



**HITACHI**

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**~~Security Related Information Notice~~**

~~This letter forwards Security Related Information to be withheld from public disclosure in accordance with 10 CFR 2.390. Upon removal of Enclosure 3, the balance of this letter may be considered non-Security Related.~~

M190211

Docket Number: 52-045

December 20, 2019

U.S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, D.C. 20555-0001

Subject: **ABWR Standard Plant Design Certification Renewal Application  
Design Control Document Revision 7, Tier 1 and Tier 2**

References:

1. Letter from R.E. Kingston, GEH to USNRC, Subject: ABWR Standard Plant Design Certification Renewal Application Design Control Document, Revision 5, Tier 1 and Tier 2, MFN 10-342, sent December 7, 2010.
2. Letter from USNRC to Jerald G. Head, GEH, Subject: GE-Hitachi Nuclear Energy – United States Advanced Boiling-Water Reactor Design Certification Renewal Application, received July 20, 2012.
3. Letter from J.G. Head, GEH to USNRC, Subject: ABWR Standard Plant Design Certification Renewal Application Design Control Document, Revision 6, Tier 1 and Tier 2, MFN 16-002, sent February 19, 2016.
4. Letter from Peter C. Riccardella, ACRS Chairman, to NRC Chairman Svinicki, Subject: Advanced Boiling Water Reactor Design Certification Renewal, sent October 31, 2019.

In Reference 1, GE Hitachi Nuclear Energy ("GEH") requested renewal of the ABWR standard plant design certification (10 CFR Part 52, Appendix A) and requested approval of an accompanying amendment to the ABWR Design Control Document ("DCD") Revision 5, Tier 1 and Tier 2.

In Reference 2, NRC staff identified proposed changes including Fukushima Near Term Task Force recommendations that were addressed in Reference 3.

Reference 4 documents the full ACRS committee review and agreement that the ABWR DCD meets applicable regulatory requirements.

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The purpose of this letter is to transmit to the NRC ABWR DCD Revision 7, Tier 1 and Tier 2 for use in GEH's ABWR Design Certification Renewal Application. Revision 7 of the ABWR DCD incorporates information associated with document changes as a result of GEH's response to issued RAIs and design change issues that the agency considered to be regulatory improvements or changes that could meet the 10 CFR 52.59(b) criteria that were transmitted to GEH in Reference 2. Enclosure 1 contains a detailed listing by document and chapter of the changes made in going from ABWR DCD Revision 6 to Revision 7.

Enclosure 3 contains the Tier 1 and Tier 2 documents with "Security-Related Information" protected from public disclosure under the provisions in 10 CFR 2.390. The security-related information is marked with the designation "{{{Security-Related Information - Withhold Under 10 CFR 2.390}}}" GEH requests that the NRC withhold from public disclosure this information in accordance with the provisions of 10 CFR 2.390.

I declare under penalty of perjury that the foregoing information is true and correct to the best of my knowledge, information and belief.

Sincerely,

*Michelle P. Catts*

Michelle P. Catts  
Senior Vice President, Regulatory Affairs

Commitments: No additional commitments are made in this letter.

Enclosures:

- 1) ABWR DCD Revision 7 Chapter Change Lists
- 2) CD – ABWR DCD Tier 1 and Tier 2, Revision 7, (Public Version)
- 3) CD – ABWR DCD Tier 1 and Tier 2, Revision 7, (Security-Related Information)

cc: w/o Enclosures 2 and 3

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Enclosure 1

M190211

ABWR DCD Revision 7 Chapter Change Lists

**ABWR DCD Tier 1**

**25A5675AA Rev 7 Change List**

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 6 to Revision 7.
2.	S1.1	To address changes in the numbering of NRC regulations and minor wording changes, the definition of "ASME Code" is modified per M170054 and M170072.
3.	S2.1.1	Reference to ASME materials is clarified to identify "ASME Code Section II" in this section per M170054 and M170072.
4.	F2.1.2a	Revised figure adding and removing asterisks identifying SRVs with display and/or control interfaces with RSS per MFN 15-069, Supplement 1.
5.	F2.1.2e	Revised figure adding an asterisk to RPV Narrow Range Level and correcting the spelling error in Divisions for RPV Wide Range Level per MFN 15-069, Supplement 1.
6.	S2.2.6	Added the following RSS indication "(12) High Pressure Nitrogen Gas Supply System" per MFN 15-069, Supplement 1.
7.	F2.2.6	Inserted "Drywell Pressure", "MUWC A", and "HPIN A, B" indication to the RSS per MFN 15-069, Supplement 1.
8.	T2.4.1	For Item 4c, under Inspection, Test, Analyses, (1) clarified the types of inspections that are to be performed, and (2) replaced "50% blockage of pump suction Strainer" with "Analytically derived values for blockage of pump suction strainers based upon the as-built system." See MFN 16-034 and MFN 16-034, Revision 1.
9.	T2.4.1	For Item 4c, under Inspection, Test, Analyses, added an item stating, "Design basis debris loading of pumped fluid under conditions ranging from normal operating to design basis accident conditions." This in response to RAI 06.03-9 in M170209.
10.	T2.4.1	For Item 4c, under Inspection, Test, Analyses, added the following "Confirm vertical and horizontal separation between the SRV Quencher and RHR Suction Strainer" per MFN 16-065.
11.	T2.4.1	For Item 4c, under Acceptance Criteria, added information pertaining to what is required of the test results/report for RHR. This in response to RAI 06.03-9 in M170209.
12.	T2.4.2	For Item 3g, under Inspection, Test, Analyses, (1) clarified the types of inspections that are to be performed, and (2) replaced "50% minimum blockage of pump suction strainer" with "Analytically derived values for blockage of pump suction strainers based upon the as-built system." See MFN 16-034 and MFN 16-034, Revision 1.

Item	Location	Description of Change
13.	T2.4.2	For Item 3g, under Inspection, Test, Analyses, added an item stating, "Design basis debris loading of pumped fluid under conditions ranging from normal operating to design basis accident conditions." This in response to RAI 06.03-9 in M170209.
14.	T2.4.2	For Item 3g, under Inspection, Test, Analyses added the following: "Confirm vertical and horizontal separation between the SRV Quencher and HPCF Suction Strainer" per MFN 16-065.
15.	T2.4.2	For Item 3g, under Acceptance Criteria, added information pertaining to what is required of the test results/report for HPCF. This in response to RAI 06.03-9 in M170209.
16.	T2.4.4	For Item 3j, under Inspection, Test, Analyses, (1) clarified the types of inspections that are to be performed, and (2) replaced "50% minimum blockage of pump suction strainer" with "Analytically derived values for blockage of pump suction strainers based upon the as-built system." See MFN 16-034 and MFN 16-034, Revision 1.
17.	T2.4.4	For Item 3j, under Inspection, Test, Analyses, added new Item (5) stating, "Design basis debris loading of pumped fluid under conditions ranging from normal operating to design basis accident conditions." This in response to RAI 06.03-9 in M170209. This change necessitated renumbering following items as (5) and (6).
18.	T2.4.4	For Item 3j, under Inspection, Test, Analyses, added: "(7) Confirm vertical and horizontal separation between the SRV Quencher and RCIC Suction Strainer." per MFN 16-065
19.	T2.4.4	For Item 3j, under Acceptance Criteria, added information pertaining to what is required of the test results/report for RCIC. This in response to RAI 06.03-9 in M170209.
20.	F2.11.2	Updated Note 2 to read "...is for Division I and Division II Level Sensor" per MFN 15-069, Supplement 1.
21.	S2.11.6	Added to S2.11.6 to address the beyond-design-basis event of a postulated aircraft impact. Design features provide mechanical cross connects (HECW-Division A), along with electrical power manual alignments from Division 1 to MCR HVAC (Div III / C) fans and components per MFN 16-027.
22.	F2.11.6a	Added "return from CRHA Area HVAC System C and Supply to CRHA Area HVAC System C" per MFN16-027.
23.	F2.11.6b	Added "return to HECW A from CRHA Area HVAC System C and Supply from HECW A to CRHA Area HVAC System" per MFN16-027.
24.	T2.11.6	Added ITAAC number 10 to include design features providing emergency mechanical cross connects per MFN 16-027.
25.	S2.11.9	Add #8 to "Reactor Service Water System Interface Requirements" explaining the site-specific design of RSW per MFN 16-027.

Item	Location	Description of Change
26.	S2.11.13	Inserted the following sentence in the Design Description after the HPIN System Discussion: "The HPIN System has Pressure indication for Division I and Division II on the Remote Shutdown Panel." per MFN 15-069, Supplement 1.
27.	S2.12.1	Changes in the Design Description address in greater detail open-phase circuit protection for the Electrical Power Distribution System. See MFN-15-073, Revision 2.
28.	S2.12.1	Changed "FLEX" to "External" for the portable diesel generators associated with the R/B external connections for mitigation strategies. See M170020.
29.	T2.12.1	Changes in the ITAAC address in greater detail open-phase circuit protection for the Electrical Power Distribution System. ITAAC 26 and 27 are deleted. ITAAC 28 is replaced with greater details and with the addition of the Main Power Transformer. ITAAC 29 is modified with greater detail and to address monitoring of the non-safety-related power feeder circuit breakers to the safety-related bus. ITAAC 30 is modified with greater detail and to address protection of the safety-related busses. New ITAAC 31 is added to verify that there is no data communication from the nonsafety-related to the Class 1E safety-related micro-processor based protective relays. See MFN-15-073, Revision 2.
30.	F2.12.1	Changed "FLEX" to "External" for the portable diesel generators associated with the R/B external connections for mitigation strategies. See M170020.
31.	S2.15.5	Adding additional paragraph: "To address the beyond-design-basis event of a large aircraft crash, design features provide mechanical cross connects (HECW-Division A), along with electrical power manual alignments from Division I to MCR HVAC (Div III / C) fans and components" per MFN 16-027.
32.	T2.15.5a	Added ITAAC number 11 to include design features providing mechanical cross connects and electrical power per MFN 16-027.
33.	F2.15.5a	Added cross-connection for HECW A and HVAC C to figure per MFN 16-027.
34.	T2.15.10	Added "a" to ITAAC #3. Added ITAAC #3b to explain the use of steel roof trusses to support Reactor Building for postulated aircraft impact. See MFN 16-027.
35.	S2.17.1	2 <sup>nd</sup> paragraph, after the first sentence added the following sentence: "The TCS radiological habitability is comparable to the control room habitability under accident conditions." See MFN 16-041.

