

Change List from DCD 19 Revision 4 to Revision 5

Item	Location	Description of Change
1.	S19.1.1 para 1	Added to explain terminology
2.	Entire Chapter	Made editorial changes in numerous locations to remove excessive spacing, correct punctuation, delete repeated words, correct misspelling, and correct grammar. Spelled out acronyms where appropriate and edited Acronym list where needed.
3.	S19.1.5	Updated reference
4.	T19.1-1 rows 8,11,18,25,27	Added new design information
5.	S19.2.1, para 2, 3 ,4 & 5	Added for clarity in response to RAI 19.1-157
6.	S19.2.2.1 para 2	Added clarification between PRA and HRA
7.	S19.2.2.1.1 para 2 bullet (2)	Revised “diesel-driven” to “diesel powered” to reflect design.
8.	S19.2.2.1.1 para 2 bullet (6)	Deleted “totally” for clarification
9.	S19.2.3.1 para 2,3,4,7	Changed “General” to “Generic” for clarification
10.	S19.2.3.1.1	Added reference to subsection
11.	S19.2.3.1.1 bullet 4,5,6,7	Revised order of sequence descriptions to reflect new quantification results
12.	S19.2.3.1.2 para 10	Moved information on insights from T19.2-3 row 2
13.	S19.2.3.2.2 para 5	Revised for clarification
14.	S19.2.3.2.3 para 1	Added new design information about motor driven pump
15.	S19.2.4.1.3	Revised in response to RAI 19.1-158
16.	S19.2.4.3, 1 st and 2 nd paras	Deleted first and second paragraph and added new paragraph to clarify offsite consequences in response to RAI 19.1-159.
17.	S19.2.7	Added reference 19.2-6 in response to RAI 19.1-149 S01
18.	T19.2-1 row 10 Late Containment Failure	Revised PCCS description to reflect addition of Vent Fans
19.	T19.2-1 row 11 Human Actions	Revised description of PRA modeling of operator events to be consistent with DCD Chapter 18
20.	T19.2-1 row 3	Revised pump description to reflect design change
21.	T19.2-2	Revised formatting, added standby and ancillary diesel generators in last row and modified PCCS description
22.	T19.2-3 Row 1	Deleted – already in S19.2.3.1.1
23.	T19.2-3 Row 2	Deleted discussion of most important Level 2 initiating events– Moved to S19.2.3.1.2
24.	T19.2-3 Row 3	Moved Insight on reliability of the containment barrier to Row 1
25.	T19.2-3 Row 4	Moved Insight on Level 3 results to Row 2
26.	T19.2-3 Row 5	Deleted Insight on ESBWR front-line safety systems – already in S19.2.3.1.4

Change List from DCD 19 Revision 4 to Revision 5

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27.	T19.2-3 Row 6	Deleted Insight on reducing reliance on AC Power – already in S19.2.3.1.4
28.	T19.2-3 Row 7	Deleted Insight on ATWS events are low contributor – already in S19.2.3.1.4
29.	T19.2-3 Row 8	Deleted Insight on LOCA, large diameter piping – already in S19.2.3.1.4
30.	T19.2-3 Row 9	Moved insight regarding that ESBWR reduces the LOCA frequency to Row 4
31.	T19.2-3 Row 10	Deleted Insight on probability of loss of containment heat removal – already in S19.2.3.1.4
32.	T19.2-3 Row 11	Moved – combined into Row 1
33.	T19.2-3 Row 12	Deleted Insight on dominating effects and single failure contributions – already in S19.2.3.1.4
34.	T19.2-3 Row 13	Deleted Insight on significant seismic contributors – already in S19.2.3.2.4
35.	T19.2-3 Row 14 LOCA Frequencies	Moved to Row 6 and Changed to Operational Program
36.	T19.2-3 Row 15	Moved to ‘Sensitivity Study Results on Human Error to Row 7 Changed to Operational Program
37.	T19.2-3 Row 16	Moved to ‘Sensitivity Study Results on squib valve failure to Row 8 Changed to Operational Program
38.	T19.2-3 Row 17	Moved to ‘Sensitivity Study Results on test and maintenance to Row 5
39.	T19.2-3 Row 18	Insight on accident sequences in which DPVs are challenged – moved to 19.2.3.1.4
40.	T19.2-3 Row 19	Deleted – Not a key insight
41.	T19.2-3 Row 20	Moved Design Requirement on FAPCS and FPS injection capability to Row 16 (RAI 19.1-157)
42.	T19.2-3 Row 21	Moved Design Requirement on CRD injection to Row 14
43.	T19.2-3 Row 22	Moved Design Requirement for DPS cabinet location to Row 17 (RAI 19.1-157)
44.	T19.2-3 Row 23	Moved Design Requirement on fire induced spurious actuations to Row 18 and reworded (RAI 19.1-157, RAI 19.1-150 S01)
45.	T19.2-3 Row 24	Moved Insight on core damage sequences involving ICS to Row 19 (RAI 19.1-157, RAI 19.1-150 S01)
46.	T19.2-3 Row 25	Moved Design Requirement about FAPCS and FPS injection capability to Row 20 (RAI 19.1-157)
47.	T19.2-3 Row 26	Moved operational Program on ATWS procedures to Row 28
48.	T19.2-3 Row 27	Moved operational Program on venting to Row 31

