

ESBWR DCD Tier 2 Chapter 19
26A6642BY Revision 5 to Revision 6 Change List

Item	Location	Description of Change
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.	T19.1-1, 4 th row	Additional information added to provide more description of the containment venting function.
3.	S19.1.2, 2 nd para., 4 th Bullet	Clarification that conditional containment failure probability goal applies to at-power events.
4.	S19.2.3.1.1, 2 nd para	Updated the risk significant operator actions.
5.	S19.2.3.1.1, 3 rd para	Updated the top ten dominant accident scenarios.
6.	S19.2.3.1.2, last para	Updated the important Level 2 initiating events.
7.	S19.2.3.2.1, 4 th para	Updated the important fire-induced initiating events.
8.	S19.2.3.2.1, 8 th para	Updated the fire PRA offsite consequences summary.
9.	S19.2.3.2.2, 4 th para	Updated the important flooding-induced initiating events.
10.	S19.2.3.2.2 para. 4	Updated to delete insight on the importance of depressurization systems based on sensitivity study results in NEDO-33201 Section 22.13.
11.	S19.2.3.2.2, 8 th para	Updated the flooding PRA offsite consequence summary.
12.	S19.2.3.2.3, 4 th para	Updated the high wind offsite consequences summary.
13.	S19.2.3.2.4, 1 st para.	Paragraph revised in response to RAI 19.2-92.
14.	S19.2.3.2.4, 3 rd para.	Paragraph revised and COL Holder item 19.2.6-1-H was rewritten as COL Applicant item 19.2.6-1-A based on NRC request. The change was reviewed and accepted by both NRC and DCWG.
15.	S19.2.4.1.1, 3 rd para	Updated the important shutdown operator actions.
16.	S19.2.4.1.2	Updated the summary of shutdown fire initiating events and operator actions.

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17.	S19.2.4.1.3	Updated the summary of shutdown flooding initiating events and operator actions.
18.	S19.2.4.1.3, 1 st para	Paragraph revised in response to RAI 19.2-120.
19.	S19.2.4.1.3	Updated to delete insight on the importance of depressurization systems based on sensitivity study results in NEDO-33201 Section 22.13.
20.	S19.2.4.1.4	Updated the summary of shutdown high winds insights.
21.	S19.2.4.1.5	Remove [comment] notations and also replace wording from DCD Rev 5 where “high winds” was substituted for “seismic.”
22.	S19.2.4.3, 1 st para, 1 st sentence	Sentence added in response to RAI 19.2-120.
23.	S19.2.4.4, 1 st para, 1 st sentence	Sentence added in response to RAI 19.2-120.
24.	S19.2.4.4, new 2 nd para	Paragraph added in response to RAI 19.2-120.
25.	S19.2.6, COL 19.2.6-1-H	COL Holder item 19.2.6-1-H was rewritten as COL Applicant item 19.2.6-1-A based on NRC request. The change was reviewed and accepted by both NRC and DCWG.
26.	T19.2-3, 6 th row	Added descriptor for clarification.
27.	T19.2-3, 6 th row	Deleted third sentence to remove reference.
28.	T19.2-3, 15 th row	Updated the risk significant operator actions.
29.	T19.2-3, 23 rd row	Deleted insight on screening out shutdown LOCAs and operator – induced leaks because the shutdown PRA is updated to model these events.
30.	T19.2-3, 23 rd row	Added the need for DPS control for IC/PCCS pool cross-connect valves.
31.	T19.2-3, 29 th row	Added BiMAC design requirement in response to RAI 19.2-127
32.	T19.2-3, 32 nd row	Added bullet for additional insight on important fire barriers.
33.	T19.2-3, 40 th row	Revised to be consistent with TS LCO 3.5.3 conditions.