Item	Location	Description of Change
36.	T2.17.1	Added ITAAC number 6 to inspect and test the TSC habitability system and confirm it is comparable to the MCR habitability system per MFN 16-041.
37.	S4.1	Added additional paragraph to #3 “The site specific design of the UHS demonstrates that sufficient capacity is maintained to support RSW System cooling capacity following postulated aircraft impact strike locations on the UHS. Divisional separation of the RSW components that interface with the UHS is required in accordance with 10 CFR 50.150.” See MFN 16-027.
38.	T5.0	Information is added to Note 4 to clarify the missile spectrum to account for missiles above grade level. See MFN-14-075, Supplement 4.
39.	T5.0	Added a note to the maximum tornado wind speed, modified the maximum hurricane wind speed, adjusted the notes at the end of the table to clarify the wind speed in fastest mile and 3-second gust, and added a reference to RG 1.221 in Note (8). See M170090.

M190211  
Enclosure 1

**ABWR DCD Tier 2 TOC**

**25A5675AB Rev 7 Change List**

<b>Item</b>	<b>Location</b>	<b>Description of Change</b>
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 6 to Revision 7.



**ABWR DCD Tier 2 Chapter 1**

**25A5675AC Rev 7 Change List**

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 6 to Revision 7.
2.	S1.6	Added to this section: "Table 1.6-2 is a list of technical reports which are incorporated by reference into Tier 2 for the ABWR." This is to separate the technical report for the ABWR aircraft impact assessment in a new Table 1.6-2. See M170049.
3.	T1.6-1	Added NEDC-32721P-A for the methodology used in the design of the ECCS Suction Strainer to the Table of Referenced Reports per MFN 16-034 and added "(using an updated head loss correlation)" per MFN 16-034, Revision 1.
4.	T1.6-2	This new table is added to show the report that are incorporated by reference in the ABWR DCD. NEDO-33875 and NEDE-33875P are listed in this new table to provide the licensing basis information for the ABWR aircraft impact assessment per M170049.
5.	T1.6-2	Added NEDO-33878 and NEDE-33878P to the table of reports incorporated by reference to document information regarding ECCS Suction Strainers previously added per M170046. See M180068.
6.	S1.8.3	1 <sup>st</sup> paragraph, deleted the second sentence; 2 <sup>nd</sup> paragraph, 1 <sup>st</sup> sentence updated the current issues date for GLs, IE Bulletins, IN and circulars to "end of June 2016"; Added a paragraph summarizing the review of international operating experience related to ABWR. See MFN 16-065 and MFN 16-065, Supplement 1.
7.	T1.8-19	Added BTP 8-9 for addressing open-phase circuits. See MFN-15-073, Revision 2.
8.	T1.8-20	Changes include: (1) added a note to RG 1.1 to explain that RG 1.1 has been withdrawn and replaced by RG 1.82, Revision 4; (2) changed RG 1.82 to Rev. 4, 03/2012. See MFN 16-034, Revision 1.
9.	T1.8-20	Added RG 1.217 "Guidance for the Assessment of Beyond-Design-Basis Aircraft Impacts," per MFN 16-027.
10.	T1.8-21	Inserted ANS Reference 55.1-1992 per MFN 15-063, Supplement 1.
11.	T1.8-21	Inserted ANS Reference 55.6-1993 per MFN 15-063, Supplement 1.
12.	T1.8-21	Deleted NEI 12-06 regarding diverse and flexible mitigation strategies per M170023.

Item	Location	Description of Change
13.	T1.8-21	Added NEI 07-13 Revision 8 "Methodology for Performing Aircraft Impact Assessment for New Plant Designs" to Industrial Codes and Standards per MFN 16-027.
14.	T1.8-22	Updated Table 1.8-22 through June 2016 for ABWR applicable Generic Letters, IE Bulletins per MFN 16-065 and MFN 16-065, Supplement 2.
15.	T1.9-1	Deleted COL License Information Items: Item No. 4.1a, Fuel design for ECCS Suction Strainer Bypass, and Item No. 6.12, ECCS Suction Strainer. See MFN 16-034, Revision 1.
16.	T1.9-1	Added COL License Information Items 8.11, Physical Location of Connections for Portable Diesel Generators and 8.12, Develop Procedures for Connecting Portable External Diesel Generators. See M170239.
17.	T1.9-1	Added COL License Information Items 8.16, Mitigation of Open Phase Condition on RAT and UATs, and 8.17, Mitigation of Open Phase Condition on Main Power Transformer (MPT). See MFN-15-073, Revision 2.
18.	S1A.2.34 and S1A.2.35	<b>EDITORIAL/ADMINISTRATIVE CHANGE.</b> This change is an <b>editorial/administrative change</b> due to a formatting issue from Revision 4 to Revision 5, which was also carried over to Revision 6. No content is changed from the certified design. This changes to the sections to the correct format to be as it was in Revision 4 of the DCD (which was the certified design reference DCD). This change corrects a formatting error in DCD Section 1A.2.34. The list of closed systems outside the containment for systems (9) through (13) were misplaced to Section 1A.2.35 and blocked part of the text for Section 1A.2.35.

**ABWR DCD Tier 2 Chapter 2**  
**25A5675AD Rev 7 Change List**

<b>Item</b>	<b>Location</b>	<b>Description of Change</b>
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 6 to Revision 7.
2.	T2.0-1	Changed “Maximum Dynamic Bearing Pressure” to “Minimum Dynamic Bearing Pressure” per MFN 15-062, Supplement 2.
3.	T2.0-1	Added a footnote reference to the Hurricane missile spectrum I site parameter and expanded the footnote (which already existed) to address missiles for above grade. See MFN-14-075, Supplement 4.
4.	T2.0-1	Added a note to the maximum tornado wind speed, modified the maximum hurricane wind speed, adjusted the notes at the end of the table to clarify the wind speed in fastest mile and 3-second gust, and added a reference to RG 1.221 in Note ***. See M170090.

**ABWR DCD Tier 2 Chapter 3**

**25A5675AE Rev 7 Change List**

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 6 to Revision 7.
2.	T3.2-1	Added suction strainer information for RHR (E1, 5a), HPCF (E2, 3a) and RCIC (E4, 4a) and adds Note ii on ASME code section applicability and exceptions. See M170154.
3.	S3.3.1.1	Added “(fastest-mile)” after “wind velocity” for consistency with the ABWR design basis for wind speed. See M170090.
4.	S3.3.1.2	Deleted “which is consistent with that of ASCE/SEI 7-05” and added “(fastest-mile)” after “wind velocity” for clarity in the ABWR design basis for wind speed. See M170090.
5.	S3.3.2.1	In the first Item (1), changed “286.5 km/h” to “257 km/h (fastest mile)” and added “(fastest ¼ mile)” to the second Item (1) for clarity in the ABWR design basis for wind speed. See M170090.
6.	S3.3.2.2	Added a sentence at the beginning of this section regarding procedures for transforming extreme hurricane wind loading for clarifying the ABWR design basis. See M170090.
7.	S3.3.4	Modified Reference 3.3-1 to clarify the version of ANSI/ASCE that is the design basis for the ABWR design. See M170090.
8.	S3.5.1.4	Added at the end of the 1 <sup>st</sup> paragraph: “See Table 2.0-1.” This is added to the description of missiles generated by natural phenomena as a reference to the ABWR site parameter table where the specifics on the missile spectra are identified. See MFN-14-075, Supplement 4.
9.	S3.5.3	Added: “According to Table 2.0-1, the automobile missile is considered to impact at all altitudes less than 9.14 m (30 feet) above all plant grade levels within 0.8 km (0.5 mile) of the plant structures. For site-specific situations for which automobiles parked within 0.8 km of the plant may be at elevations higher than 9.14 m above plant grade level (e.g., elevated parking garage), a site-specific automobile missile evaluation must be performed by the COL applicant and addressed in the barrier design (see COL information in Section 3.5.4.2).” This clarifies the missile spectra above grade. See MFN-14-075, Supplement 4.

Item	Location	Description of Change
10.	S3.5.4.2	Added: "and Subsection 3.5.3." This ensures that the COL information described in S3.5.3 is identified as part of the COL License Information for Section 3.5. See MFN-14-075, Supplement 4.
11.	S3H.1.4.2	In Item (9), the maximum hurricane wind speed is changed to 257 km/h for consistency with changed in Section 3.3.2.1. See M170090.
12.	3H.6	This section provides the summary of key structural design features for the ABWR aircraft impact assessment. It is modified to be consistent with the final assessment results, as described in MFN 16-027; MFN 16-027, Revisions 1 and 2; and M170049.
13.	3MA	<b>EDITORIAL CHANGES:</b> Minor editorial changes that correct incorporation of changes in Revision 6 are made to delete extra lines and to adjust headers in subsections. No content is changed. The original Revision 6 changes were as shown in MFN-15-069.