Change List from DCD 19 Revision 4 to Revision 5

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49.	T19.2-3 Row 28	Operational Program on shutdown fire watch revised in response to RAI 19.1-126 S01 and RAI 19.1-129 S01 and moved to Row 32
50.	T19.2-3 Row 29	Moved Operational Program on shutdown LOCAS and drywell hatch closure to Row 33
51.	T19.2-3 Row 30	Moved Operational Program recovery action for recovery of one train of RWCU/SDC to Row 34
52.	T19.2-3 Row 31	Combined Operational Program item regarding recovery of Service Water into Row 34
53.	T19.2-3 Row 32	Moved Operational Program prohibition of the Mode 6 unflooded condition to Row 36
54.	T19.2-3 Row 30	Deleted – duplicate of Row 33
55.	T19.2-3 Row 34	Moved Operational Program on operability of critical decay heat removal systems to Row 37
56.	T19.2-3 Row 35	Moved Operational Program assumption that water tight doors being closed to Row 38
57.	T19.2-3 Row 36	Moved Operational Program assumption crediting ADS during shutdown to Moved Operational Program Row 39
58.	T19.2-3 Row 37	Moved Operational Program assumption that GDCS is actuated on RPV level 1 to Row 40
59.	T19.2-3, new	Row 3, 9, 10, 11, 12, 13, 15, 21(RAI 19.1-157), 22(RAI 19.1-157), 23(RAI 19.1-157), 24(RAI 19.1-157), 25(RAI 19.1-157), 26, 27(RAI 19.1-157, RAI 19.1.0-4 S01), 28, 29, 35, 41, 42, 43, 44, 45, 46
60.	S19.3.1.6	Revised Heading Title for consistency
61.	T19.2-4, Note 1	Revised Note 1 for clarification in response to RAI 19.2-88.
62.	T19.2-4, title	Changed “>” to read “not less than” and added “*SSE” to title in response to RAI 19.2-88.
63.	S19.3.2.1.1	Revised Heading Title for consistency
64.	S19.3.2.1.1 para 5	Added information on design change
65.	S19.3.2.1.1 para 7	Added assumption about Passive Auto Catalytic Recombiners
66.	S19.3.2.6 bullet(4)	Added information in response to RAI 19.2-24 S01
67.	S19.3.2.7	Revised for clarification to show third valve is nonsafety-related.
68.	S19.3.3 para 1	Revised reference location from NEDO 33201 to Appendix B and Appendix C
69.	S19.4.2 para 1	Added to explain terminology
70.	S19.4.2 para 5,7,13	Revised terminology
71.	S19.4.2, para 4	Added sentence in response to RAI 19.1-156

