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~~Security Notice~~

This letter forwards ~~Security-Related Information~~ to be withheld in accordance with 10 CFR 2.390. Upon the removal of Enclosure 2, the balance of this letter may be considered non-Security-Related.

MFN 16-002

Docket number: 52-045

February 19, 2016

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

Subject: **ABWR Standard Plant Design Certification Renewal Application Design Control Document, Revision 6, 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.

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.

The purpose of this letter is to transmit to the NRC ABWR DCD Revision 6, Tier 1 and Tier 2 for use in GEH's ABWR Design Certification Renewal Application. Revision 6 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. Revision 6 also corrects typographical mistakes that were uncovered during document development and other required formatting changes. Enclosure 1 contains a detailed listing by document and chapter of the changes made in going from ABWR DCD Revision 5 to Revision 6.

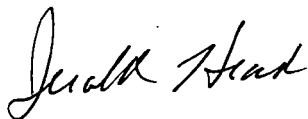
Enclosure 2 contains the Tier 1 and Tier 2 documents with "Security-Related Information" protected from public disclosure under the provisions in 10 CFR 2.390. The security-related information is marked with the designation "{{{Security-Related Information – Withhold Under 10 CFR 2.390}}}" GEH requests

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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,



Jerald G. Head
Senior Vice President, Regulatory Affairs

Commitments: No additional commitments are made in this response.

Enclosures:

1. ABWR DCD Revision 6 Chapter Change Lists
2. CD - ABWR DCD Revision 6, Tier 1 and Tier 2

cc: w/o enclosure 2

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DBR-0016464

Enclosure 1

MFN 16-002

ABWR DCD Revision 6 Chapter Change Lists

ABWR DCD Tier 1
25A5674AA Rev 6 Change List

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 5 to Revision 6.
2.	S1.1	Per GEH response to RAI 14.03-1 [MFN 15-022], added new definition and description for ASME Code.
3.	S2.4.1	Per GEH response to item #26 [MFN 15-069], replaced paragraph. <i>From:</i> Except for the non-ASME Code components of the alternating current (AC) power source independent water addition feature (Figure 2.4.1c), the entire RHR System shown on Figures 2.4.1a, 2.4.1b, and 2.4.1c is classified as safety-related. <i>To:</i> Except for the non-ASME Code components of the alternating current (AC) power source independent water addition feature (Figures 2.4.1b and 2.4.1c), the entire RHR System shown on Figures 2.4.1a, 2.4.1b, and 2.4.1c is classified as safety-related.
4.	S2.4.1	Per GEH response to item #26 [MFN 15-069], replaced item #7 with "AC power source independent water addition Divisions B and C)."
5.	S2.4.1	Per GEH response to item #26 [MFN 15-069], deleted paragraph and replaced with new paragraph under AC Independent Water Addition Mode section.
6.	S2.4.1	Per GEH response to item #26 [MFN 15-069], deleted and replaced paragraph in "Other Provisions" section.
7.	F2.4.1b	Per GEH response to item #26 [MFN 15-069], updated figure to show new AC independent water addition piping, valves, and connections for Loop B.
8.	S2.4.4	Per GEH response to item #26 [MFN 15-069], added new paragraph. "The RCIC system is capable of injecting sufficient water to the vessel to maintain core cooling with suction aligned to the suppression pool and a suction temperature of 121° C (250° F) during beyond design basis events (e.g. Extended Station Blackout)."
9.	T2.4.4	Per GEH response to item #26 [MFN 15-069], new criteria item # 11 added.

Item	Location	Description of Change
10.	S2.5.6	Per GEH response to item(s) #18b, 19 and 20 [MFN 15-065], updated to remove details related to the new fuel storage vault.
11.	T2.6.1, new item #7	Per GEH response to item #10 [MFN 15-051], added information that mitigates the possible accumulation of gases in important piping systems to table.
12.	S2.6.2, 7 th paragraph	Per GEH response to RAI 01.05-1 [MFN 14-071 & MFN 14-071 Supplement 1], clarified that the Fuel Pool Cooling and Cleanup System has both non-safety parameter displays and safety-related spent fuel pool wide range level instruments in the main control room.
13.	F2.6.2	Per GEH response to RAI 01.05-1 [MFN 14-071 & MFN 14-071 Supplement 1] added note #2 to figure. Text reads "Both narrow and wide range fuel pool level instruments are included."
14.	T2.6.2, item #5	Per GEH response to RAI 01.05-1 [MFN 14-071], clarified that DC and ITAAC #5 applies to non-safety displays for the Fuel Pool Cooling and Cleanup System in the main control room.
15.	T2.6.2, new item #7	Per GEH response to RAI 01.05-1 [MFN 14-071], added new ITAAC for safety-related displays for the Fuel Pool Cooling and Cleanup System.
16.	S2.12.1	Per GEH response to Item #26 [MFN 15-069], revised to described addition of external connection points for FLEX portable 480 VAC diesel generator(s).
17.	S2.12.1	Per GEH response to RAI 08.02-2 [MFN 15-073], additional information added to address the monitoring, detecting, and alarming in the control room and transferring of loads in the event of the open phase conditions.
18.	F2.12.1	Per GEH response to item #26 [MFN 15-069], updated figure to show FLEX diesel generator tie-in points to the 1E divisional power center.
19.	T 2.12.1	Per GEH response to item #26 [MFN 15-069], additional information item(s) #26, 27, 28 29 and 30 added to address the monitoring, detecting, and alarming in the control room and transferring of loads in the event of the open phase conditions.
20.	S2.15.3	Per GEH response to item(s) #18b, 19 and 20 [MFN 15-065] updated to remove "the new fuel vault."

Item	Location	Description of Change
21.	F2.15.5a	Per GEH response to RAI 02-1 [MFN 14-075], added new note #3, "Tornado missile barriers also resist design basis hurricane missiles."
22.	F2.15.5b	Per GEH response to RAI 02-1 [MFN 14-075], added new note #3, "Tornado missile barriers also resist design basis hurricane missiles."
23.	F2.15.5c	Per GEH response to RAI 02-1 [MFN 14-075], added new note #3, "Tornado missile barriers also resist design basis hurricane missiles."
24.	F2.15.5d	Per GEH response to RAI 02-1 [MFN 14-075], added new note #3, "Tornado missile barriers also resist design basis hurricane missiles."
25.	F2.15.5f	Per GEH response to RAI 02-1 [MFN 14-075], added new note #2, "Tornado missile barriers also resist design basis hurricane missiles."
26.	F2.15.5g	Per GEH response to RAI 02-1 [MFN 14-075], added new note #2, "Tornado missile barriers also resist design basis hurricane missiles."
27.	F2.15.5h	Per GEH response to RAI 02-1 [MFN 14-075], added new note #2, "Tornado missile barriers also resist design basis hurricane missiles."
28.	F2.15.5i	Per GEH response to RAI 02-1 [MFN 14-075], added new note #2, "Tornado missile barriers also resist design basis hurricane missiles."
29.	S2.15.6	Per GEH response to item #26 [MFN 15-069], replaced text: From: A fire water supply connection to the Residual Heat Removal System piping is provided from the portion of the FPS used for the Reactor and Control Buildings to provide an AC independent water addition system mode of the RHR System for reactor vessel injection or drywell sprays. To: Fire water supply connections to Loops B and C of the Residual Heat Removal System piping are provided from the portion of FPS used for the Reactor and Control Buildings. These connections are part of the AC independent water addition mode of the RHR System for reactor vessel injection, wetwell or drywell spray, or spent fuel pool makeup.
30.	S2.15.10, 2 nd to last paragraph, item (1)	Per GEH response to RAI 02-1 [MFN 14-075], added "hurricane (including hurricane missiles)" to list of natural phenomena.

Item	Location	Description of Change
31.	S2.15.12, 3 rd to last paragraph, item (1)	Per GEH response to RAI 02-1 [MFN 14-075], added “hurricane (including hurricane missiles)” to list of natural phenomena.
32.	S2.15.13, 5 th paragraph, item (1)	Per GEH response to RAI 02-1 [MFN 14-075], added hurricanes to list of natural phenomena.
33.	S2.15.13	Per GEH response to RAI 02-1 [MFN 14-075], corrected spelling of seismic and earthquake.
34.	S3.2	Per GEH response to RAI 12.02-3, [MFN15-003 Supplement 1], paragraph updated to include “design” acceptance criteria.
35.	T3.2a & b	Per GEH response to RAI 12.02-3, [MFN 15-003 Supplement 1], table updated to Design Acceptance Criteria.
36.	T5.0	Per GEH response to RAI 02-1 [MFN 14-075 Supplement 1], changed “Extreme Wind” to: “Severe Wind”
37.	T5.0	Per GEH response to RAI 02-1 [MFN 14-075 Supplement 2], Changed Tornado title to: “Extreme Wind” and reformatted Tornado and Hurricane column.
38.	T5.0	Per GEH response to RAI 02.05.04-1 [MFN 15-062], added an angular distortion (post construction) limit of 1/705 to table.
39.	T5.0, Notes	Per GEH response to RAI 02-1 [MFN 14-075], updated note (4) for “Spectrum I” missile definition. Added note (8) to explain, “Maximum hurricane wind speed is the nominal 3-second gust wind speed measured at 10 m above ground over open terrain.”
40.	T5.0, Notes	Per GEH response to RAI 02.05.04-1 [MFN 15-062], added note(s) (9, settlement value & 10, angular distortion).