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34.	T19.2-3, 43 rd row	“Insight or Assumption” column entry revised in response to RAI 19.2-121. These changes were rejected and have been superseded by RAI 19.2-121 S01.
35.	T19.2-3, 43 rd row	Insight or Assumption column entry revised in response to RAI 19.2-121 S01.
36.	T19.2-3, last row	Row added in response to RAI 19.1.0-4 S02.
37.	T19.2-4, Plant Structures	Changed “Reactor Pressure Vessel Support” to “RPV Support Brackets” to conform to standard notation and added “Firewater Service Complex” in response to RAI 19.2-92.
38.	T19.2-4, Fire Protection Water System	Deleted the second “Piping” in the list in response to RAI 19.2-92.
39.	T19.2-4, Note 1, 1 st and 2 nd sentences	Sentences revised in response to RAI 19.2-92.
40.	T19.2-4, Note	Sentence added to note in response to RAI 19.2-122.
41.	S19.3.1.6, 2 nd sentence	Revised sentence for clarification.
42.	S19.3.2.6, 3 rd para	Deleted description as “refractory” material, added discussion on non-condensable gas generation in response to RAI 19.2-127.
43.	F19.3-1	Deleted description as “ceramic” layer, deleted note-no longer applicable in response to RAI 19.2-127
44.	S19.4.3.3	Clarification states that PRA modeling changes made during the design certification process will be incorporated into the site-specific PRA that is required one year prior to fuel load.
45.	S19.5, 5 th para.	Clarification that conditional containment failure probability goal applies to at-power events.
46.	S19A.3.1.4, 1 st para, last sentence	Sentence revised in response to RAI 9.4-31 S01.
47.	S19A.3.1.4, 2 nd para, new last sentence	Sentence added to end of paragraph in response to RAI 9.4-31 S01.
48.	S19A.3.3, 1 st para., new 12 th bullet	Bullet added to clarify that Ancillary Diesel Building HVAC System is a RTNSS function.

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49.	S19A.4.2, 4 th para., 4 th sentence	Sentence revised for consistency among descriptions of SDG and ADG supporting functions in RTNSS discussions.
50.	S19A.4.3.7, 1 st and 2 nd paras	Paragraphs revised in response to RAI 19.1-100 S02.
51.	S19A.6.1.1.1, 1 st para., 1 st and 2 nd sentences	Sentences revised due to updated information in Tier 2, Section 7.1 and RAI 7.1-139.
52.	S19A.6.1.1.1, 1 st para., 1 st sentence	Sentence revised due to updated information in Tier 2, Section 7.1 and RAI 7.1-139.
53.	S19A.6.1.1.1, 1 st para, 2 nd sentence	Sentence revised for additional clarification of GDCS squib valves.
54.	S19A.6.1.1.3, 1 st and 4 th para.	Paragraphs revised for additional clarification of GDCS squib valves.
55.	S19A.6.1.5.1, 1 st para., 3 rd sentence	Sentence revised for clarification.
56.	S19A.8.1, Subsection Title	Title revised in response to RAI 22.5-28.
57.	S19A.8.3, 4 th para, 1 st sentence	Sentence revised in response to RAI 22.5-9 S02.
58.	S19A.8.3, 8 th para, 2 nd sentence	Removed “to maintain structural integrity with a margin of safety that is equivalent to a Seismic Category I structure under SSE conditions” in response to RAI 22.5-25.
59.	S19A.8.3, 8 th para, 3 rd sentence	Sentence revised in response to RAI 3.2-66 S01.
60.	S19A.8.3, 9 th para, 1 st sentence	Sentence revised in response to RAI 22.5-9 S02.
61.	S19A.8.3, 9 th para, new 4 th and 5 th sentences	Sentences added in response to RAI 22.5-25.
62.	S19A.8.3, new 10 th para	Paragraph added in response to RAI 22.5-9 S02.
63.	S19A.8.4.4, 1 st para, 2 nd and 6 th sentence	Sentences revised in response to RAI 9.4-31 S01.
64.	S19A.8.4.9, 1 st para.	Paragraphs revised to clarify that Ancillary Diesel Building HVAC System is a RTNSS function.
65.	S19A.8.4.10, 1 st para.	Paragraph revised to clarify that Ancillary Diesel Building HVAC System is a RTNSS function.