Change List from DCD 19 Revision 4 to Revision 5

Item	Location	Description of Change
72.	S19A..1 para 4	Revised description of Criterion B to reflect change in criterion definition
73.	S19A.1.2	Deleted Heading for consistency
74.	S19A.2.1	Revised entire section to add description on design details and references to DCD sections.
75.	S19A.2.2	Revised for clarification
76.	S19A.3.1	Revised entire section to add description on design details (PCCS Vent Fans description added in response to RAI 6.2-139, Ancillary AC power changes affect several RTNSS criterion B1 and B2 SSCS, as explained in text) and added references to DCD sections.
77.	S19A.3.2	Revised typographical error in response to RAI 22.5-20
78.	S19A.3.3, new	A summary section of RTNSS findings added as new section.
79.	S19A.4.1	Revised entire section to add description on design details and references to DCD sections. Deleted qualitative discussions on external events (from S19A.4.2) because they have been quantified since Revision 4 and their results are considered in the discussion of the Focused PRA in this revision.
80.	S19A.4.2	Renumbered, formerly S 19A.4.3 - Revised para 4 for clarification. Deleted para 5 and moved it to S19A.4.5
81.	S19A.4.3.3 para 1,2	Renumbered, formerly S 19A.4.4.4 - Revised for clarification
82.	S19A.4.3.4	Renumbered, formerly S 19A.4.4.5 - Entire section revised for clarification
83.	S19A.4.3.6	Renumbered, formerly S 19A.4.4.7 - Entire section revised for clarification
84.	S19A.4.3.8 para 3	Renumbered, formerly S 19A.4.4.9 - Revised for clarification
85.	S19A.4.4	Renumbered, formerly S 19A.4.5 - Entire summary section revised to reflect changes
86.	S19A.5 para 2	Added from S19A.4.2.
87.	S19A.6	Entire section revised. PCCS Vent Fan description added in response to RAI 6.2-139, Further Assessment of Potential ASI added in response to RAI 22.5-17 S01.
88.	S19A.7	Entire section revised for clarification
89.	S19A.8.1	Revised for clarification
90.	S19A.8.1, title	Added "Availability Controls" for clarification
91.	S19A.8.2	Added para 2 to discuss QA and quality class information
92.	S19A.8.3 para 1,2	Revised to reflect changes to criterion B definition

Change List from DCD 19 Revision 4 to Revision 5

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93.	S19A.8.3 para 5	Deleted irrelevant discussion on fire standards
94.	S19A.8.3 para 7	Added information on equipment qualification requirements
95.	S19A.8.3, para 2	Deleted 4 th & 5 th sentences in response to RAIs 22.5-6 S01 & 22.5-7 S01
96.	S19A.8.3, para 3 & 4, new	Added description of design for RTNSS buildings & equipment qualification for RTNSS B1 & B2 components in response to RAIs 22.5-6 S01 & 22.5-7 S01.
97.	S19A.8.4	Entire section summarizes the RTNSS classifications and includes clarifications and new design information that is covered in previous sections.
98.	T19A-2	Entire table updated to reflect changes that are discussed in previous sections.
99.	T19A-3, new	Table added in response to RAI 22.5-5. Changes to RAI response submitted table are due to changes in RTNSS classifications of B1 and B2 in Revision 4, to B and C in Revision 5, as explained in S19A.3.
100.	T19A-4, new	Table added in response to RAI 22.5-5. Changes in RAI response submitted table are due to changes in Table 19A-3.
101.	S19ACM TOC	Deleted ACLCO 3.6.1 (and renumbered 3.6.2, 3.6.3, and 3.6.4) in response to RAI 16.2-110, S02
102.	S19ACM TOC	Added ACLCO 3.6.4 (now renumbered as ACLCO 3.6.3) in response to RAI 6.2-139
103.	S19ACM TOC	Added ACLCO 3.7.5 for consistency with changes made in Section 19A.6.2.2.
104.	S19ACM TOC	Revised Title of ACLCO 3.8.3 in response to RAI 9.4-31
105.	19ACM TOC	Added ACLCO 3.3.6 for consistency with changes made in Section 19A.8.4.3.
106.	S19ACM 3.6.1	Deleted ACLCO 3.6.1 (and renumbered 3.6.2 1ne 3.6.3) in response to RAI 16.2-110, S02
107.	S19ACM 3.6.3	ACLCO 3.6.3 (now renumbered as ACLCO 3.6.2) Actions, ACSRs and Bases revised in consideration of RAI 6.2-139 S01.
108.	S19ACM 3.6.4	Added ACLCO 3.6.4 (now renumbered as ACLCO 3.6.3) in response to RAI 6.2-139. The Frequency for ACSR 3.6.3.1 is revised from the RAI response provided. The Frequency of 92 days for operating each PCCS vent fan is consistent with the surveillance frequency for Drywell Cooling Fans provided in BWR/4 Standard Technical Specifications, NUREG-1433, SR 3.6.3.1.1.