ABWR DCD Chapter 1
25A5674AC Rev 6 Change List

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 5 to Revision 6.
2.	S 1.2.2.6.5	Per GEH response to item(s) #18b, 19 and 20 [MFN 15-065], updated to remove details of the new fuel storage vault and insert "inspected."
3.	S 1.2.2.6.6	Per GEH response to item(s) #18b, 19 and 20 [MFN 15-065], deleted under dry or flooded conditions.
4.	F1.2	Editorial change to correct the figure title for F1.2-13d on list of figures on page 1.2-40. No change to figure.
5.	T1.6-1	Per GEH response to RAI 06.03-1 [MFN 15-024], added reference NEDO-32686-A "Utility Resolution Guide for ECCS Suction Strainer Blockage, October 1998"
6.	F1.7-3 Sheet 4 of 4	Editorial change to correct formatting. No technical change.
7.	T1.8-19, item 9.1.5	Per GEH response to item #13 [MFN 15-049], revised the revision of Overhead heavy Load Handling Systems from 0 to 1.
8.	T1.8-20	Per GEH response to RAI 02-1 [MFN 14-075], updated NRC RG 1.76, "Design Basis Tornado for Nuclear Power Plants," from Revision 0 (April 1974) to Revision 1 (March 2007).
9.	T1.8-20	Per GEH response to RAI 06.03-1 [MFN 15-024], updated NRC RG 1.82 "Water Sources for Long-Term Recirculation Cooling following Loss-of-Coolant Accident," from Revision 1 (November 1985) to Revision 3 (November 2003).
10.	T1.8-20	Per GEH response to 09.05.01-1 [MFN 15-064, Revision 1], added, RG 1.189 "Fire Protection for Nuclear Power Plants," Revision 2 (October 2009).
11.	T1.8-20	Per GEH response to RAI 02-1 [MFN 14-075], added RG 1.221, "Design-Basis Hurricane and Hurricane Missiles for Nuclear Power Plants," Revision 0 (October 2011)."
12.	T1.8-20	Per GEH response to item #5 [MFN 15-063], added RG 4.21 "Minimization of Contamination and Radioactive Waste Generation: Life-Cycle Planning," (June 2008).
13.	T1.8-20 Notes	Editorial change: Notes to Table 1.8-20 were erroneously omitted in ABWR DCD Revision 5 from Revision 4.

Item	Location	Description of Change
14.	T1.8-21	Per GEH response to Item #13 [MFN 15-049], added "NOG-1 2004 Rules for Construction of overhead and Gantry Cranes to Codes or Standards.
15.	T1.8-21	Per GEH response to RAI 09.05.01-1 [MFN 15-064], added NEI 00-01 "Guidance for Post Fire Safe Shutdown Circuit Analysis, Rev 2," 2009.
16.	T1.8-21	Per GEH response to item # 17 [MFN 15-044], added NEI 06-12 R2 "B.5.b Phase 2 & 3 Submittal Guideline," NEI 12-06 R0, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide," NEI 14-01 R0, "Emergency Response Procedures and Guidelines for Beyond Design Basis Events and Severe Accidents," and NEI 91-04 R1, "Severe Accident Issue Closure Guidelines."
17.	T1.8-21	Per GEH response to item #28 [MFN 15-052], added "NEI 12-01 Guideline for Assessing Beyond Design Basis Accident Responses Staffing and Communications Capabilities," 2012.
18.	T1.8-21	Per GEH response to RAI 01.05-1 [MFN 14-071], added NEI 12-02, "Industry Guidance for Compliance with NRC Order EA-12-051, To Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation," 2012.
19.	T1.8-22	Per GEH response to RAI 06.03-1 [MFN 15-024], added generic letters GL 97-04 and 98-04.
20.	T1.8-22	Per GEH response to RAI 08.02-1 [MFN 14-056], added generic letter 2012-01, "Design Vulnerability in Electric Power System," dated 07/27/12.
21.	T1.8-22	Per GEH response to item #17 [MFN-15-044], added SECY-11-0124, "Recommended Actions to be Taken Without Delay from the Near-Term Task Force Report."
22.	T1.8-22	Per GEH response to RAI 01.05-1 [MFN 14-071], added Commission Order EA-12-051, "Issuance of Order to Modify Licenses with Regard to Reliable Spent Fuel Pool Instruments," dated March 2012.
23.	T1.8-22	Per GEH response to RAI 01.05-1 [MFN 14-071, Supplement 1], added EA-12-049 "Issuance of Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events."

Item	Location	Description of Change
24.	T1.8-22	Per GEH response to RAI 01.05-1 [MFN 14-071], added Interim Staff Guidance JLD-ISG-2012-03, "Compliance with Order EA-12-051, Reliable Spent Fuel Pool Instrumentation," dated August 2012, as applicable to ABWR.
25.	T1.9-1 Item #2.42	Per GEH response to item #3 [MFN 15-045], COL item # 2.42 has been updated; From: CRAC 2 To: Severe Accident Consequence
26.	T1.9-1, Item #3.2	Per GEH response to RAI 01.05-1 [MFN 14-071, Supplement 1], COL item #3.2 has been changed to read "Site-Specific Design Basis Tornado and Hurricane."
27.	T1.9-1, Item #3.4	Per GEH response to RAI 01.05-1 [MFN 14-071, Supplement 1], COL item #3.4 has been changed to read "Effects of Remainder of Plant Structures, Systems and Components Not Designed for Tornado and Hurricane Loads."
28.	T1.9-1, Item #3.8	Per GEH response to item #23 [MFN 15-054], COL item #3.8 has been changed to read "Seismic Category I Buried Piping, Conduits and Tunnels."
29.	T1.9-1 Item #3.26a	Per GEH response to Letter #5 [MFN 15-039], COL item #3.26a has been added to read "Loads Associated with Post-DBA Suppression Pool Water Level."
30.	T1.9-1 Item #7.1a	Per GEH response to RAI 01.05-01 [MFN 14-071, Supplement 1], added 7.1a Spent Fuel Pool Level Instruments to the table.
31.	T1.9-1, Item #4.1a	Per GEH response to RAI 06.03-1 [MFN 15-024, Supplement 1], COL item #4.1a has been added to read "Fuel Design for ECCS Strainer Bypass."
32.	T1.9-1 Item #4.1b	Per GEH response to [MFN 15-082], update to table adding COL item 4.1b since COL item 4.1a was previously used.
33.	T1.9-1, Item #5.1	Per GEH response to item #12 [MFN-15-038], replace "Conversion of Indicators" to "Leak Detection Monitoring."
34.	T1.9-1, Item #5.11	Per GEH response to item #10 [MFN 15-051], COL item #5.11 has been added to read "Program for Surveillance and Venting of Accumulated Gases."
35.	T1.9-1 Item #6.12	Per GEH response to RAI 06.03-1 [MFN 15-024, Supplement 1], COL item #6.12 has been added to read "ECCS Suction Strainer."

Item	Location	Description of Change
36.	T1.9-1 Item #7.1a	Per GEH response to RAI 01.05-1 [MFN 14-071, Supplement 1], COL item #7.1a has been added to read "Spent Fuel Pool Level Instruments" in section 7.5.3.1.
37.	T1.9-1 Item #8.7	Per GEH response to item #26 [MFN 15-069], COL item #8.7 has been added to read "Monitoring and Protection Against Design Vulnerabilities."
38.	T1.9-1 Items #9.1, #9.2	Per GEH response to item(s) #18b, 19 and 20 [MFN 15-065], deleted COL items #9.1 (New Fuel Storage Racks Criticality Analysis) and #9.2 (Dynamic and Impact Analysis of New Fuel Storage Racks.)
39.	T1.9-1, Item #9.39	Per GEH response to RAI 09.05.01-1 [MFN 15-064], COL item #9.39 has been added to read "Multiple Spurious Operations Evaluation."
40.	T1.9-1, Item #12.5a	Per GEH response to RAI 12.02-2 [MFN 15-003], COL item #12.5a has been added to read "Condensate Storage Tank Source Term and Shielding."
41.	T1.9-1, Item #12.8a	Per GEH response to item #5 [MFN 15-063], COL item #12.8a has been added to read "Requirement of 10CFR 20.1406."
42.	T1.9-1 Item 13.2a	Per GEH response to item #28 [MFN 15-052], COL item #13.2a has been added to read "Staffing and Communications Capabilities."
43.	T1AA-2	Per GEH response to item #26 [MFN 15-069], text has been modified from: E11-F101, 102, 103 To: E11-F101, 102, 103; B, C, adding (B, C).

