline, therefore, the "historical" discussion is no longer applicable and is deleted.
89.	T15.2-5	SCRRI/SRI assumptions are updated in response to RAI 15.2-27. Subsequently, they were revised again for reanalysis due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern.

Item	Location	Description of Change
90.	T15.2-6	1TCVFC analysis is updated due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern. Credit is taken for the high flux scram.
91.	T15.2-8	LRWBP analysis is updated due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern.
92.	T15.2-9	LRHBP analysis is updated due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern.
93.	T15.2-10	TTWBP analysis is updated due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern.
94.	T15.2-11	TTHBP analysis is updated due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern.
95.	T15.2-11, last row	Revised event in response to RAI 15.2-41.
96.	T15.2-13	For clarity, changed "long term" to "> TEND, where TEND is the end time (available from TRACG plot)."
97.	T15.2-14	Change "inch" to "inches Hg" as it is the customary unit for this variable.
98.	T15.2-15	For clarity, changed "long term" to "> TEND, where TEND is the end time (available from TRACG plot)."
99.	T15.2-15	Correct significant figures of "Level 2 water level is reached."
100.	T15.2-17	IICI analysis is updated due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern.
101.	T15.2-17	Replace "MCPR" with "CPR". "MCPR" is incorrect term for variable.
102.	T15.2-19	For correctness, text changed to "Initiate simulated increase in speed of one FW pump. The maximum individual pump flow is 75% at rated conditions, resulting in a total flow from all three pumps of 142%."



<b>Item</b>	<b>Location</b>	<b>Description of Change</b>
103.	T15.2-20, 2 <sup>nd</sup> row	Revised 2nd row in response to RAI 15.2-33.
104.	T15.2-23, 1 <sup>st</sup> row	“SRNM – Neutron Flux High” is deleted from the table because it is not required in safety analyses.
105.	T15.2-23	Identify SCRRI/SRI times, TSV motion delay.
106.	T15.2-23	Updated Actuation Time Delay (including footnote 4) and the RPS control logic delay for TSV and TCV in response to RAI 15.2-16 S01.
107.	T15.2-23	In response to RAI 16.2-186, the naming of the Scram Accumulator Charging Water Header Pressure – Low-Low setpoint is clarified.
108.	T15.2-23	Identify SCRRI/SRI times.
109.	T15.2-23, last row	Changed “High” to “High-High” for clarification.
110.	T15.2-23 and footnote 12	The rest of the table is updated in response to RAI 21.6-103.
111.	T15.2-23, footnote 14	Note added to clarify “Initiating System” names.
112.	F15.2-1	LOFWH analysis is updated due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern.
113.	F15.2-2	1TCVFC analysis is updated due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern.
114.	F15.2-4	LRWBP analysis is updated due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern.
115.	F15.2-5	LRHBP analysis is updated due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern.
116.	F15.2-6	TTWBP analysis is updated due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern.
117.	F15.2-7	TTHBP analysis is updated due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern.
118.	F15.2-9a	Core Flow in Figure updated to account for negative flow.

Item	Location	Description of Change
119.	F15.2-10a	Core Flow in Figure updated to account for negative flow.
120.	F15.2-11	IICI Analysis is updated due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern.
121.	F15.2-11c	Corrected L1 value.
122.	F15.2-13g	The entries in the plot legend corrected to reflect the plots.
123.	F15.2-15h	Core Flow in Figure updated to account for negative flow
124.	F15.2-17	Added figure in response to RAI 4.3-17.
125.	S15.3	As a result of change in Chapter 11 reactor coolant source term, the accident doses were recalculated and the tables updated for selected coolant release accidents.
126.	S15.3.1	Revise the name of the LOFWH event to include the FW Controller Failure.
127.	S15.3.1.1	Revised the discussion to clarify that there are 2 events considered: Loss-of-FW-Heating-with SCRRRI/SRI Failure and FW Controller Failure.
128.	S15.3.1.1	Changed "(Figure 4.4-1)" to "(Figure 4.4-1 and Figure 15.2-17)" to indicate relevant references.
129.	S15.3.1.2, 1 <sup>st</sup> para., new 3 <sup>rd</sup> sentence	Added sentence in response to RAI 15.3-35.
130.	S15.3.1.3	For clarity in interpreting the reference to Figures, inserted the sentence: "Reference to figure header number ", after the first occurrence of a typical Figure number series (e.g. 15.2-1a-h) in Sections 15.2 and 15.3, implies all figures in series.
131.	S15.3.3.1	Added text to indicate improved fault tolerance for control actuators in SB&PC for TCVs and turbine bypass valves.