Change List from DCD 19 Revision 4 to Revision 5

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109.	S19ACM 3.7.1	Added motor-driven firewater pump requirements in addition to the diesel-drive firewater pump. ACLCO, Action A, and Bases detail added for clarity.
110.	S19ACM 3.7.1	Table 3.7.1-1 Function 3, LPCI makeup Function is deleted to reflect Revision 5 conclusions.
111.	S19ACM 3.7.2	Revised requirements for FAPCS-Operating availability from "one" to "two"; revised Action A Completion Time to 14 days, and added Action B consistent with ACLCO 3.7.3. These changes address NRC RAI 22.5-23 (MFN TBD). Regarding the remaining RAI 22.5-23 issue requesting the addition of a surveillance for the FAPCS pumps, since the FAPCS pumps are routinely operated for the various functions, no specific surveillance is deemed necessary.
112.	S19ACM 3.7.3	The Action A Completion Time was revised to 14 days consistent with ACM 3.8.2 support functions.
113.	S19ACM 3.7.5	Added ACLCO 3.7.5 for consistency with changes made in Section 19A.6.2.2.
114.	S19ACM 3.8.1, 3.8.2, 3.8.3	ACSRs 3.8.1.1, 3.8.1.2, 3.8.2.1, 3.8.2.2, 3.8.3.1, and 3.8.3.2, revised to more generically refer to fuel oil limits and diesel loading as these values will depend on procurement specifics determined during construction. The requirement to surveil is unchanged and the criteria necessary to meet the RTNSS evaluation assumptions is unchanged. This is an editorial presentation enhancement consistent with specifying the minimum functional availability requirements.
115.	S19ACM 3.8.3	Revised name of "portable generator" to "ancillary diesel generator" in response to RAI 9.4-31. Revised Conditions and Required Actions for consistency with Standby Diesel Generators. Revised associated Bases for consistency.
116.	S19B.1, 5 th para. added	Added clarifying note for the reanalysis performed for the revised temperature conditions in the airspace under the drywell head and in the water in the reactor well and the equipment storage pool in response to RAI 19.2-41S02 & 19.2-86
117.	S19B.2.3, 1 st para.	Deleted 1st sentence and part of 4 th sentence for consistency with the revised analysis in response to RAI 19.2-41S02 & 19.2-86.
118.	S19B.2.3, 3rd & 4th para.	Modified for consistency with the revised analysis in response to RAI 19.2-41S02 & 19.2-86

Change List from DCD 19 Revision 4 to Revision 5

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119.	S19B.2.3, 5 th para.	Replaced “39” with “40” due to the reanalysis in response to RAI 19.2-41S02 & 19.2-86
120.	S19B.2.4, 1 st para.	Deleted “including thermal effects” due to the reanalysis to RAI 19.2-41S02 & 19.2-86
121.	S19B.2.4, 2 nd para.	Replaced entire paragraph due to the reanalysis in response to RAI 19.2-41S02 & 19.2-86
122.	S19B.3.1, 1 st para.	Deleted partial paragraph due to the reanalysis in response to RAI 19.2-41S02 & 19.2-86
123.	S19B.3.1, 2 nd para.	Added sentence to call out Fig. 19B-7 in response to RAI 19.2-41S02 & 19.2-86
124.	S19B.3.1, 3 rd para.	Replaced “10” with “8” and “11” with “9” for consistency with figure renumbering in response to RAI 19.2-41 S02 & 19.2-86
125.	S19B.3.1, 4 th para.	Revised due to the revised drywell head model, analysis conditions and figure renumbering in response to RAI 19.2-41S02 & 19.2-86
126.	S19B.3.1, 5 th para.	Replaced “13” with “12” and “14” with “15” for consistency with figure renumbering in response to RAI 19.2-41 S02 & 19.2-86
127.	S19B.3.1, 6 th para.	Revised paragraph for clarity in response to RAI 19.2-41S02 & 10.2-86
128.	S19B.3.1, 7 th para.	Revised paragraph for consistency with the revised analysis and figure renumbering in response to RAI 19.2-41S02 & 19.2-86
129.	S19B.7	Changed limiting pressure from 1.033 to 1.011 MPaG and 150 psig to 146.6 psig based on liner strain limits in response to RAI 19.2-41S02 & 19.2-86
130.	T19B-5	Revised specific heat and conductivity material property values to standard SI values as used in the analysis in response to RAI 19.2-41S02 & 19.2-86.
131.	T19B-6	Revised analysis results values in response to RAI 19.2-41S02 & 19.2-86 and added secondary system of units values.
132.	T19B-7	Revised analysis results values in response to RAI 19.2-41S02 & 19.2-86 and added secondary system of units values.
133.	T19B-8	Added secondary system of units values.
134.	T19B-9	Revised Level C Pressure Capability of drywell head due to change in flange bolting material in response to RAI 3.8-118 and added secondary system of units values.
135.	T19B-10	Revised Level C Pressure Capability of equipment and wetwell hatches due to change in flange bolting material in response to RAI 3.8-118