**ABWR DCD Tier 2 Chapter 4**

**25A5675AF Rev 7 Change List**

<b>Item</b>	<b>Location</b>	<b>Description of Change</b>
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 6 to Revision 7.
2.	S4.2.1.1	Deleted the last paragraph of this section, which discussed actions related to a COL item for ECCS suction strainers potential for debris. See MFN 16-034, Revision 1.
3.	S4.2.5.1	Deleted COL License Information, Section 4.2.5.1, Evaluation of Post-LOCA Fuel Bundle Blockage due to ECCS Strainer Debris Bypass, per MFN 16-034, Revision 1.

**ABWR DCD Tier 2 Chapter 5**

**25A5675AG Rev 7 Change List**

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 6 to Revision 7.
2.	S5.4.6.2.2.1	Added a note regarding RG 1.1 being withdrawn and replaced by information in RG 1.84. See MFN 16-034, Revision 1.
3.	S5.4.7.2.2	Paragraph (2)(c) - The second sentences was revised to insert the word "safety" between "limiting" and "functioning". This was added for clarification per MFN 14-052, Revision 1, Supplement 1.
4.	S5.4.7.3	Last sentence of the paragraph was modified with a change of the last part of the sentence to "...as described in Appendix 5B." See MFN 14-052, Revision 1, Supplement 1.
5.	S5.4.7.3.2	The following clarifying sentence was added after the 6 events: "The normal shutdown condition is used to establish the limiting heat exchanger capacity and is evaluated in Appendix 5B.3." In addition, "safety" was added between "limiting" and "event" in the 1 <sup>st</sup> sentence of the next paragraph. The first sentence of the next paragraph was revised to read: "The heat exchanger size evaluated in Appendix 5B.3 will also support the safety function of limiting suppression pool..." Reason (2) was replaced. See MFN 14-052, Revision 1, Supplement 1.
6.	T5.4-2	Replaced (a) under (10) Suction Strainer Sizing with the following "Pump NPSH requirements are satisfied given the strainer design methods described in Appendix 6C." See MFN 16-034.
7.	T5.4-4	Table 5.4-4 was clarified. The word "Safety" was added to Design Point Function and the Normal Design Point Function was added. See MFN 14-052, Revision 1, Supplement 1.

## ABWR DCD Tier 2 Chapter 6

### 25A5675AH Rev 7 Change List

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 6 to Revision 7.
2.	S6.2.2.3.1	Added a note regarding RG 1.1 being withdrawn and replaced by information in RG 1.84. See MFN 16-034, Revision 1.
3.	S6.2.5.2.1	In item (4) Overpressure Protection, changed the size of the 2 air-operated butterfly valves from “250A” to “350A”, per MFN 16-001, Revision 1, Supplement 2.
4.	S6.2.5.2.6.2	2 <sup>nd</sup> paragraph, 1 <sup>st</sup> sentence, changed rupture disc size to “250” mm and changed the line size to “350 A” per MFN 16-001, Revision 1, Supplement 2.
5.	S6.2.5.2.6.5	Changed the rupture disc size to “250 mm”, updated the stream flow mass flow rate to “33.7” and updated the corresponding energy flow to “2.3” % of rated power per MFN 16-001, Revision 1, Supplement 2.
6.	S6.2.5.3	3 <sup>rd</sup> paragraph, last sentence, the overprotection line size is changed to “350 A” per MFN 16-001, Revision 1, Supplement 2.
7.	T6.2-2	Updated Vent Loss Coefficient to “4.2 - 6.7” and added the following note: “Overall Vent System Loss Coefficient. Includes Flow Loss Coefficient Contribution of 1.7 for the Drywell Connecting Vent (DCV).” See MFN 14-052, Revision 1, Supplement 2.
8.	S6.3.2.2	Added a note regarding RG 1.1 being withdrawn and replaced by information in RG 1.84. See MFN 16-034, Revision 1.
9.	S6.3.7	Added reference to M180187, “Peak Cladding Temperature 2018 Annual Reporting Under 10 CFR §50.46 for the GE Hitachi Nuclear Energy Advanced Boiling Water Reactor (ABWR) Design Certification and the ABWR Design Certification Renewal Application” (October 29, 2018), Enclosure 1, “Advanced Boiling Water Reactor 2018 Annual Report Under 10 CFR § 0.46(a)(3)(iii).” Refer to letter M190008
10.	T6.3-4	Added Renewal PCT/w delta PCT adjustment (°C) column with values for each break location, changed Note 1 applicability to Break Size column, added (Note 2) to the newly added column and (Note 3) to Maximum Local Oxidation Column. See letter M190008.
11.	S6C.2	Added a new 7 <sup>th</sup> paragraph to describe the ABWR ECCS suction strainers as the patented GE optimized stacked disk design. See M170046. Clarified ECCS pump seal cooling flow restrictions to include cyclone separator type filters. See M180068.



Item	Location	Description of Change
12.	S6C.3.1	Changed Item (1) to read: "The debris generation model utilizes spherical zones of influence (ZOI) in accordance with the Utility Resolution Guidance; Reference 6C-3." Third paragraph, 1 <sup>st</sup> sentence deleted "plus margin"; 4 <sup>th</sup> paragraph, first sentence, deleted "proportionally" and added "maximum debris load fraction assuming"; and 4 <sup>th</sup> paragraph, last sentence, changed to read "The strainers....design conditions are one RHR loop, one HPCF loop, and the RCIC system." See MFN 16-034 and MFN 16-034, Revision 1.
13.	S6C.3.2	Replaced the previous text on Chemical Effects with new text clarifying the chemical effects on ECCS suction strainer head loss following a LOCA. See MFN 16-034 and MFN 16-034, Revision 1.
14.	S6C.3.3	Clarifies the Downstream Effects for debris being transported from the Suppression Pool and describes ABWR design mitigating features to reduce debris interaction. See MFN 16-034 and MFN 16-034, Revision 1. Information is also added to refer to NEDE-33878P as providing results of an assessment of the downstream effects per M170046. Additional clarification for pressure instruments provided per M180068.
15.	S6C.5	New section added to address Strainer Sizing Analysis Summary per MFN 16-034. Added paragraph on ECCS suction strainer detail such as size and critical parameters per M170154.
16.	S6C.6	Updated section number to account for new section 6C.5. Deleted section 6C.6.1 per MFN 16-034, Revision 1.
17.	S6C.7	Changed 6C-2 to refer to RG 1.82, Revision 4 (MFN 16-034, Revision 1). Updated section number to account for new section 6C.5 and added Reference 6C-4 per MFN 16-034, and added Reference 6C-5 per M170046. Reference 6C-5 revision level changed per M180068.
18.	T6C-1	Added Table 6C-1 ECCS Strainer Debris Load per MFN 16-034 and MFN 16-034, Revision 1.

**ABWR DCD Tier 2 Chapter 7**

**25A5675AJ Rev 7 Change List**

<b>Item</b>	<b>Location</b>	<b>Description of Change</b>
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 6 to Revision 7.
2.	S7.4.1.4.4	Changed the following information under (4) Nuclear Boiler: changed (ii) from "shutdown range" to "narrow range" and added "(v) Reactor Water level wide range indication - cold calibration (A,B)" per MFN 15-069, Supplement 1.
3.	S7.4.1.4.4	Under (9) Atmospheric Control (AC) System: changed (a) to "Suppression pool Narrow Range and Wide Range..."; inserted "(b) Containment Wide Range Pressure on both RS panels." Under (10) Makeup Water Condensate System (MUCW): (a) was revised to state "...provided on both RS panels" and Item (13) was added: "(13) High Pressure Instrument Nitrogen (HPIN) System (a) Nitrogen Supply Header Pressure on both RS Panels." Refer to MFN 15-069, Supplement 1.

**ABWR DCD Tier 2 Chapter 8**  
**25A5675AK Rev 7 Change List**

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 6 to Revision 7.
2.	S8.1.2.2.1	This subsection is added to describe the monitoring and protection against design vulnerabilities for mitigation of an open phase condition as identified in NRC Bulletin 2012-01. See MFN-15-073, Revision 2.
3.	S8.2.4.6	This COL license information item that was previously established to address NRC Bulletin 2012-01 is deleted. See MFN-15-073, Revision 2.
4.	S8.3.1.0.6.3	Item (6) is added to this section on Bus Protection to describe the design features for monitoring for open phase conditions. See MFN-15-073, Revision 2.
5.	S8.3.1.1.2.1	In the 3 <sup>rd</sup> paragraph, changed “FLEX” to “External” for associated mitigating strategies power connections (three instances) per M170020.
6.	S8.3.1.1.2.1	New paragraph is added to describe COL requirements to describe details and location of external diesel generator connections and to develop procedures for making connections per M170239
7.	S8.3.1.1.6.3	A new paragraph is added to Item (1) to describe micro-processor based protective relays for bus protection for open phase conditions. See MFN-15-073, Revision 2.
8.	S8.3.1.1.6.4	Changes are made to address the protection requirements for diesel generators. See MFN-15-073, Revision 2.
9.	S8.3.4.5	A new COL License Information Item is added to address details and physical location of connection for portable external diesel generators per M170239.
10.	S8.3.4.6	A new COL License Information Item is added to address development of procedures for connection of portable external diesel generators per M170239.
11.	S8.3.4.10	A new COL License Information Item is added to address mitigation of open phase condition on RAT and UATs. See MFN-15-073, Revision 2.

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Item	Location	Description of Change
12.	S8.3.4.11	A new COL License Information Item is added to address mitigation of open phase condition on the main power transformer. See MFN-15-073, Revision 2.