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66.	S19A.8.4.10, 1 st para., 1 st sentence	Sentence revised for clarification.
67.	T19A-2	Editorial renumbering “ACLCO 3.3.6” to “ACLCO 3.3.5” for consistency with changes in response to RAI 22.5-22, MFN 08-637.
68.	T19A-2	Removed “B-“ from 2 table entries.
69.	T19A-2, “Ancillary Diesel Building HVAC”	Row added to clarify that Ancillary Diesel Building HVAC System is a RTNSS function.
70.	T19A-2, last 2 rows	Revised “Descriptions” and “Availability Controls” in last two rows.
71.	T19A-4, entire table	Changed “RTNSS B” to “RTNSS” and “RTNSS C” to “RTNSS” in response to RAI 22.5-5 S02.
72.	T19A-4, Notes (1) and (2)	Notes added in response to RAI 22.5-9 S02.
73.	T19A-4, “Ancillary DG Building”	Revised 1 st sentence under extreme wind and missiles capabilities of Ancillary DG Building in response to RAI 22.5-9 S02.
74.	T19A-4, “Ancillary DG Building,” 2 nd sentence	Revised 2 nd sentence under extreme wind and missiles capabilities of Ancillary DG Building in response to RAI 22.5-5 S02.
75.	T19A-4, “Electrical Building”	Revised 1 st paragraph under extreme wind and missiles capabilities of Electrical Building and Service Water Building in response to RAI 22.5-5 S02.
76.	T19A-4, “Turbine Building”	Revised extreme wind and missiles capabilities of Turbine Building in response to RAI 22.5-9 S02.
77.	New 19A.8.4.13 and 19A.8.14	Standby Liquid Control System Actuation/Feedwater Runback Logic and Control Room Habitability-Long Term Cooling Subsections added in response to RAI 22.5-29
78.	ACM Table of Contents	Delete AC 3.3.5, "Automatic Depressurization System (ADS) Inhibit," and renumber AC 3.3.6 to AC 3.3.5. See response to RAI 22.5-22.
79.	ACM Table of Contents	Revised Title of AC 3.7.5 to "Reactor Building HVAC Purge Accident Exhaust Filtration." See response to RAI 9.4-53.

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80.	ACM Table of Contents	Added new AC 3.7.6, "Control Room Heating and Ventilation System (CRHAVS) Post 72-Hour Long Term Cooling." See response to RAI 9.4-31 S01.
81.	AC 03.00.03	Revised to add requirement to manage the risk of the resulting unit configuration when entering ACLCO 3.0.3. See RAI 22.5-24 S01.
82.	AC 03.03.01 AC B 03.03.01	Revised ARI nomenclature. See response to RAI 16.2-135, Supplement 1.
83.	AC 03.03.01, ACSR 3.3.1.3	Revised ACSR to delete "for each required ARI Function automatic actuation division." Revised Frequency to delete "on a STAGGERED TEST BASIS." See response to RAI 22.5-22.
84.	AC B 03.03.01	Deleted last paragraph stating that Operability and surveillance testing of the RPS and NMS instrumentation providing signals to the ARI Function are provided by TS LCO 3.3.1.1 and LCO 3.3.1.4. See response to RAI 22.5-22.
85.	AC 03.03.02, ACLCO 3.3.2	Revised ACLCO to replace "SLC System actuation function" with the "Functions in Table 3.3.2-1" to be Available. See response to RAI 22.5-22.
86.	AC 03.03.02, Condition A	Revised Condition A and Required Action A.1 for consistency with the changes to ACLCO 3.3.2. See response to RAI 22.5-22.
87.	AC 03.03.02, ACSR Table	Added new ACSR 3.3.2.2 to "Verify RWCU/SDC isolation on receipt of an actual or simulated ATWS/SLC actuation signal" once every 24 months. Renumbered subsequent SRs. See response to RAI 22.5-22.
88.	AC 03.03.02, SR Table	Added new ACSR 3.3.2.3 to verify ADS Inhibit function actuation on receipt of an actual or simulated actuation signal. Renumbered subsequent SRs. See response to RAI 22.5-22, Supplement 1.
89.	AC 03.03.02, SR 3.3.2.2	Revised SR to delete "SLC actuation function of the ATWS/SLC automatic actuation," for consistency with changes to ACLCO 3.3.2. See response to RAI 22.5-22.