ABWR DCD Chapter 2
25A5674AD Rev 6 Change List

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 5 to Revision 6.
2.	S2.0.2	Per GEH response to item #4 [MFN 15-050], new reference section S2.0.2 has been added.
3.	S2.0.2 Reference 2.0-1	Per GEH response to item #4 [MFN 15-050 Rev 1], reference 2.01 has added to read "Electric Power Research Institute, Advanced Light Water Reactor Utility Requirements Document," Revision 8, March 1999.
4.	T2.0-1	Per GEH response to item #4 [MFN 15-050], added a superscript ‡ as note to the table.
5.	T2.0-1	Per GEH response to RAI 02-1 [MFN 14-075, Supplement 1], changed "Extreme Wind" To: "Severe Wind."
6.	T2.0-1	Per GEH response to RAI 02-1 [MFN 14-075], added additional parameters to include hurricane parameters.
7.	T2.0-1	Per GEH response to RAI 02-1 [MFN 14-075, Supplement 2], added words "Extreme Wind" as title and indented "Tornado and Hurricane" as subtitles.
8.	T2.0-1	Per GEH response to RAI 02.05.04-1 [MFN 15-062], added additional parameters under Seismology to include Maximum Dynamic bearing Capacity, Maximum Settlement and Maximum Foundation Angular Distortion.
9.	T2.0-1	Per GEH response to item #4 [MFN 15-050], changed footnote ‡ to read: "As defined in Table 1.2-6 of Volume II of Reference 2.0-1."
10.	T2.0-1 notes	Per GEH response to RAI 02-1 [MFN 14-075], updated information in footnote f changed from 1800 kg to 1810 kg and from 125 kg to 130 kg. Also added "or at a 59% of the maximum horizontal speed of the design basis hurricane" to the 3 rd sentence.
11.	T2.0-1 notes	Per GEH response to RAI 02-1 [MFN 14-075] *** additional information added to footnote to read "Maximum hurricane wind speed is the nominal 3-second gust wind speed measured at 10 m above ground over open terrain."
12.	T2.0-1 notes	Per GEH response to RAI 02.05.04-1 [MFN 15-062], ††† additional information added to read "Settlement are long-term (post-construction) values" and ‡‡‡ "Angular distortion is defined as the slope between two adjacent columns. Angular distortion is long term (post construction) value."

Item	Location	Description of Change
13.	S2.2.2, 2 nd paragraph	Per GEH response to item # 3 [MFN15-045], text updated: From “using the CRAC 2 computer code” To: “using an appropriate severe accident consequence code, such as MACCS2.”
14.	S2.2.2, 3 rd paragraph	Per GEH response to item #3 [MFN15-045], text updated: Deleting “CRAC 2” and replacing with “Severe accident consequence.” New sentence added in same paragraph that reads “In order to describe appropriate input to the severe accident consequence code, input required for the CRAC 2 computer code is provided as an example.”
15.	S2.2.2, 5 th paragraph	Per GEH response to item #3 [MFN15-045], paragraph updated to read: “Analysis: The analysis for evaluation of a specific site will be accomplished with an appropriate severe accident consequence computer code, such as MACCS2, modified through Sandia National Laboratory. Basic input and code characteristics for MACCS2 are described in NUREG/CR-6613.”
16.	S2.3.1.2 Items #2 & 3	Per GEH response to RAI 02.05.04-1 [MFN 15-062], added additional information to Items #2 and Item #3.
17.	S2.3.3	Per GEH response to item #3 [MFN 15-045], section heading changed to “Severe Accident Consequence Computer Code Calculations.”

ABWR DCD Chapter 3
25A5674AE Rev 6 Change List

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 5 to Revision 6.
2.	S3.1.2.6.2.2.1	Per GEH response to item(s) #18b, 19 and 20 [MFN 15-065], paragraph revised to remove new fuel storage vault.
3.	S3.1.2.6.3.2, 2 nd paragraph	Per GEH response to item(s) #18b, 19 and 20 [MFN 15-065], deleted 2 nd paragraph to remove new fuel storage vault.
4.	T3.2-1, Item # E1-11	Per GEH response to item #26 [MFN 15-069], text is modified to include RHR Subsystem B values to fire protection, Subsystems B and C (F100B/C, F103B/C, and F104B/C).
5.	T3.2-1 Item # G2-12	Per GEH response to RAI 01.05-1 [MFN 14-071], Table 3.2-1 modified to include safety related wide range spent fuel pool level instruments.
6.	T3.2-1, item # N22	Per GEH response to RAI 11.04-1 [MFN 15-023], updated table to include footnotes (p)(q)(v).
7.	T3.2-1, notes, item (q)	Per GEH response to RAI 11.04-1 [MFN 15-023], updated notes from: 11.3.4.8 (doesn't exist) to 11.3.8 for offgas system.
8.	S3.3	Per GEH response to RAI 02-1 [MFN 14-075], revised Section 3.3 title from "Wind and Tornado Loadings" to "Severe Wind and Extreme Wind (Tornado and Hurricane) Loadings."
9.	S3.3, 1 st paragraph	Per GEH response to RAI 02-1 [MFN 14-075, Supplement 1], deleting "tornado" and adding word "severe."
10.	S3.3.1	Per GEH response to RAI 02-1 [MFN 14-075], Revised Subsection 3.3.1 title from "Wind Loadings" to "Severe Wind Loads."
11.	S3.3.1.2	Per GEH response to RAI 02-1 [MFN 14-075, Supplement 2], deleting "in accordance with Reference 3.3-1" and replacing with "given in Reference 3.3.1 which is consistent with that of ASCE/SEI 7-05."
12.	S3.3.2	Per GEH response to RAI 02-1 [MFN 14-075 and MFN 14-075 Supplement 1], Revised Subsection 3.3.2 title from "Tornado Loadings" to "Extreme Wind Loads (Hurricane and Tornados)."
13.	S3.3.2.1, new 1 st sentence	Per GEH response to RAI 02-1 [MFN 14-075], added description of extreme wind loads.
14.	S3.3.2.2, 1 st paragraph	Per GEH response to RAI 02-1 [MFN 14-075], new last two sentences added discussion of Reg. Guide 1.221.

Item	Location	Description of Change
15.	S3.3.2.3, S3.3.3.2, S3.3.3.4	Per GEH response to RAI 02-1 [MFN 14-075, Supplement 1], adding "and Hurricane" to section and section heading name.
16.	S3.5.1.4 and S3.5.1.5 1 st paragraph	Per GEH response to RAI 02-1 [MFN 14-075 and MFN 14-075 Supplement 1], rewrote paragraph to consider hurricane-generated missiles in addition to previously considered tornado-generated missiles in regard to missiles generated by natural phenomena.
17.	S3.5.2, 2 nd paragraph, 4 th sentence	Per GEH response to RAI 02-1 [MFN 14-075], changed sentence From: Since the tornado missiles are the design basis missiles. To: Since the tornado/hurricane missiles are the design basis missiles.
18.	S3.5.2, 2 nd paragraph, last sentence	Per GEH response to RAI 02-1 [MFN 14-075, Supplement 1], changed sentence; From: Provisions are made to protect the charcoal delay tanks against tornado missiles. To: Provisions are made to protect the charcoal delay tanks against tornado/hurricane missiles.
19.	S3.5.3, 1 st paragraph	Per GEH response to RAI 02-1 [MFN 14-075], rewrote paragraph to consider hurricane-generated missiles per Reg. Guide 1.221.
20.	S3.5.4.2	Per GEH response to RAI 02-1 [MFN 14-075], added subsection 3.5.4.2 title from "Missiles Generated by Other Natural Phenomena" to "Missiles Generated by Site-Specific Natural Phenomena."
21.	S3.5.4.2, 1 st sentence	Per GEH response to RAI 02-1 [MFN 14-075], changed "other site-specific natural phenomena" to just "site-specific natural phenomena."
22.	S3.5.4.4	Per GEH response to RAI 02-1 [MFN 14-075 and MFN 14-075 Supplement 1], revised Subsection 3.5.4.2 title from "...Due to a Design Basis Tornado" to "...Due to a Design Basis Extreme Wind (Tornado and Hurricane)."
23.	S3.5.4.4, 1 st sentence	Per GEH response to RAI 02-1 [MFN 14-075 and MFN 14-075 Supplement 1], changed "tornado" to "tornado/hurricane" (two places).
24.	S3.7.2.8, 1 st paragraph, item (2)	Per GEH response to RAI 02-1 [MFN 14-075], changed "tornado" to "tornado/hurricane".
25.	S3.7.3.12	Per GEH response to item #23 [MFN 15-054], section has been updated by explicitly specifying additional Seismic Category 1 embedded tunnel information.
26.	S3.8.4.1.2, 3 rd paragraph, 1 st sentence	Per GEH response to RAI 02-1 [MFN 14-075], changed "tornado" to "tornado/hurricane".