**ABWR DCD Tier 2 Chapter 9**

**25A5675AL Rev 7 Change List**

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 6 to Revision 7.
2.	S9.1.3.2	<b>EDITORIAL CHANGE:</b> MFN 14-071, Supplement 1, Revision 1, included a change that was inadvertently omitted (“Level 1 at the top of active fuel” to “Level 1 at the top of the fuel assembly bail handle”). This is a <b>correction</b> to make the change consistent with the DCD markups submitted in MFN 14-071, Supplement 1, Revision 1. Also, see CR-25146, which documents this error.
3.	S9.1.4.2.10.3	<b>EDITORIAL CHANGE:</b> 1 <sup>st</sup> paragraph, first sentence. Corrected editorial error. Changed “casks” to “cask.”
4.	S9.1.5.2.1	Added additional information to 2 <sup>nd</sup> paragraph: “During normal operating conditions, the R/B crane will be parked at the Reactor Building North wall when not in use.” See MFN 16-027.
5.	S9.2.5.1	Added 2 <sup>nd</sup> sentence to (10): “The site specific design of the UHS demonstrates that sufficient capacity is maintained to support RSW System cooling capacity following postulated aircraft impact strike locations on the UHS. Divisional separation of the RSWSSCs that interface with the UHS is required in accordance with 10 CFR 50.150.” See MFN 16-027.
6.	S9.2.15.2.3	Added to 2 <sup>nd</sup> paragraph to include information regarding site specific design for the RSW system and physical separation distances per MFN 16-027.
7.	S9.4.1.1.4	Added information to this section to describe a means of cross-connecting divisions for HVAC in the Main Control Room area in the event of an aircraft impact. See MFN 16-027.
8.	S9.4.5.5.3	In the 3 <sup>rd</sup> paragraph, the figure numbers for the diesel generator room louvers are changes to “Figures 1.2-9 and 1.2-10.” See MFN 16-027, Revision 2.
9.	S9.4.8.2	Item (9) after the last sentence information was modified to add that the COL applicant will perform TSC radiological consequence analyses, considering plant and site conditions, to ensure that TSC radiological habitability design features are comparable to the MCR habitability system during a LOCA per MFN 16-041.

Item	Location	Description of Change
10.	S9.4.10.1	Added information after the last sentence to clarify that the COL applicant will perform TSC radiological consequence analyses, considering plant and site conditions, to ensure that TSC radiological habitability design features are comparable to the MCR habitability system during a 30-day post-accident period. See MFN 16-041.
11.	S9.5.1.1.7	Clarified paragraph 1 to read “As stated above, the systems are separated by fire areas on a divisional basis. The multiplexing system is a dual channel system. Two simultaneous, identical digitized control signals that must match are required at the demultiplexer for control action to be taken at the field device. The likelihood of two identical spurious signals, induced by physical damage (including fire damage) to the fiber-optic transmission cable sent simultaneously and matching, is minuscule.” Refer to MFN 15-064, Revision 1, Supplements 1 and 2.
12.	S9.5.1.1.7	Inserted the following statement after the first paragraph: “Spurious operation of equipment controlled by Remote Multiplexing Units (RMU) in the field due to physical damage because of fire or smoke will be considered in cases where the connection between the RMU and the field devices is transmitting a command signal.” Refer to MFN 15-064, Revision 1, Supplement 1.
13.	S9.5.1.1.7	<p>Added the following after the third paragraph: “The likelihood of fire or smoke-induced spurious signals initiating in and propagating through the integrated digital instrumentation and control systems and the supporting Essential Multiplexing System (EMS) is miniscule due to the use of message authentication, which requires the message format and sequence to be correct to be recognized, and the use of optical fiber cabling, which cannot “hot short” to other cables. Nevertheless, spurious operation of plant equipment due to fire or smoke damage to the following digital instrumentation and control and EMS equipment is considered, regardless of its location:</p> <ul style="list-style-type: none"> <li>• Main Control Room (MCR) components or equipment that are connected via electrical wires to other equipment, both digital controller and EMS equipment, located in two (2) separate rooms in the C/B arranged adjacent to and on opposite sides of the MCR, and to other equipment in other plant locations.</li> <li>• Digital controller and EMS equipment connected via fiber-optic cable, arranged as Divisions 1 and 3 and Divisions 2 and 4, located in their own separate rooms in the C/B wherein each room is adjacent to and on opposite sides of the MCR.</li> </ul>

Item	Location	Description of Change
		<ul style="list-style-type: none"> <li>• EMS equipment located in the two (2) separate rooms in the C/B that is connected via fiberoptic cable to other EMS equipment in other plant locations.</li> <li>• Remote Multiplexing Units (RMUs) located in the field that are connected via electrical wires to plant process components (e.g., instruments and actuators).</li> </ul> <p>The COL applicant shall provide an evaluation of the ABWR's susceptibility to Multiple Spurious Operations (MSOs) in accordance with the methodology contained in NEI 00-01, Guidance for Post Fire Safe Shutdown Circuit Analysis, Revision 2 and as modified by Regulatory Guide 1.189, Revision 2. Spurious operation of equipment due to fire or smoke damage to the equipment listed above will be considered. The COL applicant will submit the results of this evaluation to the NRC for review. See Subsection 9.5.13.22 for COL license information." Refer to MFN 15-064, Revision 1, Supplement 2.</p>
14.	S9.5.1.6.5	The content of this section is deleted. Refer to MFN 15-064, Revision 1, Supplement 2.
15.	S9.5.13.22	In the last paragraph in the section, after the 1 <sup>st</sup> sentence of the paragraph the following was added: "The equipment listed in Subsection 9.5.1.1.7 will be considered in this evaluation." Refer to MFN 15-064, Revision 1, Supplement 2.
16.	S9.5.14	Added Reference 9.5-11: "Regulatory Guide 1.189—Fire Protection for Nuclear Power Plants, Revision 2." Refer to MFN 15-064, Revision 1, Supplement 2.
17.	S9A.2.4	Added information to (5) regarding steel roof trusses as design features for aircraft impacts. See MFN 16-027.
18.	S9A.4.1.1.1 and S9A.4.1.1.2	In both subsections, Item (4) is replaced as follows: "The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figures 9A.4-1 through 9A.4-3. These fire protection figures also show personnel entry and egress for this room." See MFN 16-027.

Item	Location	Description of Change
19.	S9A.4.1.1.3 and S9A.4.1.1.4	In both subsections, Item (4) is replaced as follows: "The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-1. This fire protection figure also shows personnel entry and egress for this room." See MFN 16-027.
20.	S9A.4.1.1.5	Replaced Corridor A with Corridor C and deleted Room 115. In (4), information is replaced with "The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-1. This fire protection figure also shows personnel entry and egress for this room." See MFN 16-027.
21.	S9A.4.1.1.6	Changed Room 116 to 115. In (4), information is replaced with "The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-1. This fire protection figure also shows personnel entry and egress for this room." See MFN 16-027.
22.	S9A.4.1.1.7 and S9A.4.1.1.9	In (4), information is replaced with "The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-1. This fire protection figure also shows personnel entry and egress for this room." See MFN 16-027.
23.	S9A.4.1.1.10 and S9A.4.1.1.11	In (4), information is replaced with "The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-1 through 9A.4-8 These fire protection figures also show personnel entry and egress for this room." See MFN 16-027.
24.	S9A.4.1.1.12, S9A.4.1.1.13, S9A.4.1.1.15, and S9A.4.1.1.16	In (4), information is replaced with "The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-1. This fire protection figure also shows personnel entry and egress for this room." See MFN 16-027.
25.	S9A.4.1.1.18	Deleted Room 134. In (4), information is replaced with "The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-1. This fire protection figure also shows personnel entry and egress for this room." See MFN 16-027.



Item	Location	Description of Change
26.	S9A.4.1.1.19	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-1. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
27.	S9A.4.1.1.20 and S9A.4.1.1.21	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-1 through 9A.4-8 These fire protection figures also show personnel entry and egress for this room.” See MFN 16-027.
28.	S9A.4.1.1.22, S9A.4.1.1.23, S9A.4.1.1.25, S9A.4.1.1.26, S9A.4.1.1.29, S9A.4.1.1.30, and S9A.4.1.1.31	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-1. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
29.	S9A.4.1.1.32	Replaced Corridor D with RWCU/SPDS Instrument Room. In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-1. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
30.	S9A.4.1.1.33 and S9A.4.1.1.34	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-1. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
31.	S9A.4.1.1.37	Replaced F1400 with F1100. In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-1. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
32.	S9A.4.1.1.38 through S9A.4.1.1.41	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-1. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.

Item	Location	Description of Change
33.	S9A.4.1.2.3 through S9A.4.1.2.15, and S9A.4.1.2.17	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-2. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
34.	S9A.4.1.2.20	Deleted RM 234. In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-2. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
35.	S9A.4.1.2.22 through S9A.4.1.2.24, S9A.4.1.2.29, S9A.4.1.2.31 through S9A.4.1.2.35	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-2. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
36.	S9A.4.1.3.3	In (4) information deleted and replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-3. This fire protection figure also shows personnel entry and egress for this room.” Also, in (9), deleted EHVAC and replaced with Electrical HVAC (EHVAC). See MFN 16-027.
37.	S9A.4.1.3.4 thru S9A.4.1.3.8	In (4) information deleted and replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-3. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
38.	S9A.4.1.3.9 and S9A.4.1.3.10	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-3 through 9A.4-8. These fire protection figures also show personnel entry and egress for this room.” See MFN 16-027.
39.	S9A.4.1.3.11 through S9A.4.1.3.25, S9A.4.1.3.27 through S9A.4.1.3.34	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-3. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.

Item	Location	Description of Change
40.	S9A.4.1.3.35	Deleted RM 348. In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-3. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
41.	S9A.4.1.3.36 thru S9A.4.1.3.40	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-3. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
42.	S9A.4.1.4.1	In Item (1), replaced F4901 with F1900. In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-4. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
43.	S9A.4.1.4.2 through S9A.4.1.13, S9A.4.1.4.15 through S9A.4.1.20, S9A.4.1.4.22 through S9A.4.1.23	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-4. This fire protection figure also shows personnel entry and egress for this room.” MFN 16-027.
44.	S9A.4.1.24	Change room 441 to room 446. In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-4. This fire protection figure also shows personnel entry and egress for this room.” MFN 16-027.
45.	S9A.4.1.26 through S9A.4.1.28	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-4. This fire protection figure also shows personnel entry and egress for this room.” MFN 16-027.