<b>Item</b>	<b>Location</b>	<b>Description of Change</b>
132.	S15.3.3.2.3	Added text to clarify that for the Pressure Regulator Failure – Opening of All Turbine Control and Bypass Valves case, the duration and magnitude of the depressurization is longer by isolating the reactor based on dome pressure and, therefore, produces more limiting results.
133.	S15.3.3.3.2	1st paragraph, 1st sentence, deleted "steam line" for consistency with TRACG analysis in Figure 15.3-3.
134.	S15.3.4.1	Added text to clarify improved fault tolerance with triplicate digital control system; and that no credible single failure in the control system results in a minimum demand to all turbine control valves and bypass valves.
135.	S15.3.5.1	Added text to clarify improved fault tolerance with triplicate digital control system; and that no credible single failure in the control system results in a minimum demand to all turbine control valves and bypass valves.
136.	S15.3.5.3.1	Identify events where SCRRI/SRI would occur, but is not simulated in the calculation.
137.	S15.3.5.3.2	All revised analyses in 15.2 and 15.3 assume the “bounding” steamline, therefore, the “historical” discussion is no longer applicable and is deleted.
138.	S15.3.6.1	Changed "high velocity separator" to "moisture separator" for clarity.
139.	S15.3.6.1	Added text to clarify improved fault tolerance with triplicate digital control system; and that no credible single failure in the control system results in a minimum demand to all turbine control valves and bypass valves.
140.	S15.3.6.3.1	Identify events where SCRRI/SRI would occur, but is not simulated in the calculation.

Item	Location	Description of Change
141.	S15.3.8	Revised RWE analyses based on revised core loading pattern. Clarification provided that the failure for manual withdrawal of in-sequence rods is assumed to be the SRNM short period block/scram. Discussion is added on the consequences of delayed SRNM response times.
142.	S15.3.8.1, 3 <sup>rd</sup> para.	Discussion of “upscale rod block/scram” is deleted consistent with update in DCD Chapter 7 Rev 5. APRM high flux trip serves as backup.
143.	S15.3.8.1, 4 <sup>th</sup> para., 2 <sup>nd</sup> sentence	Sentence revised for consistency with Subsection 15.2.3.1.1.
144.	S15.3.8.2.2	Clarifies that if the SRNM period-based trip fails, the APRM high-flux scram terminates the event.
145.	S15.3.8.3.2	Discusses changes to analysis conditions, analysis results, and evaluation criteria.
146.	S15.3.8.3.3	Discusses changes to analysis conditions, analysis results, and evaluation criteria.
147.	S15.3.13.2	Operator action revised in response to RAI 21.6-103
148.	S15.3.14.1	Changed text to include additional Section references for appropriateness.
149.	S15.3.15	Stuck-Open Safety Relief Valve Analysis is updated due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern.
150.	S15.3.15.1	Added “to maximize depressurization” to contributions from HP CRD for clarification.
151.	S15.3.15.2	Operator action revised in response to RAI 21.6-103.
152.	S15.3.15.3	Clarifies the analysis conditions, and corresponding update to core and system performance discussion.
153.	S15.3.18, Ref. 15.3-4, 15.3-5 and note	Revised references and added note in response to RAI 4.2-28.

<b>Item</b>	<b>Location</b>	<b>Description of Change</b>
154.	T15.3-1a	Units for Max Simulated Thermal Power trip changed to “% NBR.” For initial power operation of 100% (all Infrequent events in this table), this results in no difference in the values.
155.	T15.3-1a, 15.3.2	Values revised for “FW Controller Failure – Maximum Flow Demand” in response to RAI 15.2-50.
156.	T15.3-1a	Analyses are updated due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern. “SRI” is added to the event title of LOFWH with SCRRI/SRI failure. All revised analyses in 15.3 assume the “bounding” steamline, therefore, footnote 5 was deleted.
157.	T15.3-1b	The Control RWE event during startup is revised due to the updated core loading pattern.
158.	T15.3-2	LOFWH with SCRRI/SRI Failure Analysis is updated due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern.
159.	T15.3-3, 2 <sup>nd</sup> through 6 <sup>th</sup> rows	Revised times in response to RAI 15.2-50.
160.	T15.3-3, last row	Changed “Later” to “>20.0” in response to RAI 15.2-51.
161.	T15.3-6a	LRNBP is updated due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern.
162.	T15.3-6b	Deleted table.
163.	T15.3-6c	Deleted table.
164.	T15.3-7	TTNBP is updated due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern.
165.	T15.3-7	Corrected the description of events, and event times.
166.	T15.3-8	Added a footnote at the bottom of the Table 15.3-8 to references Figure 15.3-7.