Item	Location	Description of Change
27.	S.3.8.4.1.3	Per GEH response to item #23 [MFN 15-054], 3 rd paragraph modified to include "rebar stresses and required splices."
28.	S3.8.4.1.6, new	Per GEH response to item #23 [MFN 15-054], section added "Seismic Category 1 Buried Piping, Conduit and Tunnel specific criteria."
29.	S3.8.4.2.1, New item (8)(n),	Per GEH response to RAI 02-1 [MFN 14-075], added Regulatory Guide 1.221, "Design-Basis Hurricane and Hurricane Missiles for Nuclear Power Plants," to the list of applicable NRC Regulatory Guides.
30.	S3.8.4.3.1.1,	Per GEH response to RAI 02-1 [MFN 14-075], added the following to the definition of W _t , "The design basis tornado missile loads bound those of the design basis hurricane."
31.	S3.8.4.5.1.1, 2 nd paragraph, 1 st sentence	Per GEH response to RAI 02-1 [MFN 14-075], changed "tornado" to "tornado, hurricane".
32.	S3.8.4.5.2, 1 st paragraph, last sentence	Per GEH response to RAI 02-1 [MFN 14-075], changed "tornado" to "extreme/wind (tornado and hurricane)".
33.	S3.8.6.5, new	GEH response to RAI 06.02.01-1 [MFN 15-039], a new section has been added "Loads Associated with Post-DBA Suppression Pool Water Level."
34.	S3.8.6.6 new	Per GEH to item #23 [MFN 15-054], a new section has been added to updated Seismic Category 1 Buried Piping, Conduit and Tunnel specific criteria.
35.	T3.8-2	Editorial change to update symbol that was erroneously changed in Revision 5 generation.
36.	T3.8-7, new note 3	Per GEH response to RAI 02-1 [MFN 14-075], added new note: "For extreme wind loads, the design basis tornado winds and missile loads bound those of the design basis hurricane."
37.	S3.9.3.1.1.5	Editorial change to update symbol that was erroneously changed in Revision 5 generation.
38.	T3.9-8	Per GEH response to item #26 [MFN 15-069], the table is modified to add additional valves.
39.	S3.12.2.1	Per GEH response to item #23 [MFN 15-054], section revised to include specified requirement found in NRC SRP 3.7.3.
40.	S3.12.3	Per GEH response to item #23 [MFN 15-054], non-safety related was added to section 3.12.3 heading.

Item	Location	Description of Change
41.	F3B-5	Editorial correction of word "Circumferential"
42.	S3G.2.3	Editorial change to update symbol that was erroneously changed in Revision 5 generation.
43.	S3H.1.2	Per GEH response to RAI 02-1 [MFN 14-075], added new last sentence: "For extreme wind loads, the design basis tornado whose winds and missile loads bound the design basis hurricane are as specified in 3H.1.4.3.1."
44.	3H.1.3.1	Per GEH response to RAI 19-8 [MFN 15-053], additional description information added for reactor cavity shield blocks.
45.	S3H.1.4.2	Editorial change to update symbol that was erroneously changed in Revision 5 generation.
46.	S3H.1.4.2 Item (7)	Per GEH response to RAI 02-1 [MFN 14-075, Supplement 1], Changed "Extreme Wind" to "Severe Wind."
47.	S3H.1.4.2, new Item (9)	Per GEH response to RAI 02-1 [MFN 14-075, Supplement 3], Hurricane parameter information updated.
48.	S3H.1.4.3.1.4, new first sentence	Per GEH response to RAI 02-1 [MFN 14-075], added new first sentence: "For extreme wind loads, the design basis tornado winds and missile loads bound those of the design basis hurricane."
49.	S3H.1.5.7, first paragraph, new last sentence	Per GEH response to RAI 02-1 [MFN 14-075], added new sentence: "The winds and missile loads of design basis tornado bound those of design basis hurricane."
50.	T3H.1-5b	Per GEH response to RAI 02-1 [MFN 14-085], added new note: "The design basis tornado winds and missile loads bound those of the design basis hurricane."
51.	F3H	Editorial change to figure title on page 3H.1-102 and also editorial change to update list of figures on page 3H.1-103.
52.	S3H.2.2, third & 4 th bullets	Per GEH response to RAI 02-1 [MFN 14-075], changed "tornado" to "tornado/hurricane".
53.	S3H, Section 3H.2.4.3.3	Per GEH response to RAI 02-1 [MFN 14-075], added: "And for extreme wind loads, the design basis tornado whose winds and missile loads bound the design basis hurricane, as specified in 3H.1.4.3.1."
54.	S3H.2.5.2, third paragraph, new last sentence	Per GEH response to RAI 02-1 [MFN 14-075], added sentence: "For extreme wind loads, the design basis tornado whose winds and missile loads bound the design basis hurricane are as specified in 3H.1.4.3.1."

Item	Location	Description of Change
55.	S3H.2.5.3.1.3, third paragraph, first sentence	Per GEH response to RAI 02-1 [MFN 14-075], changed “tornado” to “tornado/hurricane”.
56.	S3H.2.5.3.2, third paragraph	Per GEH response to RAI 02-1 [MFN 14-075], changed “tornado” to “tornado/hurricane”.
57.	F3H.2	Editorial change to list of figures on page 3H.2-32.
58.	S3H.3.2, last bullet, first sentence	Per GEH response to RAI 02-1 [MFN 14-075], changed “tornado” to “tornado/hurricane”.
59.	S3H.3.4.3.3, first paragraph, new last sentence	Per GEH response to RAI 02-1 [MFN 14-075], added new last sentence: “The design basis tornado whose wind and missile loads bound the design basis hurricane are as specified in 3H.1.4.3.1.”
60.	S3H, Table 3H.3-16, new Note	Per GEH response to RAI 02-1 [MFN 14-075], added new note: “For extreme wind loads, the design basis tornado whose winds and missile loads bound the design basis hurricane are as specified in 3H.1.4.3.1.”
61.	F3H.3	Editorial change to list of figures on page 3H.3-39.
62.	3H.6, items 3 & 4	Per GEH response to item #2 RAI 19-9 [MFN-15-053 Revision 1], added description and figures for reactor cavity shield blocks.
63.	3H.6, items 8 & 9	Per GEH response to RAI 19-9 [MFN 15-053], additional key information added for Control Building Annex exterior #8 and Service Building exterior walls #9.
64.	3MA.2.2	Per GEH response to item #26 [MFN 15-069], modified to reflect the addition of alternating current independent water addition (ACIWA) to RHR Loop B.
65.	3MA.2.3	Per GEH response to item #26 [MFN 15-069], modified to move the “RHR Subsystem suction piping from the suppression pool” from the middle of RHR B section to the beginning of the RHR C section and to add the new “RHR Subsystem B outdoor fire truck connection in RHR pump discharge pipe to the RPV” to the end of the RHR B section.

ABWR DCD Chapter 4
25A5674AF Rev 6 Change List

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 5 to Revision 6.
2.	S4.2.1.1	Per GEH response to RAI 06.03-1 [MFN 15-024, Supplement 1], added new impacted section in last paragraph.
3.	S4.2.5	Per GEH response to RAI 06.03-1 [MFN 15-024, Supplement 1], added new section titled: "COL License Information"
4.	S4.2.5.1	Per GEH response to RAI 06.03-1 [MFN 15-024, Supplement 1], added new section titled: "Evaluation of Post-LOCA Fuel Bundle Blockage due to ECCS Strainer Debris Bypass."
5.	S4.2.5.2	Per GEH response to item #18a [MFN 15-082], added new section titled "Reactor Core Seismic and LOCA Structural Acceptance".
6.	S4.6.1.2.5.3	Editorial change to update symbols that were erroneously changed in Revision 5 generation.