Item	Location	Description of Change
46.	S9A.4.1.5.1 through S9A.4.1.5.11, S9A.4.1.5.12 through S9A.4.1.5.16, S9A.4.1.5.19 through S9A.4.1.5.21, S9A.4.1.5.26 through S9A.4.1.5.29	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-5. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
47.	S9A.4.1.5.30	In Item (1), change Fire Area to F3200. In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-5. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
48.	S9A.4.1.5.31 through S9A.4.1.5.32, S9A.4.1.5.34 through S9A.4.1.5.36	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-5. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
49.	S9A.4.1.6.1 through S9A.4.1.6.16	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-6. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
50.	S9A.4.1.6.19	In (4), changed room to 643 and information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-6. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
51.	S9A.4.1.6.20	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-6. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.

Item	Location	Description of Change
52.	S9A.4.1.6.21	Changed to "SGTS C" division. In (4), information is replaced with "The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-6. This fire protection figure also shows personnel entry and egress for this room." See MFN 16-027.
53.	S9A.4.1.6.24 through S9A.4.1.6.25, S9A.4.1.6.30, S9A.4.2.6.32	In (4), information is replaced with "The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-7. This fire protection figure also shows personnel entry and egress for this room." See MFN 16-027.
54.	S9A.4.1.6.33	In Item (1), changed fire area to F4201. In (4), information is replaced with "The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-6. This fire protection figure also shows personnel entry and egress for this room." See MFN 16-027.
55.	S9A.4.1.6.35	In (4), information is replaced with "The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-7. This fire protection figure also shows personnel entry and egress for this room." See MFN 16-027.
56.	S9A.4.1.6.38	In Item (1), changed fire area to F4203. In (4), information is replaced with "The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-7. This fire protection figure also shows personnel entry and egress for this room." See MFN 16-027.
57.	S9A.4.1.6.39	In (4), information is replaced with "The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-7. This fire protection figure also shows personnel entry and egress for this room." See MFN 16-027.

Item	Location	Description of Change
58.	S9A.4.1.6.40	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-6. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
59.	S9A.4.1.6.41	Changed fire area to F4306. In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-6 and 9A.4-7. These fire protection figures also show personnel entry and egress for this room.” See MFN 16-027.
60.	S9A.4.1.6.42, S9A.4.1.6.43	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-6. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
61.	S9A.4.1.6.44 through S9A.4.1.6.46	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-7. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
62.	S9A.4.1.6.47	In Item (1), changed fire are to F6200. In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-7. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
63.	S9A.4.1.6.49	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-6. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
64.	S9A.4.1.7.1	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-8. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.

Item	Location	Description of Change
65.	S9A.4.1.7.2	Section title is changed. In (1), F3300 is replaced with F7300. In (2), safety-related and purpose are changed to "No." In (4), information is replaced with "The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-8. This fire protection figure also shows personnel entry and egress for this room." In (6) and (7), references to 6.3.E.9 are deleted. See MFN 16-027.
66.	S9A.4.1.7.3	Section heading is now RCW (C) Surge Tank (Rm No. 735) and this section is added. See MFN 16-027.
67.	S9A.4.1.7.4	In (4), information is replaced with "The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-8. This fire protection figure also shows personnel entry and egress for this room." See MFN 16-027.
68.	S9A.4.1.7.6	In (1), F7200 is replaced with F7201. In (4), information is replaced with "The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-8. This fire protection figure also shows personnel entry and egress for this room." See MFN 16-027.
69.	S9A.4.1.7.7, S9A.4.1.7.8	In (4), information is replaced with "The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-8. This fire protection figure also shows personnel entry and egress for this room." See MFN 16-027.
70.	S9A.4.1.7.9	Section heading Gallery (Rm No. 762) is replaced with Viewing Gallery (Rm No. 763). In (4), information is replaced with "The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-8. This fire protection figure also shows personnel entry and egress for this room." See MFN 16-027.
71.	S9A.4.1.7.10	Section deleted. See MFN 16-027.

Item	Location	Description of Change
72.	S9A.4.1.7.11 through S9A.4.1.7.17, S9A.4.1.7.19, S9A.4.1.7.20	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-8. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
73.	S9A.4.2.1.1	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-12 and 9A.4-13. These fire protection figures also show personnel entry and egress for this room.” See MFN 16-027.
74.	S9A.4.2.1.2	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-12. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
75.	S9A.4.2.1.3	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-12 and 9A.4-13. These fire protection figures also show personnel entry and egress for this room.” See MFN 16-027.
76.	S9A.4.2.1.4	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-12. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
77.	S9A.4.2.1.5	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-12 and 9A.4-13. These fire protection figures also show personnel entry and egress for this room.” See MFN 16-027.
78.	S9A.4.2.1.6	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-12. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.



Item	Location	Description of Change
79.	S9A.4.2.2.1 through S9A.4.2.2.3	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-13. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
80.	S9A.4.2.3.1 through S9A.4.2.3.20	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-14. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
81.	S9A.4.2.3.21 through S9A.4.2.3.23	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-14, 9A.4-15, 9A.4-16 and 9A.4-16a. These fire protection figures also show personnel entry and egress for this room.” See MFN 16-027.
82.	S9A.4.2.4.1	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-15. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
83.	S9A.4.2.5.1	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-16. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
84.	S9A.4.2.5.2	Rooms 511, 512 and 513 are replaced with 511. In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-16. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.

Item	Location	Description of Change
85.	S9A.4.2.5.3	Rooms 531, 532 and 533 are replaced with 531. In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-16. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
86.	S9A.4.2.5.4	In (1), FC1310 is replaced with FC1210. In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-16. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
87.	S9A.4.2.5.5	Room 534 is replaced with 533. In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-16. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
88.	S9A.4.2.5.6	Rooms 501, 502, 503 and 504 are replaced with 501. In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-16. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
89.	S9A.4.2.5.7	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-16. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
90.	S9A.4.2.5.8	Room 521 is replaced with 505. In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-16. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.

Item	Location	Description of Change
91.	S9A.4.2.5.10	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-16. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
92.	S9A.4.2.5.11	In (2), Safety-Related is changed to D3 and Provides Core Cooling is changed to D3. In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-16. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
93.	S9A.4.2.5.12 and S9A.4.2.5.13	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-16. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
94.	S9A.4.2.6.1	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-16a. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
95.	S9A.4.2.6.2	Changed room number to 601. In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-16a. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
96.	S9A.4.2.6.3	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-16a. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.

Item	Location	Description of Change
97.	S9A.4.2.6.4	Rooms 624, 625, 627, 661, 664 are deleted and replaced with 621. In (4), information is replaced with "The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-16a. This fire protection figure also shows personnel entry and egress for this room." See MFN 16-027.
98.	S9A.4.2.6.5	Rooms 613, 617, 618, 619 are deleted and replaced with 614. In (4), information is replaced with "The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-16a. This fire protection figure also shows personnel entry and egress for this room." See MFN 16-027.
99.	S9A.4.2.6.6	In (4), information is replaced with "The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-16a. This fire protection figure also shows personnel entry and egress for this room." See MFN 16-027.
100.	S9A.4.2.6.7	Room 612 deleted and replaced with 613. In (4), information is replaced with "The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-16a. This fire protection figure also shows personnel entry and egress for this room." See MFN 16-027.
101.	S9A.4.2.6.8	Room 615 is replaced with 694. In (4), information is replaced with "The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-16a. This fire protection figure also shows personnel entry and egress for this room." See MFN 16-027.
102.	S9A.4.2.6.9	Rooms 611 and 652 are deleted and replaced with 602. In (4), information is replaced with "The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-16a. This fire protection figure also shows personnel entry and egress for this room." See MFN 16-027.

Item	Location	Description of Change
103.	S9A.4.2.6.10	(1) FC4310 is replaced with FC1110. In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-16a. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
104.	S9A.4.2.6.11	Rooms 631, 632, 633, 634, 651, and 653 are deleted and replaced with 634. In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-16a. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
105.	S9A.4.3.1.1 through S9A.4.3.1.4	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-18. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
106.	S9A.4.3.2.1	Added FT1502, FT1503 to heading. In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-19. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
107.	S9A.4.3.2.2 through S9A.4.3.2.8	In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-19. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.
108.	S9A.4.3.3.1	Added FT1502, FT1503, FT2501, FT2502, FT2503, FT2504 are added to heading. In (4), information is replaced with “The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-20. This fire protection figure also shows personnel entry and egress for this room.” See MFN 16-027.

Item	Location	Description of Change
109.	S9A.4.3.3.2	In (4), information is replaced with "The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-19. This fire protection figure also shows personnel entry and egress for this room." See MFN 16-027.
110.	S9A.4.3.3.3 and S9A.4.3.3.4	In (4), information is replaced with "The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-20. This fire protection figure also shows personnel entry and egress for this room." See MFN 16-027.
111.	S9A.4.3.4	In (4), information is replaced with "The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-21. This fire protection figure also shows personnel entry and egress for this room." See MFN 16-027.
112.	S9A.4.7	In (4), information is replaced with "The fire barriers (3-hour rated, 3-hour rated 5 psid) or unrated including doors, walls and floors associated with this room are illustrated on Fire Protection Figure 9A.4-16. This fire protection figure also shows personnel entry and egress for this room." See MFN 16-027.
113.	S9A.5.5.10	This section is modified to be consistent with the ABWR aircraft impact assessment assumptions regarding cable routing, HVAC ducts, and certain fire protection design features. See MFN 16-027 and M170049.
114.	T9A.6-2	Room numbers changed in items No. 103, 104 and 105 all changed to 123 from 116, per MFN 16-027.
115.	T9A.6-2	Item number 2568 description changed from (A) to (C) per MFN 16-027.
116.	T9A.6-2	Room number changed in items No. 2778, 2779, 2780, 2781, 2782, 2783 and 2784 from "715" to room "735" per MFN 16-027.
117.	T9A.6-3	Items 220 and 221 Elect Div. changed from 3 to 3/1 and added footnote #1 per MFN 16-027.
118.	T9A.6-3	Items 236 and 237 Elect Div. changed from 3 to 3/1 and added footnote #2 per MFN 16-027.