Change List from DCD 19 Revision 4 to Revision 5

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136.	T19B-10	Added secondary system of units values.
137.	T19B-11, item 1	Modified for consistency with the revised analysis in response to RAI 19.2-41S02 & 19.2-86
138.	F19B-1	Replaced figure due to the revised temperature conditions in response to RAI 19.2-41S02 & 19.2-86
139.	F19B-2	Replaced figure due to the revised temperature conditions in response to RAI 19.2-41S02 & 19.2-86
140.	F19B-3	Replaced figure due to the revised temperature conditions in response to RAI 19.2-41S02 & 19.2-86
141.	F19B-4	Replaced figure due to the revised temperature conditions in response to RAI 19.2-41S02 & 19.2-86
142.	F19B-5	Replaced figure and revised title due to the revised analysis in response to RAI 19.2-41S02 & 19.2-86
143.	F19B-6	Replaced figure and revised title due to the revised analysis in response to RAI 19.2-41S02 & 19.2-86
144.	F19B-7, deleted	Deleted figure due to the revised analysis in response to RAI 19.2-41S02 & 19.2-86
145.	F19B-8, deleted	Deleted figure due to the revised analysis in response to RAI 19.2-41S02 & 19.2-86
146.	F19B-7 (was F19B-9)	Replaced figure due to the revised analysis in response to RAI 19.2-41S02 & 19.2-86
147.	F19B-8 (was F19B-10)	Replaced figure due to the revised analysis in response to RAI 19.2-41S02 & 19.2-86
148.	F19B-9 (was F19B-11)	Replaced figure due to the revised analysis in response to RAI 19.2-41S02 & 19.2-86
149.	F19B-10 (added)	Added figure due to the revised analysis in response to RAI 19.2-41S02 & 19.2-86
150.	F19B-11 (was F19B-12)	Replaced figure and revised title due to the revised analysis in response to RAI 19.2-41S02 & 19.2-86
151.	F19B-12 (was F19B-13)	Replaced figure and revised title due to the revised analysis in response to RAI 19.2-41S02 & 19.2-86
152.	F19B-13 (was F19B-14)	Replaced figure and revised title due to the analysis in response to RAI 19.2-41S02 & 19.2-86
153.	S19C.1, 2nd,3 rd 4 th paras added	Provided discussion of the rationale for the reanalysis performed for the revised temperature conditions in the airspace under the drywell head and in the water in the reactor well and the equipment storage pool in response to RAI 19.2-41S02 & 19.2-86.
154.	S19C.2.1, para. 1	Added information concerning the revised temperature conditions in the airspace under the drywell head and in the water in the reactor well and the equipment storage pool in response to RAI 19.2-41S02 & 19.2-86