ABWR DCD Chapter 5
25A5674AG Rev 6 Change List

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 5 to Revision 6.
2.	S5.2.2.2.2.1	Editorial change to update symbol that was erroneously changed in Revision 5 generation.
3.	S5.2.6.1	Per GEH response to item #12 [MFN15-038], COL item has been added to develop operating procedures to respond to low-level reactor coolant leakage below technical specification limits.
4.	S5.4.6.1.1.1	Per GEH response to item #26 [MFN 15-069], paragraph revised to read: The RCIC System shall initiate and discharge, within 30 seconds, a specified constant flow into the reactor vessel over a specified pressure range. The RCIC water discharge into the reactor vessel varies between a temperature of 10°C up to and including a temperature of 77°C during design conditions and up to 121°C during beyond design basis events (e.g. Extended Station Blackout). The mixture of cool RCIC water and the hot steam does the following:
5.	S5.4.7.1 5 th paragraph	Per GEH response to item #26 [MFN 15-069], paragraph updated to add additional connections for RHR pump discharge.
6.	S5.4.7.1.1.10	Per GEH response to item #26 [MFN 15-069], paragraph updated to add additional connections for RHR pump discharge and additional valves.
7.	S5.4.7.1.1.10.4	Per GEH response to item #26 [MFN 15-069], paragraph is modified.
8.	S5.4.7.2.2 Item #2(c)	Per GEH response to RAI 06.02.01.01.C-1 [MFN 14-052 Revision 1], changed: The heat exchanger capacity, K, is 370.5kJ/°C-s per heat exchanger. To: The heat exchanger capacity, K, is 4.27×10^5 W/°C per RHR heat transfer loop. This K value characterizes the combined performance of the equipment outline in Appendix 5B.3-(d).
9.	S5.4.7.2.6 Item #8	Per GEH response to item #26 [MFN 15-069], paragraph updated to add additional connections to RHR pump discharge.

Item	Location	Description of Change
10.	S5.4.8.3	Per GEH response to item #10 [MFN 15-051], added new paragraph, "A vent line down to the main steam line is provided at the high point of the RPV head spray line in order to avoid accumulation of hydrogen generated by radiolysis of reactor water during normal reactor operation."
11.	S5.4.15.5	Per GEH response to item #10 [MFN 15-051], added new requirement for COL "Program for Surveillance and Venting of Accumulated Gases."
12.	T5.4-2 Items 1 & 7	Per GEH response to item #26 [MFN 15-069], items 1 and 7 are updated: (1) Modified to account for analysis of RCIC system operation at 121° C SP temperature during beyond design basis events (e.g. Extended Station Blackout). (7) Piping expansion calculations were based on 121° C.
13.	S5B.2.3	Per GEH response to RAI 06.02.01.01.C-1 [MFN 14-052 Revision 1], revised formula.
14.	S5B.2.4 1 st equation	Per GEH response to RAI 06.02.01.01.C-1 [MFN 14-052 Revision 1], corrected sign from (+) to (=).
15.	S5B.2.4, last equation	Per GEH response to RAI 06.02.01.01.C-1 [MFN 14-052], corrected plus sign from (+) to (=).
16.	S5B.3	Per GEH response to RAI 06.02.01.01.C-1 [MFN 14-052 and MFN 14-052 Revision 1], section revised to show the results of calculations implemented to provide a more accurate and realistic simulation of negative pressurization events consistent with the ABWR plant system design, operation and operating conditions.

ABWR DCD Chapter 6
25A5674AH Rev 6 Change List

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 5 to Revision 6.
2.	T6.2-2a, Item B, sub-item 3c	Per GEH response to RAI 06.02.01.01.C-1 [MFN 14-052 Revision 1], revised table to reflect revised containment analysis of ABWR.
3.	T6.2-2a, Item B, sub-item 3d	Per GEH response to RAI 06.02.01.01.C-1 [MFN 14-052 Revision 1], revised table to reflect revised containment analysis of ABWR.
4.	T6.2-2a, footnote	Per GEH response to RAI 06.02.01.01.C-1 [MFN 14-052 Revision 1], added new footnote to define the RHR heat exchanger characteristic.
5.	T6.2-7	Per GEH response to item #26 [MFN 16-001 and MFN 16-001 Revision 1], redesign of ABWR Containment Overpressure Protection System (COPS) system line size updated.
6.	F6.2-17	Editorial change to revise vacuum breaker size.
7.	F6.2-38	Editorial change to the title of Figure 6.2-38.
8.	S6.3.2.2	Editorial, duplicate words "Figure and Table" were deleted.
9.	S6.3.2.2.1	Editorial, duplicate words "Figure and Table" were deleted.
10.	S6.3.3.4	Editorial, duplicate words "Figure and Table" were deleted.
11.	S6.3.3.7.1	Editorial, duplicate words "Figure and Table" were deleted.
12.	T6.3-1	Editorial change to update symbols that were erroneously changed in Revision 5 generation.
13.	F6.35 and F6.36	Editorial change to correct out of sequence and redundant pages 6.3-36 and 6.3-37 from Revision 4.
14.	S6C Entire section and tables	Per GEH response to RAI 06.03-1 [MFN 15-024 and MFN 15-024 Supplement 1], updated design and new developments in Suction Strainer design.
15.	S6C.1	Per GEH response to RAI 06.03-1 [MFN 15-024, Supplement 1, section has been revised.
16.	T6C-1	Per GEH response to RAI 06.03-01 [MFN 15-024], table deleted.
17.	T6C-2	Per GEH response to RAI 06.03-01 [MFN 15-024], table deleted.
18.	S6D.2.3	Editorial change to correct out of sequence pages from Revision 4.
19.	S6D.2.4	Editorial change to correct out of sequence pages from Revision 4.

ABWR DCD Chapter 7
25A5674AJ Rev 6 Change List

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 5 to Revision 6.
2.	F7.2	Editorial changes on list of figures on page 7.2-55.
3.	F7.3	Editorial changes on list of figures on page 7.3-92.
4.	S7.5.2.1 (q)	Per GEH response to RAI 01.05-1 [MFN 14-071 and MFN 14-071 Supplement 1], new section (q) has been added for "Spent fuel Pool Wide Range Level Instrumentation."
5.	S7.5.3	Per GEH response to RAI 01.05-1, [MFN 14-071], COL information has been added.
6.	S7.5.3.1	Per GEH response to RAI 01.05-1 [MFN-14-071], added new section "Spent Fuel Pool Level Instruments."
7.	S7.5.4	Per GEH response to RAI 01.05-1 [MFN 14-071 and MFN 14-071, Supplement 1], Reference Section has been added.
8.	S7.7.1.2.1 (5)(b)(iii)	Per GEH response to RAI 07-1 [MFN 15-037], section revised to discuss ganged withdrawal sequence restrictions.
9.	S7.7.1.2.2	Editorial change to update symbol that was erroneously changed in Revision 5 generation.
10.	F7.7	Editorial change on list of figures on page 7.7-86.

ABWR DCD Chapter 8
25A5674AK Rev 6 Change List

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 5 to Revision 6.
2.	S8.2.4.6	Per GEH response to RAI 08.02-1 [MFN 14-056], added new subsection, "Monitoring and Protection Against Design Vulnerabilities."
3.	S8.2.6	Per GEH response to RAI 08.02-1 [MFN 14-056], added new reference 8.2-3 "NRC Bulletin 2012-01, Design Vulnerability in Electric Power System."
4.	S 8.3.1.1.2.1	Per GEH response to item #26 [MFN 15-069], additional text added to describe the addition of external connection points for FLEX portable 480 VAC diesel generators.
5.	S 8.3.1.1.6.3 Items (1) and (6)	Per GEH response to RAI 08.02-1 [MFN 14-056], modified text to add additional protective relay system.
6.	F83	Editorial change on list of figures on page 8.3-67.