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**ABWR DCD Tier 2 Chapter 10**

**25A5675AM Rev 7 Change List**

<b>Item</b>	<b>Location</b>	<b>Description of Change</b>
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 6 to Revision 7.

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**ABWR DCD Tier 2 Chapter 11**

**25A5675AN Rev 7 Change List**

<b>Item</b>	<b>Location</b>	<b>Description of Change</b>
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 6 to Revision 7.



## ABWR DCD Tier 2 Chapter 12

### 25A5675AP Rev 7 Change List

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 6 to Revision 7.
2.	Section 12.3.1.2	Inserted statement addressing process piping embedded in concrete and added references to NRC Regulatory Guides 1.143, 4.21, 8.8 as well as ANSI/ANS Standards 55.1 and 55.6 per MFN 15-063 Supplement 1.
3.	Section 12.3.1.5.1	The lead in paragraph starting with “Generic ABWR design features...” deleted a comma and added “and” between “contamination” & “generation”. Deleted a comma after “waste” per MFN 15-063 Supplement 1.
4.	Section 12.3.1.5.1	Replace bullets 6 and 7 with the following: “Appropriately sloped floors around floor drains in areas where the potential for a spill exists to limit the extent of contamination. The floor drains are monolithic in construction to minimize possibility of liquid penetrating at embedment boundaries. No grout is used in the installation of floor drains. Periodic visual inspections of the installation around the floor drains are performed to ensure no bypass exists in these floor drain areas;” and “Provisions for decontaminable epoxy-type wall and floor coverings, which provide smooth surfaces to ease decontamination. Epoxy-type coatings are applied to both steel surfaces and concrete areas appropriate for contamination control. These areas consist of the walls and floors of the Reactor and Turbine Buildings, radwaste areas, rooms containing equipment with liquid radioactive sources, floor drain areas, washdown bays, and tunnels containing piping transporting potentially radioactive contaminated liquids;” per MFN 15-063 Supplement 1.
5.	Section 12.3.8	Added the following References: 12.3-13, 12.3-14, 12.3-15 and 12.3-16 per MFN 15-063 Supplement 1.

**ABWR DCD Tier 2 Chapter 13**

**25A5675AR Rev 7 Change List**

<b>Item</b>	<b>Location</b>	<b>Description of Change</b>
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 6 to Revision 7.
2.	S13.5.3.2	In the 3 <sup>rd</sup> bullet of the 1 <sup>st</sup> paragraph, reference to the “FLEX Support Guidelines (FSGs)” is removed. References to the FSGs are removed from the sub-bullets and the reference “13.5-13” is changed to “13.5-12” in the last sub-bullet. See M170023.
3.	S13.5.3.4	Added additional bullet “Aircraft impact (see Section 19G)” per MFN 16-027.
4.	S13.5.4	Deleted NEI 12-06 as a reference and renumbered the last reference to 13.5-12 (reference to NEI 14-01). See M170023.

**ABWR DCD Tier 2 Chapter 14**

**25A5675AS Rev 7 Change List**

<b>Item</b>	<b>Location</b>	<b>Description of Change</b>
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 6 to Revision 7.
2.	S14.2.12.1.8	Deletes validation of a 50% plugged temporary suction strainer for the RHR system preoperational test per M170046.
3.	S14.2.12.1.10	Deletes validation of a 50% plugged temporary suction strainer for the HPCF system preoperational test per M170046.

**ABWR DCD Tier 2 Chapter 15**

**25A5675AT Rev 7 Change List**

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 6 to Revision 7.
2.	Section 15.4.4.1.1	<b>EDITORIAL CHANGE TO CORRECT SPELLING:</b> 2 <sup>nd</sup> paragraph, 2 <sup>nd</sup> to the last sentence: corrected typographical errors. Changed “adjusstable” to “adjustable” and “dirve” to “drive.”
3.	Section 15.6.2.5.3	<b>EDITORIAL CHANGE TO CORRECT ERROR FROM SSAR REVISION 34/DCD R4 CARRYOVER:</b> Replace the reference to Subsection 15.6.7.2 (which does not exist) with Subsection 2.3.2.9 (the correct COL Information Item for this site-specific parameter). This editorial correction was authorized by CR 19622.
4.	Section 15.6.4.5.1.3	<b>EDITORIAL CHANGE TO CORRECT ERROR FROM SSAR REVISION 34/DCD R4 CARRYOVER:</b> Replace the reference to Subsection 15.6.7.2 (which does not exist) with Subsection 2.3.2.9 (the correct COL Information Item for this site-specific parameter). This editorial correction was authorized by CR 19622.
5.	Section 15.6.5.5.4	<b>EDITORIAL CHANGE TO CORRECT ERROR FROM SSAR REVISION 34/DCD R4 CARRYOVER:</b> Replace the reference to Subsection 15.6.7.2 (which does not exist) with Subsection 2.3.2.9 (the correct COL Information Item for this site-specific parameter). This editorial correction was authorized by CR 19622.
6.	Section 15.6.6.5.2.3	<b>EDITORIAL CHANGE TO CORRECT ERROR FROM SSAR REVISION 34/DCD R4 CARRYOVER:</b> Replace the reference to Subsection 15.6.7.2 (which does not exist) with Subsection 2.3.2.9 (the correct COL Information Item for this site-specific parameter). This editorial correction was authorized by CR 19622.

**ABWR DCD Tier 2 Chapter 16**

**25A5675AU Rev 7 Change List**

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 6 to Revision 7.
2.	Table 3.3.6.2-1	<p>Changed the REQUIRED NUMBER OF DIVISIONS for 19. Condensate Storage Tank Water Level from “1” to “2” and after Item 23 inserted the following:</p> <ul style="list-style-type: none"> <li>24. N2 Header Pressure [required number of divisions] 2</li> <li>25. Drywell Pressure - Wide Range [required number of divisions] 2</li> <li>26. Suppression Pool Water Level Wide Range [required number of divisions] 2</li> <li>27. RPV Wide Range Water Level – Cold [required number of divisions] 2</li> </ul> <p>Refer to MFN 15-069, Supplement 1.</p>
3.	SR 3.6.1.3.12	<p><b>EDITORIAL CORRECTION TO RESTORE CHANGES IN REVISION 5 THAT WERE INADVERTENTLY REMOVED IN REVISION 6.</b> Changed “0.294 MPaG” to “0.312 MPaG”. Refer to CR-19705 and see Chapter 16 change list for Revision 4 to Revision 5.</p>
4.	S4.3.1	Deleted the subsection number “4.3.1.1.” Deleted subsection 4.3.1.2 in its entirety. Refer to MFN-15-065, Supplement 1.
5.	S4.3.3	Deleted the subsection number “4.3.3.1.” Refer to MFN-15-065, Supplement 1.
6.	Bases 3.3.6.2	Under LCO: Changed “12 and 13” to “12, 13, and 27.”; inserted the following sentence “There is an additional set of wide range instruments that have been calibrated for cold conditions and will be used when the normal instruments are off scale.” Modified the next sentence to read “One channel of each of the RPV Water level conditions and ranges...” Refer to MFN 15-069, Supplement 1.
7.	Bases 3.3.6.2	Added “26” to item 18 Suppression Pool Water Level and added “Narrow and Wide Range”; 2 <sup>nd</sup> sentence added the term “...narrow range...”; added the following sentence: “The wide range level indicators monitor the suppression pool from the centerline of the ECCS suction piping to the wetwell spargers.” Changed the next sentence to read “One channel of both Functions are...” Refer to MFN 15-069, Supplement 1.

Item	Location	Description of Change
8.	Bases 3.3.6.2	<p>Item 19 was modified as follows: 1<sup>st</sup> sentence was changed to "...water supply to RCIC and HPCF." The second sentence was modified to read: "...MODE 3 when using RCIC and HPCF." The 3<sup>rd</sup> sentence was deleted and the 4<sup>th</sup> sentence was changed as follows: "Both channels are...from both RSS panels."</p> <p>Item 24. N2 Header Pressure and Item 25. Drywell Pressure - Wide Range were added.</p> <p>Refer to MFN 15-069, Supplement 1.</p>
9.	B3.6.1.1 APPLICABLE SAFETY ANALYSES	<p><b>EDITORIAL CORRECTION TO RESTORE CHANGES IN REVISION 5 THAT WERE INADVERTENTLY REMOVED IN REVISION 6.</b> Changed "0.269 MPaG" to "0.284 MPaG". Refer to CR-19705 and see Chapter 16 change list for Revision 4 to Revision 5.</p>
10.	B3.6.1.2 APPLICABLE SAFETY ANALYSES	<p><b>EDITORIAL CORRECTION TO RESTORE CHANGES IN REVISION 5 THAT WERE INADVERTENTLY REMOVED IN REVISION 6.</b> Changed "0.269 MPaG" to "0.284 MPaG". Refer to CR-19705 and see Chapter 16 change list for Revision 4 to Revision 5.</p>
11.	B3.6.1.4 APPLICABLE SAFETY ANALYSES	<p><b>EDITORIAL CORRECTION TO RESTORE CHANGES IN REVISION 5 THAT WERE INADVERTENTLY REMOVED IN REVISION 6.</b> Changed "0.269 MPaG" to "0.284 MPaG". Refer to CR-19705 and see Chapter 16 change list for Revision 4 to Revision 5.</p>

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**ABWR DCD Tier 2 Chapter 17**

**25A5675AV Rev 7 Change List**

<b>Item</b>	<b>Location</b>	<b>Description of Change</b>
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 6 to Revision 7.