Item	Location	Description of Change
167.	T15.3-12	Stuck-Open SRV Analysis is updated due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern.
168.	T15.3-12	Change 85% to "85% open position" for clarity.
169.	T15.3-12, 13, 15, 16, 18a, 18b, 19, 22, & 23.	Values revised to be consistent with supporting analyses, which were updated due to the development of a revised coolant inventories.
170.	T15.3-13, line item I. C	Change text from "Number of fuel rods in the core" to "Equivalent number of full length fuel rods in core." To provide the correct definition.
171.	T15.3-13, line item III.C	Values revised to be consistent with the supporting analysis, which was revised to be consistent with a design change that increased CR EFU flow rate.
172.	T15.3-14, T15.3-15, & T15.3-16	Values revised to be consistent with supporting analysis, which was updated due to the development of a new GE14E core specific source term.
173.	T15.3-17	Line Item II.C revised to be consistent with a design change that increased CR EFU flow rate.
174.	T15.3-18, 19	Values revised to be consistent with supporting analysis, which was updated due to the development of a new liquid radwaste tank inventories in Tables 12.2-13a through 12.2-13g.
175.	T15.3-19	CR dose revised to be consistent with supporting analysis, which was updated to be consistent with a design change that increased CR EFU flow rate.
176.	F15.3-1	LOFWH with SCRRI/SRI Failure Analysis is updated due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern.
177.	F15.3-2a to F15.3-2g	Figures revised in response to RAI 15.2-50.
178.	F15.3-2b	Added a note below the Figure 15.3-2b stating that the right y-axis is not used.
179.	F15.3-3e	Changed figure to position the plot legend box correctly, and to display time scale values on the x-axis.

Item	Location	Description of Change
180.	F15.3-4a	Core Flow in Figure updated to account for negative flow.
181.	F15.3-5	LRNBP is updated due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern.
182.	F15.3-6	TTNBP is updated due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern.
183.	F15.3-7a	The Control RWE event during startup is revised due to the updated core loading pattern.
184.	F15.3-7b	Previously Figure 15.3-7a (Figure numbers F15.3-7a and 15.3-7b have been renamed in text and Figure titles to provide a logical order of occurrence in the Section.
185.	F15.3-9	Stuck-Open SRV Analysis is updated due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern.
186.	S15.4	As a result of change in Chapter 11 reactor coolant source term, the accident doses were recalculated and the tables updated for selected coolant release accidents.
187.	S15.4.1.3.3	Added definitions for the terms in the terms in all the equation and provided proper units.
188.	S15.4.1.3.3	Second equation in S15.4.1.3.3, KE1 changed to E1, variables defined and proper units provided.
189.	S15.4.4.2.1, 2 <sup>nd</sup> para., 1 <sup>st</sup> sentence	“For dose consequences” was added to clarify what “bounding” refers to in the LOCA analysis.
190.	S15.4.4.2.1, 2 <sup>nd</sup> para., 2 <sup>nd</sup> sentence	Sentence revised for clarification during Revision 5 process, but was not incorporated.
191.	S15.4.4.2.3	Change made to clarify which EFUs are being referred to.
192.	S15.4.4.5.2. 1 <sup>st</sup> para	Deleted reference to subsection 15.4.4.5.
193.	S15.4.4.5.2, 2 <sup>nd</sup> para., 2 <sup>nd</sup> sentence	Value changed in response to RAI 6.2-165 S01.