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90.	AC 03.02.02	Added new Table 3.3.2-1 to list the ATWS/SLC functions required to be available by ACLCO 3.3.2. See response to RAI 22.5-22.
91.	AC B 03.03.02	Revised first paragraph to delete statement that operability of the instrumentation sensors is addressed in TS 3.3.1.1. Added description of ADS Inhibit function. See response to RAI 22.5-22.
92.	AC B 03.03.02	Revised third paragraph to include additional discussion of RWCU/SDC isolation function. See response to RAI 22.5-22.
93.	AC B 03.03.02	Deleted fourth paragraph and inserted description of ADS - ATWS/SLC Inhibit function actuation signals. See response to RAI 22.5-22.
94.	AC B 03.03.02	Revised last paragraph by deleting first sentence discussion of RTNSS. ATWS/SLC is not a RTNSS system. See response to RAI 22.5-22.
95.	AC 03.03.03, ACSR 3.3.3.2	Revised SR to delete "for each required FWRB function automatic division. Revised SR Frequency by deleting "on a STAGGERED TEST BASIS." See response to RAI 22.5-22.
96.	AC B 03.03.03	Revised first paragraph by moving second sentence to third paragraph, deleted statement that operability of the instrumentation sensors is addressed in TS 3.3.1.1, and clarified that the FWRB function required by AC 3.3.3 is performed by DPS and FWCS. See response to RAI 22.5-22.
97.	AC B 3.3.3	Deleted second paragraph. See response to RAI 22.5-22.
98.	AC B 3.3.3	Revised third paragraph to clarify that the FWRB function required by AC 3.3.3 is processed by the DPS, revised list of actuation signals to reflect the DPS logic and added information moved from first paragraph. See response to RAI 22.5-22.
99.	AC B 3.3.3	Revised fourth paragraph to clarify that the function being discussed is the ATWS/SLC function. See response to RAI 22.5-22.

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100.	AC 03.03.03	Deleted AC 3.3.5 and associated Bases. ADS inhibit function is relocated to AC 3.3.2 and AC 3.3.6. AC 3.3.6 is renumbered as AC 3.3.5. See response to RAI 22.5-22.
101.	AC 03.03.05, LCO	Relocate the AC 3.3.5, "Automatic Depressurization System (ADS) Inhibit," function to AC 3.3.6 (Table 3.3.5-1). See response to RAI 22.5-22.
102.	AC 03.03.06, SR Table	Renumbered SRs to reflect renumbering of AC 3.3.6 as AC 3.3.5. See response to RAI 22.5-22.
103.	AC 03.03.06, Table 3.3.6-1	Renumbered Table to reflect renumbering of AC 3.3.6 as AC 3.3.5, clarified that the functions listed are those performed by DPS, and added the ADS - DPS Inhibit. See response to RAI 22.5-22.
104.	AC B 03.03.06	Revised list of diverse actuation Functions by adding reference pointers to the appropriate DCD location for additional information and inserted description of the ADS - DPS inhibit Function. See response to RAI 22.5-22.
105.	AC 03.03.02 ACTIONS	Revised to delete "required." See response to RAI 22.5-34.
106.	AC 03.03.02 ACSR 3.3.2.2	Revised ACSR 3.3.2.4 by deleting "on each required division." See response to RAI 22.5-22 S01. Note: ACSR 3.3.2.4 was renumbered from ACSR 3.3.2.2 in response to RAI 22.5-22 (MFN 08-637, dated August 22, 2008).
107.	AC 03.03.06 ACTIONS	Revised to delete "required." See response to RAI 22.5-34. Note: AC 3.3.6 was renumbered as AC B 3.3.5 in response to RAI 22.5-22 (MFN 08-637, dated August 22, 2008).
108.	AC 03.03.06 ACSR 3.3.5.1	Revised Frequency from '24 hours' to '12 hours.' See response to RAI 22.5-33. Note: AC 3.3.6 was renumbered as AC B 3.3.5 in response to RAI 22.5-22 (MFN 08-637, dated August 22, 2008).
109.	AC 03.03.06 ACSR 3.3.5.2	Revised Frequency from '24 months' to '92 days.' See response to RAI 22.5-33. Note: AC 3.3.6 was renumbered as AC B 3.3.5 in response to RAI 22.5-22 (MFN 08-637, dated August 22, 2008).