**ABWR DCD Tier 2 Chapter 18**

**25A5675AW Rev 7 Change List**

<b>Item</b>	<b>Location</b>	<b>Description of Change</b>
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 6 to Revision 7.
2.	Appendix 18A	Delete the New Fuel Storage Area from Table 1 - Operating Values of Secondary Containment Parameters. Refer to MFN 15-065, Supplement 1.



**ABWR DCD Tier 2 Chapter 19**

**25A5675AX Rev 7 Change List**

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 6 to Revision 7.
2.	S19.3.1.3.1	Calculated peak clad temperatures in this section are conservatively updated to account for estimated adjustments based on 10 CFR 50.46. See M190008.
3.	S19.3.5	Reference 19.3-8 is added to refer to letter M180187, Peak Cladding Temperature 2018 Annual Reporting Under 10 CFR 50.46 for the GEH Hitachi Nuclear Energy Advanced Boiling Water Reactor (ABWR) Design Certification and the ABWR Design Certification Renewal Application” for information on 10 CFR 50.46 compliance.
4.	19B	Updated the Safety Issues Index Table for New Generic Issues through June 2016 per MFN 16-065.
5.	S19B.2	Updated 19B.2 to address New Generic issues 186, 189, 191, 193 and 199 per MFN 16-065 and MFN 16-065, Supplement 1.
6.	19E.2.3.5.1.4	Replaced Equation “19E.2-41b” with “Reference 19E.2-38”; corrected Equation 19E.2-41k. See MFN 16-001, Revision 1, Supplement 2.
7.	S19G.1	Per MFN 16-027, included “(References 19G-2 and 19G-1)” after NEI 07-13 in the 1 <sup>st</sup> paragraph, 2 <sup>nd</sup> sentence, and added “Detailed information is provided in Reference 19G-3.”
8.	S19G.2	<b>EDITORIAL CORRECTION</b> to remove an extraneous quote symbol in each of the bulleted items in the first paragraph.
9.	S19G.2	Add RCCV to 2 <sup>nd</sup> paragraph. See MFN 16-027.
10.	19G.4.1 and 19G.4.2	Editorial correction in the section number to remove a period between “19” and “G” for consistency with other section numbers. See MFN 16-027 DCD markups.
11.	19G.4.2	Items (1), (2), (3), (6), (7), (9), (10), and (11) are modified to be consistent with the key design features of the final ABWR aircraft impact assessment. See MFN 16-027, MFN 16-027 R1, MFN 16-027 R2, and M170049.
12.	19G.4.3	This section is modified to be consistent with the key design features of the final ABWR aircraft impact assessment. See MFN 16-027 and M170049.

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Item	Location	Description of Change
13.	19G.4.4	This section is modified to be consistent with the key design features of the final ABWR aircraft impact assessment. See MFN 16-027.
14.	19G.6	Changed reference numbers from 19.7-1 to 19G-1 and 19.7-2 to 19G-2. Reference 19G.2 is modified to add the title and issue date for RG 1.217. Added a new Reference 19G-3, "NEDE-33875P, ABWR US Certified Design Aircraft Impact Assessment, Licensing Basis Information and Design Details for Key Design Features." See MFN 16-027, MFN 16-027 R2, and M170049.
15.	19K.11.5	Modified specific components to cycle and instrumentation to check. See M170257.

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**ABWR DCD Tier 2 Chapter 20**

**25A5675BA Rev 7 Change List**

<b>Item</b>	<b>Location</b>	<b>Description of Change</b>
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 6 to Revision 7.

**ABWR DCD Tier 2 Chapter 21, Volume 1**

**25A5675BB Rev 7 Change List**

<b>Item</b>	<b>Location</b>	<b>Description of Change</b>
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 6 to Revision 7.
2.	F1.2-10	Added EDG protective awnings at HVAC intake openings per approved design change. Enhanced R/B door between Rm No 613 and Rm No 614 as water tight (WT) at R6/RB. Updated R/B door at corridor Rm No 614 from water tight (WT) door to standard door at R5/RA. Strengthened wall at R6/RA-RB. Elevator wall thickness at R1/RD corrected at elevation 23500mm. See MFN 16-027, Revision 2.
3.	F1.2-12	Figure was revised to correctly identify Rm No 733 with Rm 735 (RCW (C) Surge Tank) and to identify Rm No 743 in R/B Operating Floor. See MFN 16-027.
4.	F1.2-12	Deleted duct space adjacent to elevator R2/RF at elevation 31700mm. See MFN 16-027, Revision 2.
5.	F1.2-13i	The T-conical ECCS suction strainers are changed to depict a stacked-disk strainer in the locations on this figure. See M170046.
6.	F1.2-14	Corrected elevation of C/B roof at MSL to correspond with Figure 3H.2-28, Control Building Section. See MFN 16-027, Revision 2.
7.	F1.2-22	Corrected elevation of C/B roof at MSL to correspond with Figure 3H.2-28, Control Building Section. See MFN 16-027, Revision 2.
8.	F5.1-3 (sheet 2 of 11)	Figure was revised to show RSS signal coming to the solenoids for SRVs C, H, R, and L and signals from RSS for G, J, K and P were deleted per MFN 15-069, Supplement 1.
9.	F5.1-3 (sheet 5 of 11)	This Figure is revised to show Division A RPV Narrow range and Wide Range Water Level signals going to the RSS per MFN 15-069, Supplement 1.
10.	F5.1-3 (sheet 6 of 11)	This Figure is revised to show Division B RPV Narrow range and Wide Range Water Level signals going to the RSS per MFN 15-069, Supplement 1.

**ABWR DCD Tier 2 Chapter 21, Volume 2**

**25A5675BC Rev 7 Change List**

<b>Item</b>	<b>Location</b>	<b>Description of Change</b>
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 6 to Revision 7.
2.	F5.4-9 (sheet 1 of 2)	In Note 10, changed "suppression pool suction strainer is 50% plugged" to "suppression pool suction strainer head loss is at the design value." See M170046.
3.	F5.4-11 (sheet 2 of 2)	The 50% plugged assumption for the ECCS suction strainers is changed to be the head loss at design value for each instance on this figure. See M170046.
4.	F6.2-39 (sheet 2 of 3)	Figure was revised to show signals being sent to the RSS for Suppression Pool Water Level Narrow and Wide Range per MFN 15-069, Supplement 1.
5.	F6.2-39 (sheet 3 of 3)	Figure revised to show Drywell Pressure - Wide Range signals being sent to the RSS per MFN 15-069, Supplement 1.
6.	F6.3-1	In Note 4, changed "suction strainers 50 percent plugged" to "suction strainer head loss at the design value." See M170046.
7.	Figure 6.7-1	Figure revised to show N2 Header Pressure signals going to the RSS and a to add the RSS IED to the list of Reference Documents per MFN 15-069, Supplement 1.

**ABWR DCD Tier 2 Chapter 21, Volume 3**

**25A5675BD Rev 7 Change List**

<b>Item</b>	<b>Location</b>	<b>Description of Change</b>
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 6 to Revision 7.
2.	F7.3-2 (sheet 2 of 37)	Figure was revised to add a note 17 on Manual operation of the Division I ADS valves per MFN 15-069, Supplement 1.
3.	F7.3-2 (sheet 3 of 37)	Figure revised to show modified SRV logic signal for SRV P and to move the RSS SRV Open signal logic to SRV C to Figure 7.3-2 (sheet 9 of 37) per MFN 15-069, Supplement 1.
4.	F7.3-2 (sheet 4 of 37)	Figure revised to show modified SRV logic signal for SRV J and to move the RSS SRV Open signal logic to SRV L to Figure 7.3-2 (sheet 10 of 37) per MFN 15-069, Supplement 1.
5.	F7.3-2 (sheet 6 of 37)	Figure revised to show modified SRV logic signal for SRV G and to move the RSS SRV Open signal logic to SRV H to Figure 7.3-2 (sheet 9 of 37) per MFN 15-069, Supplement 1.
6.	F7.3-2 (sheet 7 of 37)	Figure revised to show modified SRV logic signal for SRV K and to move the RSS SRV Open signal logic to SRV H to Figure 7.3-2 (sheet 10 of 37) per MFN 15-069, Supplement 1.
7.	F7.3-2 (sheet 9 of 37)	Figure revised to show modified SRV logic signal for SRV C and H and to move the RSS SRV Open signal logic for SRV C and SRV H to Figure 7.3-2 Sh. 9 (from sheets 3 and 6 of 37) per MFN 15-069, Supplement 1.
8.	F7.3-2 (sheet 10 of 37)	Figure revised to show modified SRV logic signal for SRV L and R and to move the RSS SRV Open signal logic for SRV L and SRV R to Figure 7.3-2 Sh. 10 (from sheets 4 and 7 of 37) per MFN 15-069, Supplement 1.
9.	F7.3-2 (sheet 18 of 37)	Figure updated to show SRV C, H, L & R logic ties to RSS and added a reference to See Note 17 per MFN 15-069, Supplement 1.

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**ABWR DCD Tier 2 Chapter 21, Volume 4**

**25A5675BE Rev 7 Change List**

<b>Item</b>	<b>Location</b>	<b>Description of Change</b>
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 6 to Revision 7.

