

March 23, 2017

MEMORANDUM TO: Joseph E. Donoghue, Branch Chief
Licensing Branch 3
Division of New Reactor Licensing
Office of New Reactors

FROM: Adrian Muñiz, Project Manager **/RAI/**
Licensing Branch 3
Division of New Reactor Licensing
Office of New Reactors

SUBJECT: SUMMARY OF TELECONFERENCE TO DISCUSS OPEN ITEMS
ASSOCIATED WITH THE REVIEW OF THE ADVANCED BOILING-
WATER REACTOR CERTIFICATION RENEWAL

During a public teleconference held on March 2, 2017, GE Hitachi (GEH) discussed slides (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17060A476) associated with proposed Advanced Boiling-Water Reactor (ABWR) design control document (DCD) changes made to Section 3.3.1.2 provided in their response to Request for Additional Information (RAI) 02-1. GEH also discussed proposed clarifying changes to their RAI response. Based on the ABWR DCD and GEH's slides, the staff identified the following:

1. The velocity pressure equation provided in Tier 2, Section 3.3.1.2, "Determination of Applied Forces," in GEH ABWR, Revision 6, is consistent with the velocity pressure equation provided in Tier 2, Section 3.3.1.2 in GEH ABWR, Revision 4 and Eq. 3 in Section 6.5 of American Society of Civil Engineers (ASCE) 7-88, "Minimum Design Loads for Buildings and Other Structures".
2. In accordance with ASCE 7-88, the design wind velocity used in the velocity pressure equation in DCD Tier 2, Section 3.3.1.2 is assumed to be the **fastest-mile wind speed**. However, the new maximum hurricane wind speed site parameter value added to DCD Tier 1, Table 5.0 and Tier 2, Table 2.0-1 is defined as the nominal **3-second gust wind speed** measured at 10 m above ground over open terrain, which is consistent with the wind speed values presented in Regulatory Guide (RG) 1.221.

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The NRC staff provided feedback to GEH as summarized below.

Staff Feedback:

1. The staff accepted the ASCE 7-88 equation in GEH ABWR, Revision 4 as part of the review of the ABWR design certification.
2. GEH should proceed with the proposal to delete the phrase “which is consistent with that of ASCE/SEI 7-05” from the first sentence in DCD Tier 2, Section 3.3.1.2.
3. GEH should include, in addition to the reported values in DCD Tier 1, Table 5.0, and Tier 2, Table 2.0-1, the 3-second gust site parameter values for the **severe wind speed**. These tables should identify each reported value as either a 3-second gust wind speed or fastest-mile wind speed. In addition, the DCD sections where the velocity pressure equations are discussed should clearly identify the appropriate site parameter values that have been used (i.e., 3-second gust wind speed or fastest-mile wind speed).
 - a. GEH should confirm that the current severe wind speed site parameter values are fastest mile values, which is what ASCE 7-88 is based on. Standard Review Plan 2.3.1 (Rev. 3, March 2007) states combined license (COL) applicants should derive their 100-year return period site characteristic values from ASCE 7-05 which reports these values as 3-second gust wind speed values. As an example, the South Texas Project COL applicant converted the ABWR fastest-mile severe wind speed site parameter value to a 3-second gust wind speed value for comparison with their severe wind speed site characteristic value which was derived from ASCE 7-05. GEH should also discuss how the fastest mile wind speed values compare to 3-second gust wind speed values for the speeds of concern (~110-120 mph).
4. GEH should include, in addition to the reported values in DCD Tier 1, Table 5.0, and Tier 2, Table 2.0-1, the 3-second gust site parameter value for the **extreme wind maximum tornado wind speed**. These tables should identify each reported value as either a 3-second gust wind speed or fastest-1/4 mile wind speed.
 - a. GEH should confirm that the current extreme wind maximum tornado wind speed site parameter value is a fastest ¼ mile wind speed value (the original Fujita tornado damage scale was based on the fastest ¼ mile wind speed value). Note that the wind speed values presented in Revision 1 to RG 1.76 are 3-second gust wind speed values. GEH should also discuss how the fastest ¼ mile wind speed values compare to 3-second gust wind speed values for the speeds of concern (~300 mph).

Docket No.: 52-045

Enclosure:
As stated

cc w/encl.: See next page

SUBJECT: SUMMARY OF TELECONFERENCE TO DISCUSS OPEN ITEMS ASSOCIATED WITH THE REVIEW OF THE ADVANCED BOILING WATER REACTOR CERTIFICATION RENEWAL

Dated: March 17, 2017

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DATE	03/23/2017	03/23/2017	03/23/2017

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March 2, 2017**

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Enclosure

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