Change List from DCD 19 Revision 4 to Revision 5

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155.	S19C.2.2	In 10 th line, replace “1.913” with “1.741”, “6.17” with “5.61”; add “at the steam tunnel connection” following “slab in the 12 th line; and replace “1.708” with “1.643”, “248” with “238” in the 15 th line due to the reanalysis performed in response to RAI 19.2-41S02 & 19.2-86
156.	S19C.2.3	Add two sentences at the end of the paragraph due to the reanalysis performed in response to RAI 19.2-41S02 & 19.2-86
157.	S19C.2.5, para. 2	Add clarification of changes caused by reanalysis performed for the revised temperature conditions in the airspace under the drywell head and in the water in the reactor well and the equipment storage pool in response to RAI 19.2-41S02 & 19.2-86
158.	S19C.3.2	Replace “1.587” with “1.426”, “230” with “207” and “5.12” with “4.60 in the last sentence in the section to reflect results of the reanalysis performed in response to RAI 19.2-41S02 & 19.2-86
159.	S19C.3.3, Add para 2	Add paragraph due to the reanalysis performed in response to RAI 19.2-41S02 & 19.2-86
160.	S19C.3.4	Deleted last five sentences in response to RAI 19.2-41S02 & 19.2-86
161.	S19C.5	Revise paragraph to reflect changes due to the response to RAI 19.2-41S02 & 19.2-86
162.	T19C-1	Revised specific heat and conductivity material property values to standard SI values as used in the analysis in response to RAI 19.2-41S02 & 19.2-86.
163.	T19C-2	Revised bolting material mechanical properties in response to RAI 19.2-41S02 & 19.2-86
164.	T19C-3	Revised bolting material mechanical properties in response to RAI 19.2-41S02 & 19.2-86
165.	T19C-7	Revised table values to reflect revised analysis results and add note in response to RAI 19.2-41S02 & 19.2-86 and added secondary system of units values.
166.	T19C-8	Revised table values to reflect revised analysis results in response to RAI 19.2-41S02 & 19.2-86 and added secondary system of units values.
167.	T19C-9	Revised table values to reflect revised analysis results and add note in response to RAI 19.2-41S02 & 19.2-86 and added secondary system of units values.
168.	T19C-10	Revised table values to reflect revised analysis results in the reactor well and the equipment storage pool in response to RAI 19.2-41S02 & 19.2-86 and added secondary system of units values.

Change List from DCD 19 Revision 4 to Revision 5

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169.	T19C-11, 12	Added secondary system of units values
170.	T19C-13, items 1, 2 & 4	Revised table values to reflect revised analysis results in response to RAI 19.2-41S02 & 19.2-86 and added secondary system of units values
171.	F19C-1	Replaced figure due to the revised analysis in response to RAI 19.2-41S02 & 19.2-86
172.	F19C-2	Replaced figure due to the revised analysis in response to RAI 19.2-41S02 & 19.2-86
173.	F19C-3	Replaced figure due to the revised analysis in response to RAI 19.2-41S02 & 19.2-86
174.	F19C-4	Replaced figure due to the revised analysis in response to RAI 19.2-41S02 & 19.2-86
175.	F19C-5	Replaced figure due to the revised analysis in response to RAI 19.2-41S02 & 19.2-86
176.	F19C-6	Replaced figure due to the revised analysis in response to RAI 19.2-41S02 & 19.2-86
177.	F19C-7	Replaced figure due to the revised analysis in response to RAI 19.2-41S02 & 19.2-86
178.	F19C-8	Replaced figure due to the revised analysis in response to RAI 19.2-41S02 & 19.2-86
179.	F19C-9	Replaced figure due to the revised analysis in response to RAI 19.2-41S02 & 19.2-86
180.	F19C-10	Replaced figure due to the revised analysis in response to RAI 19.2-41S02 & 19.2-86
181.	F19C-11	Replaced figure due to the revised analysis in response to RAI 19.2-41S02 & 19.2-86
182.	F19C-12	Replaced figure due to the revised analysis in response to RAI 19.2-41S02 & 19.2-86
183.	F19C-13	Replaced figure due to the revised analysis in response to RAI 19.2-41S02 & 19.2-86
184.	F19C-14	Replaced figure due to the revised analysis in response to RAI 19.2-41S02 & 19.2-86
185.	F19C-15	Replaced figure due to the revised analysis in response to RAI 19.2-41S02 & 19.2-86
186.	F19C-16	Replaced figure due to the revised analysis in response to RAI 19.2-41S02 & 19.2-86