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110.	AC 03.05.01 ACLCO	Revised from "Two deluge valves" to "Six deluge valves." See RAI 22.5-22 S01.
111.	AC B 03.05.01	Revised from "Two deluge valves" to "Six deluge valves." Also clarified number of GDCS pools required to support the six deluge valves. See RAI 22.5-22 S01.
112.	AC 03.05.01 ACSR	Revised to incorporate a new ACSR 3.5.1.1 requiring a Channel Check every 12 hours on GDCS deluge associated drywell atmosphere thermocouples and lower drywell basemat thermocouples. See response to RAI 22.5-30.
113.	AC 03.05.01 ACSR	Revised to incorporate a new ACSR 3.5.1.3 requiring a Channel Calibration every 24 months on GDCS deluge associated drywell atmosphere thermocouples and lower drywell basemat thermocouples. See response to RAI 22.5-30.
114.	AC B 03.03.01	Revised first paragraph to insert a reference to Subsection 7.8.1.1.2. See response to RAI 22.5-38.
115.	AC B 03.03.02	Revised first paragraph to insert reference to Subsection 7.8.1.1.1, 7.4.1.2, and 7.8.1.1.1.2 for location of additional information related to the specified Functions. See response to RAI 22.5-38.
116.	AC B 03.03.02	Revised second paragraph to add discussion of number of divisions required for Function Availability. See response to RAI 22.5-22 S01.
117.	AC B 03.03.03	Revised third paragraph to insert references to Subsections 7.8.1.1.1 and 7.8.1.1.2. See response to RAI 22.5-38.
118.	AC B 03.03.06	Revised second bullet to include "Standby Liquid Control System" in list of ESF initiation logics provided by DPS. Note: See response to RAI 22.5-38. AC B 3.3.6 was renumbered as AC B 3.3.5 in response to RAI 22.5-22 (MFN 08-637, dated August 22, 2008).

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119.	AC 03.05.01.03, ACSR 3.5.1.3	Revised SR by deleting "for each required Deluge automatic actuation division. Revised SR Frequency by deleting "on a STAGGERED TEST BASIS." See response to RAI 22.5-22, Supplement 1.
120.	AC 03.07.01	Revised completion time for Condition C to be consistent with Condition B.
121.	AC 03.07.02	Revised Header to correct format. See RAI 22.5-41.
122.	AC B 03.07.02 /03	Clarified consistent with DCD design detail.
123.	AC 03.07.05	Revised system name to Reactor Building HVAC Accident Exhaust Filtration and included Bases discussion to acknowledge the design of two subsystems -- the second being the Reactor Building HVAC Online Purge Exhaust Filtration. See response to RAI 9.4-53.
124.	AC 03.07.05, ACSR 3.7.5.1	Revised the continuous run time from "10 hours" to "15 minutes." See response to RAI 9.4-53.
125.	AC 03.07.06	Added new AC 3.7.6, "Control Room Heating and Ventilation System (CRHAVS) Post 72-Hour Long Term Cooling," and associated Bases. See response to RAI 9.4-31 S01.
126.	AC 03.08.01 ACSR	Revise to include diesel generator Surveillances. See RAIs 22.5-45 and 22.5-46.
127.	AC 03.08.02 ACSR	Revise to include diesel generator Surveillances. See RAIs 22.5-45 and 22.5-46.
128.	AC B 03.08.01/2	Revise to include Bases associated with diesel generator testing. See RAIs 22.5-45 and 22.5-46.
129.	AC B 03.08.01/2	Delete statements that diesel generators are needed to recharge batteries for post-accident monitoring to be consistent with DCD design (i.e., function provided by the ancillary diesel generators).
130.	AC 03.08.03 ACSR	Revise to include diesel generator Surveillances. See RAIs 22.5-45 and 22.5-46.
131.	AC B 03.08.03	Revise to include Bases associated with diesel generator testing. See RAIs 22.5-45 and 22.5-46.

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132.	AC 04.01	Revised BIMAC descriptions to be consistent with Tier 1.
133.	AC 04.01.02	Clarify BiMAC material descriptor.
134.	A19B General	Certain tables in Appendix B are revised to include SI and US Customary units for clarification.
135.	A19B.1, 4 th para., 1 st sentence	Revised the 100% MWR pressure value due to design change.
136.	A19B.02.01, 2 nd para., 4 th sentence	Revised the 100% MWR pressure value due to design change.
137.	A19B.02.03, 3 rd para., 8 th and 10 th sentences	Revised the 100% MWR pressure value due to design change.
138.	A19B.02.04, 1 st para., 5 th to 7 th sentences	Revised the 100% MWR pressure value due to design change.
139.	A19B.07, 1 st para., 3 rd sentence	Revised the 100% MWR pressure value due to design change.
140.	A19B.08	Deleted Reference 19B-7 because it is not used in the text.
141.	T19B-5	Revised the significant digits on specific heat values for consistency.
142.	A19C General	Certain tables in Appendix C are revised to include SI and US Customary units for clarification.
143.	T19C-1	Revised the significant digits on specific heat values for consistency.
144.	A19D	Added appendix for new regulation on aircraft impact.