ABWR DCD Chapter 9
25A5674AL Rev 6 Change List

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 5 to Revision 6.
2.	S9.1	Per GEH response to item(s) #18b, 19 and 20 [MFN 15-065], delete 1 st paragraph. Add additional text "a minimum of" to 2 nd paragraph and Replace 3 rd paragraph with the following: "New fuel will be stored in the spent-fuel storage racks in the fuel storage pool."
3.	S9.1	Various section updates throughout 9.1 in response to GEH [MFN 15-065], due to removal of new fuel storage vault.
4.	S9.1	Various section updates through 9.1 in response to GEH [MFN 14-075], changing "tornadoes" to "tornadoes/hurricane," and "tornado missiles" to "tornado/hurricane missiles."
5.	S9.1.2	Per GEH response to [MFN 15-065], various updates showing replaced fuel storage racks and removal of new fuel storage vault.
6.	S9.1.3.2 11 th paragraph	Per GEH response to RAI 01.05-1 [MFN 14-071 and MFN 14-071, Supplement 1], adding new paragraph to comply with applicable guidance in JLD-ISG-2012-03, "Compliance with Order EA-12-051, Reliable Spent Fuel Pool Instrumentation," Revision 0.
7.	S9.1.3.2 13 th paragraph	Per GEH response to RAI 01.05-1 [MFN 14-071 & MFN 14-071 Supplement 1], replacing text: From: The water level in the spent fuel storage pool is maintained at a height sufficient to provide shielding for normal building occupancy To: During normal plant operation the water level in the spent-fuel storage pool is maintained at a height sufficient to provide shielding for normal building occupancy with indication of level from non-safety narrow range level transmitters.
8.	S9.1.4	Per GEH response to [MFN 15-064], new fuel storage vault has been removed in various locations in section 9.1.4.
9.	S9.1.5.1	Per GEH response to item #13 [MFN 15-049], additional text is added to end of paragraph. "For design of Type 1 cranes, ASME NOG-1 is an acceptable approach to meeting NUREG-0554 criteria."
10.	S9.1.5.2.1	Per GEH response to item #13 [MFN 15-049], additional text is added to end of paragraph. "For design of Type 1 cranes, ASME NOG-1 is an acceptable approach to meeting NUREG-0554 criteria."
11.	S9.1.6.1	Per GEH response to item(s) #18b, 19 and 20 [MFN 15-065], deleted section.

Item	Location	Description of Change
12.	S9.1.6.2	Per GEH response to item(s) #18b, 19 and 20 [MFN 15-065], deleted section.
13.	S9.1.6	Various section updates throughout 9.1.6 in response to GEH [MFN 15-065], due to removal of new fuel storage vault.
14.	S9.1.7	Per GEH response to RAI 01.05-1 [MFN 14-071], added Reference section and Reference 9.1-1 and 9.1-2
15.	T9.1-6	Per GEH response to item #13 [MFN 15-049], additional Reference has been added "ASME NOG-1 and Rules for Construction of Overhead and Gantry Cranes (Top Running Bridges, Multiple Girder)"
16.	T9.1-8 and T9.1-9	Various section updates throughout 9.1.8 in response to GEH [MFN 15-065], due to removal of new fuel storage vault.
17.	F9.1-13	Editorial Correction to correct spelling error.
18.	F9.1-14	Per GEH response to GEH [MFN 15-065], figure updated due to removal of new fuel storage vault.
19.	S9.2	Per GEH response to RAI 02-1 [MFN 14-075], various locations in sections 9.2.5 have been revised.
20.	S9.2.5.7.2	Per GEH response to RAI 02-1 [MFN 14-075], changed subsection title from "Effects of Severe Natural Events or Site-Related Events" to "Effects of Extreme Natural Events or Site-Related Events".
21.	S9.2.5.7.2, 1 st sentence	Per GEH response to RAI 02-1 [MFN 14-075], changed "tornado" to "tornado/hurricane".
22.	F9.2	Editorial change on list of figures on page 9.2-65.
23.	S9.3.5.3	Per GEH response to RAI 02-1 [MFN 14-075], added "hurricanes" to list of phenomena from which the SLCS is protected in ASB 3-1 and MEB 3-1 section.
24.	F9.3	Editorial change to figure title on page 9.3-43
25.	S9.4	Per GEH response to RAI 02-1 [MFN 14-075], various locations in section 9.4, changed "tornado missile" to "tornado /hurricane missile."
26.	S9.4-3	Editorial change to correct spelling errors (2 places).
27.	T9.4c	Editorial change to correct spelling error.
28.	F9.4	Editorial corrections to correct 5 figure titles on page 9.4-51 & 9.4-53.

Item	Location	Description of Change
29.	S9.5	Per GEH response to RAI 02-1 [MFN 14-075], various locations in section 9.5, changed “tornado missile” to “tornado /hurricane missile.”
30.	S9.5.1.6.5	Per GEH response to [MFN 15-064] a new section 9.5.1.6.5 has been added.
31.	S9.5.4.3, 3 rd paragraph, new 2 nd sentence	Per GEH response to RAI 02-1 [MFN 14-075], added, “For extreme wind loads, the design basis tornado whose winds and missile loads bound the design basis hurricane are as specified in 3H.1.4.3.1.
32.	S9.5.6.1, new last sentence	Per GEH response to RAI 02-1 [MFN 14-075], added, “For extreme wind loads, the design basis tornado whose winds and missile loads bound the design basis hurricane are as specified in 3H.1.4.3.1.”
33.	S9.5.8.1, 1 st paragraph, second to last sentence	Per GEH response to RAI 02-1 [MFN 14-075], changed “tornado generated missile-protected structure” to “tornado/hurricane missile-protected structure”.
34.	S9.5.13.22	Per GEH response to [MFN 15-064], new section added “Multiple Spurious Operations Evaluation”
35.	S9.5.4.3 3 rd paragraph	Per GEH response to RAI 09-1 [MFN 14-075], added tornadoes/hurricanes and severe winds and the sentence for extreme wind loads, the design basis tornado whose winds and missile loads bound the design basis hurricane are as specified in 3H.1.4.3.1.
36.	S9.5.14	Per GEH response to [MFN 15-064], new reference # 9.5-10 added, “NEI 00-01, Guidance for Post Fire Safe Shutdown Circuit Analysis, Revision 2, May 2009”
37.	F9.5	Editorial change to list of figures on page 9.5-85.
38.	S9A.2.4, item (4), 3 rd sentence	Per GEH response to RAI 02-1 [MFN 14-075], changed “missile/tornado doors” to “missile/tornado/hurricane protected doors”.
39.	S9A.3.7, 1 st paragraph, 1 st sentence	Per GEH response to RAI 02-1 [MFN 14-075], added “hurricane” to list of functions for multipurpose doors.
40.	S9A.4.1.6.12	Per GEH response to [MFN 15-065], new fuel storage vault deleted.
41.	S9A.4.1.6.39	Per GEH response to [MFN 15-065], new fuel storage vault deleted.
42.	S9A.4.2.6.4	Per GEH response to [MFN 15-065], new fuel storage vault deleted.
43.	F9A.4	Editorial change to various figure titles on pages 9A.4-491 and 9A.4-4-492

ABWR DCD Chapter 10
25A5674AM Rev 6 Change List

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 5 to Revision 6.
2.	Entire Chapter	Various editorial changes.

ABWR DCD Chapter 11
25A5674AN Rev 6 Change List

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 5 to Revision 6.
2.	S11.2.1.2, 9 th paragraph	Per GEH response to RAI 12.02-2 [MFN 15-003 and MFN 15-003, Supplement 1], added discussion on precluding rainwater into the CST dike area, addressed the CST transfer pumps, pipe chase, leakage monitoring and MCR alarms.
3.	S11.2.1.2.2	Per GEH response to RAI 11.04-1 [MFN 15-023], updated Regulatory Guide from 1.43 to 1.143.
4.	F11.2	Editorial change on list of figures on page 11.2-12.
5.	S11.3.4.3.12	Editorial change, 2 nd paragraph, revised reference number
6.	S11.3.12	Editorial change, revised reference numbers.
7.	S11.4.1.2	Per GEH response to RAI 11.04-1 [MFN 15-023 and MFN 15-023 Supplement 1], last paragraph updated to include Regulatory Guide 1.143.

ABWR DCD Chapter 12
25A5674AP Rev 6 Change List

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 5 to Revision 6.
2.	S12.2.1.2.1.1.4, 1 st paragraph	Per GEH response to RAI 12.02-1 [MFN 14-079], corrected gamma ray source energy units of measurement from J/cm ³ /s/MW thermal to pJ/cm ³ /sec/MWt.
3.	S12.2.1.2.8, 1 st sentence	Per GEH response to RAI 12.02-1 [MFN 14-079], deleted phrase "in terms of J/s/W."
4.	S12.2.1.2.9.6	Per GEH response to RAI 12.02-2 [MFN 15-003], added new section titled "Radioactivity in the Condensate Storage Tank" which requires the COL applicant to determine the CST source term and provided adequate CST.
5.	S12.2.3.2	Per GEH response to RAI 12.02-2 [MFN 15-003], added new COL License Information Item "Condensate Storage Tank Source Term and Shielding to provide adequate shielding around the CST.
6.	T12.2-3b	Per GEH response to RAI 12.02-1 [MFN 14-079], replaced Table 12.2-3b in its entirety.
7.	T12.2-3c	Per GEH response to RAI 12.02-1 [MFN 14-079], replaced Table 12.2-3c in its entirety.
8.	T12.2-5a, new last entry	Per GEH response to RAI 12.02-2 [MFN 15-003], added Condensate Storage Tank as a radiation source.
9.	S12.3.1.5	Per GEH response to item #5 [MFN 15-063], added new section "Minimization of Contamination and Radioactive Waste Generation" to provide a general description of the ABWR design and operational objects that address the requirements of Regulatory Guide 4.21.
10.	S12.3.1.5.1	Per GEH response to item #5 [MFN 15-063], added new section "Design Considerations."
11.	S12.3.1.5.2	Per GEH response to item #5 [MFN 15-063], added new section "Operational/Programmatic Considerations."
12.	S12.3.4.3	Per GEH response to items #18b, 19 and 20 [MFN 15-065], modified to reflect removal of new fuel vault.
13.	S12.3.7.5	Per GEH response to item #5 [MFN 15-063], added new COL License Information item for "Requirement of 10 CFR 20.1406."