**ABWR DCD Tier 2 Chapter 21, Volume 5**

**25A5675BF Rev 7 Change List**

<b>Item</b>	<b>Location</b>	<b>Description of Change</b>
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 6 to Revision 7.
2.	F7.4-2	Figure was revised to updated the RSS IED for the addition of N2 Header PT A, B signals, Wide Range Drywell Pressure PT A, B signals, CST Level LT A signal, Wide Range SP Level A, B signals, RPV Wide Range Cold LT A, B signals and to update the SRVs that can be manually operated from RSS to C, H, R, and L per MFN 15-069, Supplement 1.
3.	F7.4-3 (Sheet 2 of 27)	Figure revised to replace SRVs P, G, K and J with SRVs R, C, H and L per MFN 15-069, Supplement 1.
4.	F7.4-3 (Sheet 9 of 27)	Figure revised to update the Air Operated Safety Relief Valves as SRVs C, H, L and R per MFN 15-069, Supplement 1.



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**ABWR DCD Tier 2 Chapter 21, Volume 6**

**25A5675BG Rev 7 Change List**

<b>Item</b>	<b>Location</b>	<b>Description of Change</b>
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 6 to Revision 7.

**ABWR DCD Tier 2 Chapter 21, Volume 7**

**25A5675BH Rev 7 Change List**

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 6 to Revision 7.
2.	F8.3-1 Sh3	Changed "FLEX DG" to "External DG" in three places. See M170020.
3.	F9.2-3 (Sheet 1 of 3)	Figure was revised to identified cross connects from HECW "C" and HECW "A" per MFN 16-027.
4.	F9.2-3 (Sheet 3 of 3)	Figure was revised to identified cross connects from HECW "C" and HECW "A" per MFN 16-027.
5.	F9.2-4	Figure was revised to add a connection from the LIS Z601 B to the RSS per MFN 15-069, Supplement 1.
6.	F9.4-1 (Sheet 2 of 5)	Figure was revised to add following: "note: 7 - MCR AREA HVAC "C" powered from Div I under manual mode operation for postulated aircraft impact scenarios and note: 8 MCR Area HVAC "C" is operated in a manual mode supplied from HECW "A" under postulated aircraft impact scenarios. See MFN 16-027.
7.	F9A.4-2	Revised fire area F4201 to F1200 for duct space adjacent to elevator R2/RF at elevation -1700mm. See MFN-16-027, Revision 2.
8.	F9A.4-3	Figure was revised to identify Rm No. 312 and Rm. No 381 per MFN 16-027.
9.	F9A.4-4	Figure was revised to add a note to above grade R/B fire protection figures that structural components on this elevation may be classified as an interface boundary under aircraft impact. In general, interface boundaries are assumed to contain no penetrations. If considering changes (including adding a penetration) to any walls, ceiling, or floors on this elevation, refer to NEDE-33875P and the AIA cognizant engineer and to deleted F1900 for containment fire area. See MFN 16-027.
10.	F9A.4-4	Updated F4201 as a 3-hour rated floor per MFN 16-027, Revision 2.

Item	Location	Description of Change
11.	F9A.4-5	Figure was revised to add a note to above grade R/B fire protection figures that structural components on this elevation may be classified as an interface boundary under aircraft impact. In general, interface boundaries are assumed to contain no penetrations. If considering changes (including adding a penetration) to any walls, ceiling, or floors on this elevation, refer to NEDE-33875P and the AIA cognizant engineer and to add room numbers 538 and 539 for cask pit and spent fuel pool for completeness. See MFN 16-027.
12.	F9A.4-6	Figure was revised to add a note to above grade R/B fire protection figures that structural components on this elevation may be classified as an interface boundary under aircraft impact. In general, interface boundaries are assumed to contain no penetrations. If considering changes (including adding a penetration) to any walls, ceiling, or floors on this elevation, refer to NEDE-33875P and the AIA cognizant engineer; Identified door in corridor as not a 3 hour rated fire door; Added door in corridor to match figure 1.2-10; and Correctly identified a fire zone. See MFN 16-027.
13.	F9A.4-6	Added EDG protective awnings at HVAC intake openings per approved design change. Enhanced R/B door between Rm No 613 and Rm No 614 as water tight (WT) at R6/RB. Updated R/B door at corridor Rm No 614 from water tight (WT) door to standard door at R5/RA. Strengthened wall at R6/RA-RB as 3 hr rated fire and 5 psid barrier (blue). Elevator wall thickness at R1/RD corrected at elevation 23500mm. See MFN 16-027, Revision 2.

Item	Location	Description of Change
14.	F9A.4-7	Figure was revised to add a note to above grade R/B fire protection figures that structural components on this elevation may be classified as an interface boundary under aircraft impact. In general, interface boundaries are assumed to contain no penetrations. If considering changes (including adding a penetration) to any walls, ceiling, or floors on this elevation, refer to NEDE-33875P and the AIA cognizant engineer and Rm No. 685 floor rated for 3hr was revised to reflect 3hr overlay from Rm No. 614 at elev. 23700. See MFN 16-027.
15.	F9A.4-7	Updated F6100 as 3 hr rated floor at Rm No 659 at elevation 27200mm. See MFN 16-027, Revision 2.
16.	F9A.4-8	Figure was revised to add a note to above grade R/B fire protection figures that structural components on this elevation may be classified as an interface boundary under aircraft impact. In general, interface boundaries are assumed to contain no penetrations. If considering changes (including adding a penetration) to any walls, ceiling, or floors on this elevation, refer to NEDE-33875P and the AIA cognizant engineer and corrected Figure 9A.4-8 which in the last revision separated Rm No. 715 and 733. Room number 733 was inadvertently re-used and duplicated. Rm No 733 is located on RB operating deck elev. 31700mm. Figure 9A.4-8 is also revised to reflect new Rm No 735 as RCW C surge tank room. See MFN 16-027.
17.	F9A.4-8	Deleted duct space adjacent to elevator R2/RF at elevation 31700mm. See MFN 16-027, Revision 2.

**ABWR DCD Tier 2 Chapter 21, Volume 8**

**25A5675BJ Rev 7 Change List**

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 6 to Revision 7.
2.	F9A.4-16	Added Rm No 522 in agreement with 9A.4.2.5.1 Control Room HVAC "B" Exhaust Duct Chase. Added Rm No 595 in agreement with 9A.4.2.5.12 Control Room HVAC "C" Exhaust Duct Chase. Corrected Rm No. 593 label described in 9A.4.2.5.11. See MFN 16-027.
3.	F9A.4-18	Added fire protection figure legend for building fire hazard symbols omitted from this figure. See MFN 16-027.
4.	F9A.4-19	Added fire protection figure legend for building fire hazard symbols omitted from this figure. See MFN 16-027.
5.	F9A.4-20	Added fire protection figure legend for building fire hazard symbols omitted from this figure. Added Rm No 310 for Switchgear "B" Area (Rm No. 310) described in 9A.4.3.3.2. See MFN 16-027.
6.	F9A.4-21	Added fire protection figure legend for building fire hazard symbols omitted from this figure. See MFN 16-027.
7.	F12.3-7	Added EDG protective awnings at HVAC intake openings per approved design change. Enhanced R/B door between Rm No 613 and Rm No 614 as water tight (WT) at R6/RB. Updated R/B door at corridor Rm No 614 from water tight (WT) door to standard door at R5/RA. Strengthened wall at R6/RA-RB. See MFN-16-027 Revision 2.
8.	F12.3-9	Revised to reflect Rm denoted 734 (error) is labeled Rm No 735 (RCW (C) Surge Tank) and unnamed room in RB Operating Floor Rm No 716 is labeled Rm No 734 to reflect that an additional room was created. See MFN 16-027.
9.	F12.3-9	Deleted duct space adjacent to elevator R2/RF at elevation 31700mm. MFN 16-027, Revision 2.
10.	F12.3-18	Added EDG protective awnings at HVAC intake openings per approved design change. Enhanced R/B door between Rm No 613 and Rm No 614 as water tight (WT) at R6/RB. Updated R/B door at corridor Rm No 614 from water tight (WT) door to standard door at R5/RA. Strengthened wall at R6/RA-RB. See MFN-16-027, Revision 2.

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Item	Location	Description of Change
11.	F12.3-20	Revised to reflect Rm denoted 734 (error) is labeled Rm No 735 (RCW (C) Surge Tank) and unnamed room in RB Operating Floor Rm No 716 is labeled Rm No 734 to reflect that an additional room was created. See MFN-16-027.
12.	F12.3-20	Deleted duct space adjacent to elevator R2/RF at elevation 31700mm. See MFN-16-027, Revision 2.
13.	F12.3-60	Added EDG protective awnings at HVAC intake openings per approved design change. Enhanced R/B door between Rm No 613 and Rm No 614 as water tight (WT) at R6/RB. Updated R/B door at corridor Rm No 614 from water tight (WT) door to standard door at R5/RA. Strengthened wall at R6/RA-RB. See MFN-16-027, Revision 2.
14.	F12.3-62	Revised to reflect Rm denoted 734 (error) is labeled Rm No 735 (RCW (C) Surge Tank) and unnamed room in RB Operating Floor Rm No 716 is labeled Rm No 734 to reflect that an additional room was created. See MFN-16-027.
15.	F12.3-62	Deleted duct space adjacent to elevator R2/RF at elevation 31700mm. See MFN-16-027, Revision 2.

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(Public Version)

## Enclosure 3

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CD - ABWR DCD Tier 1 and Tier 2, Revision 7  
(Security-Related Information)

### Security-Related Information Notice

Enclosure 3 contains Security-Related Information identified by the designation

"{{{Security-Sensitive Information-Withhold Under 10 CFR 2.390}}}".

GEH hereby requests that this enclosure be withheld in its entirety from public disclosure in accordance with the provisions of 10 CFR 2.390.