Item	Location	Description of Change
194.	S15.4.4.5.2, 7 <sup>th</sup> para., last sentence	Changed “will be” to “is.”
195.	S15.4.4.5.2.3, new 5 <sup>th</sup> para.	Paragraph added in response to RAI 6.2-165 S01.
196.	S15.4.4.5.4	Corrected the reference from Table 15.4-9 to 2.0-1.
197.	S15.4.5.3.1	Subsection and Appendix references provided for the mathematical model of mass release.
198.	S15.4.6.1	Text changed to clarify FMCRD separation detection devices.
199.	S15.4.6.2	Wording changed to clarify meaning.
200.	S15.4.6.2	Changed 3rd bullet to clarify the mechanical failure.
201.	S15.4.6.2	Change 2nd paragraph to reword the text related to coupling failure.
202.	S15.4.6.3.1	Text changed to clarify the control rod drop event.
203.	S15.4.9.1	Removed “the primary” from the sentence.
204.	S15.4.9.5	Corrected the Subsection number in 5th paragraph.
205.	S15.4.12	Updated Reference 15.4-13.
206.	S15.4.12	Updated Reference 15.4-19.
207.	S15.4.12	Reference added in response to RAI 6.2-165 S01
208.	T15.4-1, note	Note added in response to RAI 15.4-1 S02.
209.	T15.4-3,3a,4	Values revised to be consistent with supporting analysis, which was updated due to the development of a new source term.
210.	T15.4-4	Updated the assumed inleakage value in the footnote.
211.	T15.4-5	The primary containment total leak rate and the reactor building mixing volume updated in response to RAI 6.2-165 S01.
212.	T15.4-5	The Control Room EFU intake flow is revised.
213.	T15.4-6,6a,7,7a,8,8a	All table entries were changed to be consistent with the supporting analysis that was updated.



Item	Location	Description of Change
214.	T15.4-9	Values revised to be consistent with supporting analysis, which was updated due to the development of a new source term.
215.	T15.4-11	Line Item III.C revised to be consistent with a design change that increased CR EFU flow rate.
216.	T15.4-11	Deleted Line items I.E and I.F for the off gas system release rate as these values are not used in the supporting analysis. Line item IV – deleted last row in table. Line item IV.A – deleted the EAB X/Q value as this is reported twice.
217.	T15.4-12	Table revised in MFN 08-729.
218.	T15.4-13	Changed decimal place.
219.	T15.4-14	Line Item III.C revised to be consistent with a design change that increased CR EFU flow rate.
220.	T15.4-14, footnote	For clarity and appropriateness, , text changed to "+ Table 2.0-1 provides the same X/Q value for unfiltered inleakage for both the emergency air intakes the normal intake (Control Building Louvers location); therefore, only one set of X/Q values is required for control room dose calculations."
221.	T15.4-15	FW line break source term changed from steam to liquid.
222.	T15.4-16	FW line break source term changed from steam to liquid.
223.	T15.4-16	Row headers changed to be consistent with other dose results tables in Section 15.4.
224.	T15.4-17	Line Item III.C revised to be consistent with a design change that increased CR EFU flow rate.
225.	T15.4-17	The English units in Items in I.C. and I.D. corrected.
226.	T15.4-21	Line Item III.C revised to be consistent with a design change that increased CR EFU flow rate.

Item	Location	Description of Change
227.	T15.4-23	CR dose revised to be consistent with supporting analysis, which was updated for a design change that increased CR EFU flow rate. Row headers changed to be consistent with other dose results tables in Section 15.4.
228.	F15.4-1	Figure on LOCA radiological paths have been revised.
229.	F15.4-4	Plot revised to be consistent with supporting analysis, which was updated to incorporate a new source term for a new GE14E specific source term.
230.	F15.4-4	Added "One Sievert is equal to 100 rems." for providing conversion to customary units.
231.	S15.5.1.1	Added sentence to 2nd paragraph to clarify that the flux signal is derived from the APRM.
232.	S15.5.1.3	Clarification made to note that SRVs and SVs are used to mitigate an ATWS event rather than "they are needed."
233.	S15.5.1.4	Removed the reference to Subsection 15.3.2 as it is not an applicable reference for Nuclear Boiler System overpressure protection evaluations.
234.	S15.5.4.3.4	For correct definition and consistency with Ch. 7, changed "upon APRM not downscale" to "with SRNM ATWS permissive for three minutes or greater". Changed the text "three minutes" to "three minutes or greater."
235.	S15.5.4.3.4	Added sentence to 4th bullet for consistency with Section 7.8.1.1.2.
236.	S15.5.4.3.6	Deleted "MSIV closure" and added "turbine trip with turbine bypass" in item 3, paragraph 4, for ATWS stability analysis.
237.	S15.5.4.3.6	Clarification is added. ATWS stability case is revised due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern.
238.	S15.5.4.3.6, Loss of FW Heating	No operator action is required. Clarification is made to avoid any confusion.