Item	Location	Description of Change
14.	S12.3.8 New Reference 12.3-11	Per GEH response to item #5 [MFN 15-063], added new reference "12.3-11 10 CFR 20.1406, "Minimization of Contamination," Title 10 Code of Federal Regulations, Part 20.1406.
15.	S12.3.8 New Reference 12.3-12	Per GEH response to item #5 [MFN 15-063], added new reference "12.3-12 USNRC RG 4.21, "Minimization of Contamination and Radioactive Waste Generation: Life cycle Planning," Regulatory Guide 4.21 June, 2008.
16.	T12.3-8	Per GEH response to item #5 [MFN 15-063], new table added "12.3-8 Regulatory Guide 4.21 Design Objective and Applicable DCD Subsection Information."
17.	F12.3	Editorial changes to figure titles on pages 12.3-46, 12.3-47, 12.3-48 and 12.3-49.
18.	S12.3.8	Per GEH response to item #5 [MFN 15-063], added two additional References 12.3-11 and 12.3-12.

ABWR DCD Chapter 13
25A5674AR Rev 6 Change List

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 5 to Revision 6.
2.	S13.3, 2 nd paragraph	Per GEH response to item #28 [MFN 15-052], added new text to address NEI 12-01.
3.	S13.3.1.2	Per GEH response to item #28 [MFN 15-052], new section added "Staffing and Communications Capabilities to address NEI 12-01."
4.	S13.3.2, new	Per GEH response to item #28 [MFN 15-052], new section added "References" to address NEI 12-01.
5.	S13.5.3.2	Per GEH response to item #17 [MFN 15-044], additional bullet items added.
6.	S13.5.4	Per GEH response to item #17 [MFN 15-044], additional references added.

ABWR DCD Chapter 14
25A5674AS Rev 6 Change List

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 5 to Revision 6.

ABWR DCD Chapter 15
25A5674AT Rev 6 Change List

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 5 to Revision 6.
2.	Entire Chapter	Various editorial changes.

ABWR DCD Chapter 16
25A5674AU Rev 6 Change List

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 5 to Revision 6.
2.	Entire Chapter	Updated the format of Chapter 16 Tech Specs. And Bases to consistent with NRC's Revision of the Standard Technical Specifications (STS).
3.	Spec. LCOs 3.5.1	Per GEH response to item #26 [MFN 15-069], actions updated to reflect the addition of ACIWA to RHR Loop B. Also bases B2 and C12 updated to reflect the addition of ACIWA to RHR Loop B.
4.	Spec. LCOs 3.6.2.4	Per GEH response to item #26 [MFN 15-069], required actions updated to reflect the addition of ACIWA to RHR Loop B. Also bases updated to reflect the addition of ACIWA to RHR Loop B.

ABWR DCD Chapter 17
25A5674AV Rev 6 Change List

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 5 to Revision 6.

ABWR DCD Chapter 18
25A5674AW Rev 6 Change List

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 5 to Revision 6.
2.	F18C	Editorial change to list of figures on page 18C-7
3.	T18F-3	Editorial change to update symbol that was erroneously changed by Revision 5 generation.

ABWR DCD Chapter 19
25A5674AX Rev 6 Change List

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 5 to Revision 6.
2.	S19.8.1.3	Per GEH response to item #26 [MFN 15-069], additional text is added to paragraph under "AC-Independent Water Addition (ACIWA) System.
3.	S19.8.2.3	Per GEH response to item #26 [MFN 15-069], has been updated to include wetwell spray and spent fuel pool makeup in the ACIWA description.
4.	T19.8-2	Per GEH response to item #26 [MFN 15-069], table updated to include wetwell spray and spent fuel pool to ACWIA.
5.	T19.8-7	Per GEH response to item #26 [MFN 15-069], firewater addition system at injection location updated. Added the injection locations of Wetwell and SFP.
6.	T19.8-7	Per [MFN 16-001, Revision 1], updated the COPS Disk Diameter and COPS rupture disk and COPS pipe diameter.
7.	S19.9.7	Per GEH response to item #26 [MFN 15-069], 1 st paragraph has been amended to include spent fuel pool makeup.
8.	S19.9.7	Per GEH response to item #26 [MFN 15-069], updated section to require applicant to develop procedures to address all modes of operation of the ACIWA system.
9.	S19E.2.3.5	Per [MFN 16-001, Revision 1], changed various analytical parameters due to a reanalysis of the ABWR suppression pool response due to operation of the redesigned COPS.
10.	S19E.2.3.5.1.2	Per [MFN 16-001, Revision 1], The following equations were corrected for typographical errors: 19E.2-41a, 19E.2-41d, update ρ_{g0} , 19E.2-41e and δP_0 was updated.
11.	S19E.2.3.5.1.3	Per [MFN 16-001, Revision 1], updated the area ratio from 0.132 to 0.207 and the diameter ratio from 0.364 to 0.455. Also updated gas velocity and mach number.
12.	S19E.2.3.5.1.4	Per [MFN 16-001, Revision 1], equation 19E.2-4f was clarified.
13.	S19E.2.6.10	Per [MFN 16-001, Revision 1], changed the COPS steam flow equivalent from 2.4% to 2.3%.
14.	S19E.2.6.11	Editorial change to update symbol that was erroneously changed in Revision 5 generation.

Item	Location	Description of Change
15.	S19E.2.8.1	Per [MFN 16-001, Revision 1], changed the two COPS rupture disks from 200A (8inch) to 250A (10 inch) and the COPS pipeline size from 250A (10 inch) to 350A (14 inch).
16.	S19E.2.8.1.3	Per [MFN 16-001, Revision 1], changed the COPS rupture disc size, steam system flow rate and system energy release parameters to reflect the new COPS design.
17.	F19E.2-25	Per [MFN 16-001, Revision 1], updated the COPS rupture disk diameter to 25 cm and the pipe/valve diameter to 35 cm.
18.	F19E.2-26a, b, c, and d	Figures updated to correct conversion errors and return DCD Revision 5 figures back to DCD Revision 4.
19.	S19EA.2.1.6	Editorial change to update symbol that was erroneously changed in Revision 5 generation.
20.	S19EE.2.3	Editorial change to update symbol that was erroneously changed in Revision 5 generation.
21.	S19EE.3.1	Editorial change to update symbol that was erroneously changed in Revision 5 generation.
22.	S19G.1	Per GEH response to RAIs 19-1, 19-2, 19-3, 19-4 and 19-5 [MFN 14-063], added specific NRC regulatory guidance (RG 1.217) and updated NEI 07-13 from Revision 7 to Revision 8.
23.	S19G.3	Per GEH response to RAIs 19-1, 19-2, 19-3, 19-4 and 19-5 [MFN 14-063], updated NEI 07-13 from Revision 7 to 8.
24.	S19G.4.2, Item (3)	Per GEH response to RAIs 19-1, 19-2, 19-3, 19-4 and 19-5 [MFN 14-063], updated NEI 07-13 from Revision 7 to 8.
25.	S19G.4	Per GEH response to RAI 19-8, [MFN 15-053], adding additional information to (3) and delete and replace “reactor well shield plugs” with “reactor cavity shield blocks” and added reference to Figure 3H.1-23.
26.	S19G.4.2, Item (5)	Per GEH response to RAIs 19-1, 19-2, 19-3, 19-4 and 19-5 [MFN 14-063], added phrase, “by protecting them from physical damage, fire damage and smoke effects.”
27.	S19G.4.2, Item (8)	Per GEH response to RAIs 19-1, 19-2, 19-3, 19-4 and 19-5 [MFN 14-063], added new Item (8): The seismic gap between the Reactor Building and Control Building described in DCD Section 3.8.5.1 is a key design feature in protecting the Control Building from shock effects from strikes on the Reactor Building.

