

2.0 Site Characteristics

2.6.8 Requirements for Determination of ABWR Site Acceptability

ABWR DCD Tier 2, Section 2.2 provides site parameters, which are requirements for site acceptability that COL applicants who reference the ABWR design must demonstrate are met. These site parameters cover both the evaluation of the radiological consequences of design basis accidents (DBAs) for the siting and safety assessment, and the assessment of the radiological dose impacts of severe accidents. Section 2.2.1 of the ABWR DCD provides information related to DBAs, while Section 2.2.2 provides information needed to perform severe accident consequence assessment. Section 2.3.3 provides the related COL information items.

2.6.8.1 Regulatory Criteria

The proposed change to the ABWR DCD does not alter the site parameters, but modifies the Section 2.2.2 discussion of how the COL applicant is to demonstrate that the severe accident site parameters are met. Specifically, instead of specifying use of the Calculation of Reactor Accident Consequences, Version 2, (CRAC 2) computer code, the revised text provides flexibility for the COL applicant to use a more modern severe accident consequence computer code, and also precludes the need for a COL applicant referencing the ABWR renewal DCD to take a departure from the ABWR DCD to use a different computer code. Since the change is to provide flexibility, it is an “amendment,” as this term is defined in Chapter 1 of this supplement, and is evaluated using the regulations in effect at renewal. The following regulatory requirements provide the basis for the acceptance criteria for the staff’s review:

- 10 CFR 52.47(a)(1) requires site parameters postulated for the design, and an analysis and evaluation of the design in terms of those site parameters.

2.6.8.2 Summary of Technical Information

GEH did not make any changes to DCD Section 2.2.1. GEH proposed changes to address Item 3 of the NRC letter dated July 20, 2012 (ADAMS Accession No. ML12125A385), which suggested that the applicant consider removing references in Tier 2, Chapter 2 of the ABWR DCD directing COL applicants to use the CRAC 2 computer code (ref. NUREG/CR-2326) which is no longer in general use and replace with generalized direction to use an appropriate severe accident consequences code, such as the MELCOR Accident Consequence Code System (MACCS2). GEH proposed changes to ABWR DCD Tier 2 (ADAMS Accession No. ML15170A039), Sections 2.2.2 and 2.3.3 to remove such references to the CRAC 2 severe accident consequences code and replace them with a generalized reference to severe accident consequence codes or more specifically to MACCS2 as an example. Information on the ABWR design data to be used in severe accident consequence assessment provided in DCD Table 2.2-2 and tables in Appendix 2A were retained in CRAC 2 data input format as an example, as noted in the revised text to paragraph three of DCD Tier 2, Section 2.2.2. GEH also made a conforming change to DCD Tier 2, Table 1.9.1 to revise the name of COL Information Item 2.42 to read “Severe

Accident Consequence Computer Code Calculations.” These proposed changes were incorporated in Revision 6 of the ABWR DCD.

2.6.8.3 Technical Evaluation

The proposed changes to ABWR DCD Tier 2, Table 1.9.1 and Sections 2.2.2 and 2.3.3 remove certain references to a severe accident consequence computer code which is not currently in use by NRC staff or reactor licensees and applicants. The CRAC 2 code is an NRC-developed severe accident consequence computer code which was previously used for environmental assessment and reactor safety studies. Since that time, the NRC has developed the MACCS code for reactor severe accident environmental assessments and reactor safety studies, and is the only consequence code that the NRC staff uses for these assessments. MACCS is also used by power reactor licensees and applicants. Because 10 CFR 52.47(a)(1) does not require that the DC specify the method that the COL applicant must use in determining site characteristics, the staff finds that the use in an ABWR COL application of an appropriate severe accident consequence computer code other than CRAC 2 is acceptable. In addition, if a COL applicant uses a code other than the MACCS2 code as identified in the ABWR renewal DCD, the staff will assess the use of such other code against the review standards in effect at the time of the COL application, as appropriate. The proposed changes to the ABWR DCD described above do not revise any accident analyses previously reviewed and found acceptable by the staff and do not affect any previous staff findings of reasonable assurance of adequate protection of public health and safety related to the ABWR design. The changes to the information regarding severe accident consequence assessment in the ABWR DCD prevent the need for a COL applicant to justify a departure from the DCD information in order to use a state of the art severe accident consequence code. Therefore, the staff finds acceptable the proposed changes to DCD Tier 2, Table 1.9.1, COL Information Item 2.42, and Sections 2.2.2 and 2.2.3.

2.6.8.4 Conclusion

Based on the staff’s review discussed above, the staff finds that the proposed changes to ABWR DCD Tier 2 that provide information for COL applicants related to the use of severe accident consequence computer codes comply with 10 CFR 52.47(a)(1) and are acceptable.