Item	Location	Description of Change
239.	S15.5.4.3.6	Added a sentence to indicate boron concentration buildup leads to hot shutdown.
240.	S15.5.5	Criteria for SBO is clarified that either hot or stable shutdown must be met.
241.	S15.5.5.1	Added references to Sections 7.2 and 7.3 in relation to containment isolation valve control, closure, and position indication.
242.	S15.5.5.1	Added sentences to 4th bullet to refer to power supply described in Subsection 8.3.2.1.1, and SBO requirements for required power CFR, Regulatory Guides and SRP.
243.	S15.5.5.3	SBO Analysis is updated due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, updated core loading pattern, and revised location of the wide range lower tap.
244.	S15.5.5.3	Added “or stable” twice in 2nd paragraph to refer to hot or stable shutdown after an SBO event.
245.	S15.5.5.3	Correct figure number.
246.	S15.5.6	Criteria for Safe Shutdown Fire is clarified that either stable shutdown must be met.
247.	S15.5.6.3	Deleted “hot” and added “stable” to 3rd paragraph to clarify the type of shutdown.
248.	S15.5.9, Ref. 15.5-3, 15.5-6 and note	Revised references and added note in response to RAI 4.2-28.
249.	T15.5-1b	MSIVF Analysis is updated due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern.
250.	T15.5-2, rows 6-9, Bounding Value column	Updated bounding values as a result of ATWS analysis update due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern.
251.	T15.5-2 T15.5-3	Made significant figures consistent.
252.	T15.5-3	Included values in US customary units.
253.	T15.5-3, footnote 2	Sentence deleted for consistency with same deletion made in NEDO-33338 Rev 1.

Item	Location	Description of Change
254.	T15.5-4c, Values and Time (s) columns	Updated 'Value' and "Time (s)" as a result of ATWS analysis update due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern.
255.	T15.5-4e, MSIV Closure SLC System Bounding Case column	Updated 'MSIV Closure SLC System Bounding Case' column as a result of ATWS analysis update due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern.
256.	T15.5-10a	Added a reference to Subsection 8.1.1 for "Island Mode". Also rounded numbers in the table to display appropriate number of significant digits.
257.	T15.5-10b	SBO Analysis is updated due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, updated core loading pattern, and revised location of the wide range lower tap.
258.	Figures 15.5-3a thru 15.5-3d	Updated figures as a result of ATWS analysis update due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern.
259.	F15.5-9	ATWS stability case is revised due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern.
260.	F15.5-9	Added a footnote to identify the channels.
261.	F15.5-9	Update figure to specify that 151 and 262 refer to symmetrically located fuel channels.
262.	F15.5-10	SBO Analysis is updated due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, updated core loading pattern, and revised location of the wide range lower tap.
263.	F15.5-10a through f	Deleted current figure title and replaced with "Station Blackout."
264.	F15.5-11	MSIVF Analysis is updated due to new level-2 PC version of TRACG, updated TRACG channel loss coefficient, and updated core loading pattern.
265.	F15.5-11g	Added a plot to display information in Figure 15.5-11a from 0 to 5 s.