Item	Location	Description of Change
28.	S19G.4.3 & 4.4	Per GEH response to RAIs 19-1, 19-2, 19-3, 19-4 and 19-5 [MFN 14-063], updated design requirements Fire Barrier and Fire Protection Features section to add additional fire barriers. This update is in various locations thru-out this section 4.3 and 4.4.
29.	S19G.4.4	Per GEH response to RAIs 19-1, 19-2, 19-3, 19-4 and 19-5 [MFN 14-063], updated to include the administrative control and to eliminate reference to the standpipes installed to meet 10 CFR 50.54(hh) as they are no longer required to maintain core cooling.
30.	S19G.5	Per GEH response to RAIs 19-1, 19-2, 19-3, 19-4 and 19-5 [MFN 14-063], updated NEI 07-13 from Revision 7 to 8.
31.	S19G.5	Per GEH response to RAI 1-8 [MFN 15-053], added additional information concerning aircraft impact.
32.	S19G.6	Per GEH response to RAIs 19-1, 19-2, 19-3, 19-4 and 19-5 [MFN 14-063], updated Reference 19.7-1, NEI 07-13, from Revision 7 to 8. Also added new Reference 19.7-2, Regulatory Guide 1.217.
33.	T19QB-6	Editorial change to update symbol that was erroneously changed from Revision 4 to Revision 5, needs to be revised back to match Revision 4 of the ABWR DCD.

ABWR DCD Chapter 20
25A5674BA Rev 6 Change List

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 5 to Revision 6.
2.	RAI 251.8	Editorial correction on page 20.2-32.
3.	RAI 435.18	Editorial correction on page 20.2-86.
4.	RAI 435.50	Editorial correction on page 20.2-98.
5.	RAI 440.109 thru 440.16	RAIs moved from pages 20.2-165 thru 20.2-167 to place the RAIS in numerical order on pages 20.2-162 thru 20.2-164.
6.	725.24	Editorial correction on page 20.2-198.
7.	F20.3.4-5a and F20.3.4.5b	Figure titles clarified to include sheet number on page 20.3-161.

ABWR DCD Chapter 21
25A5675BB Volume 1 - Rev 6 Change List

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 5 to Revision 6.
2.	F1.2-11	Per GEH response to item #20 [MFN-15-065], updated to show removal of new fuel storage vault.
3.	F1.2-12	Per GEH response to item #20 [MFN-15-065], updated to show removal of new fuel storage vault.
4.	F1.2-25	Per GEH response to RAI 12.02-2 [MFN 15-003] figure updated to show CST position.
5.	F3H.1-23	Per GEH response to RAI 19-8 [MFN 15-053], new figure added "Reactor Building Reactor Cavity Shield Blocks."
6.	F5.1-3	Per GEH response to item #10 [MFN 15-051], changes were made to Figure 5.1-3 to show the new vent line modification to the Main Steam and RWCU Head Spray piping.

25A5675BC Volume 2 - Rev 6 Change List

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 5 to Revision 6.
2.	F5.4-10 Sheets 5 & 7	Per GEH response to item #26 [MFN 15-069], Figure 5.4-10 Residual Heat Removal System P&ID (sheet 5 of 7) has been updated to show the new AC independent water addition piping, valves, and connects for Loop B and Figure 5.4-10 (sheet 7 of 7) has been updated to show the naming changes for ACIWA valves and instruments for Loop C.
3.	F5.4-12	Per GEH response to item #10 [MFN 15-051], modified to show new RWCU head spray vent line.
4.	F6.2-39 Sheet 1	Per GEH response to item #26 [MFN 16-001], updated ABWR Containment Overpressure Protection System (COPS) to reflect the increase in pipe diameter.

25A5675BD Volume 3 - Rev 6 Change List

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 5 to Revision 6.

25A5675BE Volume 4 - Rev 6 Change List

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 5 to Revision 6.

25A5675BF Volume 5 - Rev 6 Change List

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 5 to Revision 6.

25A5675BG Volume 6 - Rev 6 Change List

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 5 to Revision 6.

25A5675BH Volume 7 - Rev 6 Change List

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 5 to Revision 6.
2.	F8.3-1 Sheet 1	Per GEH response to RAI 08.02-1 [MFN 14-056], Figure 8.3-1 modified to show the addition of Bus H with H1, H2, and H3 breakers from the second winding of the RT to the Division I, II, and III buses..
3.	F8.3-1 Sheet 3	Per GEH response to item #26 [MFN 15-069], added to figure 8.31 sheet 3 FLEX diesel generator tie-in points.
4.	F9.1-1 Sheet 1	Per GEH response to RAI 01.05-01 [MFN 14-071], revised to show two new safety-related wide range SFP level.
5.	F9.1-1 Sheet 2	Revised for clarity. No technical changes.
6.	F9.1-1 Sheet 3	Revised for clarity. No technical changes.
7.	F9.4-4 Sheet 1	Revised for clarity. No technical changes.
8.	F9.4-4 Sheet 2	Revised for clarity. No technical changes.
9.	F9.4-4 Sheet 3	Revised for clarity. No technical changes.
10.	F9A.4-1	Per GEH response to RAI 19-5 [MFN 14-063], Figure 9A.4-1 was modified to identify all wall segments and floor segments that are credited as 3-hour, 5-psid fire barriers.
11.	F9A.4-2	Per GEH response to RAI 19-5 [MFN 14-063 Supplement 3], Figure 9A.4-2 was modified to identify all wall segments and floor segments that are credited as 3-hour, 5-psid fire barriers.
12.	F9A.4-3	Per GEH response to RAI 19-5 [MFN 14-063 Supplement 3], Figure 9A.4-3 was modified to identify all wall segments and floor segments that are credited as 3-hour, 5-psid fire barriers and other drawing revisions.
13.	F9A.4-4	Per GEH response to RAI 19-5 [MFN 14-063 Supplement 3], Figure 9A.4-4 was modified to identify all wall segments and floor segments that are credited as 3-hour, 5-psid fire barriers and other drawing revisions.
14.	F9A.4-5	Per GEH response to RAI 19-5 [MFN 14-063 Supplement 3], Figure 9A.4-5 was modified to identify all wall segments and floor segments that are credited as 3-hour, 5-psid fire barriers and other drawing revisions.

Item	Location	Description of Change
15.	F9A.4-6	Per GEH response to RAI 19-5 [MFN 14-063 Supplement 3], Figure 9A.4-6 was modified to identify all wall segments and floor segments that are credited as 3-hour, 5-psid fire barriers and other drawing revisions
16.	F9A.4-7	Per GEH response to RAI 19-5 [MFN 14-063] and items #18, 19 and 20 [MFN 15-065], Figure 9A.4-7 was modified to identify all wall segments and floor segments that are credited as 3-hour, 5-psid fire barriers and to remove the new fuel storage vault.
17.	F9A.4-8	Per GEH responses to RAI 19-5 [MFN 14-063] and items #18, 19 and 20 [MFN 15-065], Figure 9A.4-8 was modified to identify all wall segments and floor segments that are credited as 3-hour, 5-psid fire barriers and to remove the new fuel storage vault.

25A5675BJ Volume 8 - Rev 6 Change List

Item	Location	Description of Change
1.	Entire Chapter	Global chapter editorial change to change the revision number from Revision 5 to Revision 6.
2.	F12.3-8	Per GEH response to items #18, 19 and 20 [MFN 15-065], revised Figure 12.3-8 to show removal of new fuel storage vault.
3.	F12.3-9	Per GEH response to items #18, 19 and 20 [MFN 15-065], revised Figure 12.3-9 to show removal of new fuel storage vault.
4.	F12.3-19	Per GEH response to items #18, 19 and 20 [MFN 15-065], revised Figure 12.3-19 to show removal of new fuel storage vault.
5.	F12.3-20	Per GEH response to items #18, 19 and 20 [MFN 15-065], revised Figure 12.3-20 to show removal of new fuel storage vault.
6.	F12.3-50	Per GEH response to RAI 12.02-2 [MFN 15-003], revised Figure 12.3-50 to show CST location and the corresponding radiation zone.
7.	F12.3-61	Per GEH response to items #18, 19 and 20 [MFN 15-065], revised Figure 12.3-61 to show removal of new fuel storage vault.
8.	F12.3-62	Per GEH response to items #18, 19 and 20 [MFN 15-065], revised Figure 12.3-62 to show removal of new fuel storage vault.
9.	F12.3-70	Per GEH response to RAI 12.02-2 [MFN 15-003], revised Figure 12.3-70 to show the CST location.

Enclosure 2

MFN 16-002

CD - ABWR DCD Revision 6, Tier 1 and Tier 2

Security-Related Information Notice

Enclosure 2 contains Security-Related Information identified by the designation

“{{{Security-Related 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.