<b>Item</b>	<b>Location</b>	<b>Description of Change</b>
266.	S15A	The failure frequency of the SRVs and DPVs is updated based on the updates in DCD Chapter 7 as a result of RAI 7.1-139.
267.	S15A.2, 2 <sup>nd</sup> para., new 1 <sup>st</sup> and 2 <sup>nd</sup> sent.	Sentences added to clarify that the detailed design is not set by 15A analyses.
268.	S15A.3.3.2, 4 <sup>th</sup> para.	Reworded the sentence on beta factor for clarity.
269.	S15A.3.6.2, 1 <sup>st</sup> sentence, Failure of Redundant Temperature Sensors	Inserted the word "probability" to provide proper context.
270.	S15A.3.6.2, 3 <sup>rd</sup> para., pg 15A-10	Corrected "announced" to "annunciated."
271.	S15A.3.6.2, 1 <sup>st</sup> para., pg 15A-11	Text changed to include frequency and requirements for Tech Spec surveillance.
272.	S15A.3.7.1	Corrected, to include appropriate Section references.
273.	S15A.3.8.2, "Spurious Actuation Signal"	Paragraph revised to reflect the design changes implemented in Section 7.3.
274.	S15A.8.3.2, last para.	IORV frequencies revised to reflect the design changes implemented in Section 7.3.
275.	S15A.3.9.2.2	Subsection revised to reflect the design changes implemented in Section 7.3.
276.	S15A.3.9.2.2.1	Subsection deleted to reflect the design changes implemented in Section 7.3.
277.	S15A.3.9.1	Subsection revised to reflect the design changes implemented in Section 7.3.
278.	S15A.3.9.1	Subsection revised to reflect the design changes implemented in Section 7.3.
279.	S15A.3.9.2.2.2	Subsection revised to reflect the design changes implemented in Section 7.3.
280.	S15A.3.9.2.2.3	Subsection revised to reflect the design changes implemented in Section 7.3.
281.	S15A.3.9.2.2.4	Subsection revised to reflect the design changes implemented in Section 7.3.
282.	S15A.3.9.2.2.5	Subsection deleted to reflect the design changes implemented in Section 7.3.

<b>Item</b>	<b>Location</b>	<b>Description of Change</b>
283.	S15A.3.9.2.2.6	Subsection deleted to reflect the design changes implemented in Section 7.3.
284.	S15A.3.9.2.2.7	Subsection revised to reflect the design changes implemented in Section 7.3.
285.	S15A.3.9.3	Subsection revised to reflect the design changes implemented in Section 7.3.
286.	S15A.3.13.2 S15A.3.13.3 S15A.3.14.2 S15A.3.14.3 S15A.3.16.2 S15A.3.16.3 T15A-3	Updated significant figures to be consistent with all reported frequency numbers.
287.	S15A.3.13.2.1, 2 <sup>nd</sup> para.	Changed provide the correct reference.
288.	S15A.3.13.2.1, 2 <sup>nd</sup> para.	Corrected the equation to change to superscript.
289.	S15A.3.14.2	Provided a reference for completeness.
290.	S15A.3.15.2, 1 <sup>st</sup> para	Deleted “preventing” and added “reducing the probability of.”
291.	S15A.5	Deleted last 4 references.
292.	S15A.5	Revised reference 15A-2 to current revision of NEDO-33201.
293.	T15A-1	Table revised to reflect the design changes implemented in Section 7.3.
294.	F15A-1a through F15A-2s	Figures revised to reflect the design changes implemented in Section 7.3.
295.	F15A-1b	Added definition of ICN# and MPN# below the graphic for clarity.
296.	T15A-2	Table footnotes revised to clarify entries in the Table.
297.	T15A-2	Table revised for design changes in section 7.3.
298.	T15A-3	Table revised to reflect the design changes implemented in Section 7.3.

Item	Location	Description of Change
299.	S15B & T15B-1	Updated due to the development of a new source term.
300.	S15C.2.4, 2 <sup>nd</sup> para.	Modified text to define radiation G value.
301.	S15C.2.6	Included US customary units.
302.	S15C.6	Added month and year to Ref 15C-1.
303.	S15C.6	Added month and year to Ref 15C-2.
304.	S15C.6	Added month and year to Ref 15C-6.
305.	S15D	Appendix revised to be consistent with Rev 1 of NEDO-33338.
306.	S15D.1	Changed first paragraph to include discussion on ESBWR Power-Feedwater Temperature operating domain.
307.	S15D.1	Modified text related to LOCA/ECCS, LOCA/Containment, evaluations for feedwater temperature variations.
308.	S15D.2	Modified text for limiting AOO analysis with feedwater temperature variations.
309.	S15D.3	Modified text for limiting infrequent event analysis with feedwater temperature variations.
310.	S15D.4, 3 <sup>rd</sup> para.	Clarified margin in the context of uncertainty.
311.	S15D.4	Deleted the word 'nominal.'
312.	S15D.5	Added "100% power" before 176.7 and replaced "high" with 85% power.
313.	S15.D.6	Added "SRI" to event name to clarify that both SCRRI and SRI fail.
314.	S15D.6	Added references "15D-2 and Sections 15.2 and 15.3."
315.	S15D.6	Added 4th bullet.
316.	S15D.6	Modified last paragraph.
317.	S15D.6	Changed "off-rated" to "power less than rated, or feedwater temperature different from nominal band."