

Issue Resolution Strategy

Title of Issue	Lead	Current Date	Anticipated Closure Date
GEH ABWR DCD Tables 12.2-3b and 12.2-3c Material Errors	Ed Stutzcage	1/4/12	TBD
<p>Issue Description:</p> <p>During the review of the South Texas Project 3 and 4 Combined License (COL) application, the staff discovered errors in ABWR DCD Table 12.2-3b “Gamma Ray Source Energy Spectra – Post Operation Gamma Sources in the Core” and Table 12.2-3c “Gamma Ray Source Energy Spectra – Gamma Ray Sources External to the Core During Operation.” The source terms in both of these tables is approximately a million times lower than comparable source term tables in currently operating BWRs and in the comparable ESBWR Design Certification (DC) application. Staff noted that the text in ABWR DCD Sections 12.2.1.2.1.1.4 and 12.2.1.2.8 associated with the aforementioned tables contain different units than the units provided in the tables (For example, Table 12.2-3b uses units of pJ/W.s, but Section 12.2.1.2.1.1.4 provides the gamma ray energy spectrum in J/s/W.).</p> <p>Tables 12.2-3b and 12.2-3c should be revised, and the correct units used in the tables and the associated text. The applicant should provide calculations justifying the corrected values in the tables and identify any other areas of the DCD that are impacted by the errors.</p>			
<p>Safety Concern:</p> <p>The tables could be used with incorrect values for facility design, equipment qualification, or operating procedures, which may result in underestimating needed radiation shielding and resulting in increased exposure rates.</p>			
<p>Regulatory Basis:</p> <ul style="list-style-type: none"> • 10 CFR 20.1101 “Radiation Protection Programs”, paragraph (b), states that “The licensee shall use, to the extent practical, procedures and engineering controls based upon sound radiation protection principles to achieve occupational doses and doses to members of the public that are as low as is reasonably achievable (ALARA).” • 10 CFR 20.1201 “Occupational dose limits for adults”, requires that the total effective dose equivalent does not exceed 5 Rem in a year. • 10 CFR 50.9 “Completeness and accuracy of Information”, requires that information provided to the Commission by the applicant for a license or by a licensee or information required by statute or by the Commission’s regulations, orders, or license conditions to be maintained by the applicant or the licensee shall be complete and accurate in all material respects. • 10 CFR 52.59(b)(2), states that the Commission may impose other requirements on a renewal applicant, if it determines that, they are necessary for compliance with the commissions regulations and orders applicable and in effect at the time the design certification was issued. All of the above regulations were in effect at the time of original ABWR certification. 			

- 10 CFR 52.6 “Completeness and Accuracy of Information”, requires that each applicant for a standard design approval provides information that is complete and accurate in all material respects.

The ABWR DCD contains erroneous source term data, and as such, requires each COL to provide revised information to meet the reasonable assurance standard of 10 CFR Part 52.

Staff Position:

The core source term data in all parts of Tables 12.2-3b and 12.2-3c should be updated with accurate information. All text in Chapter 12 should be updated to be consistent with the units shown in the corrected tables. Also, the applicant should identify and correct any other areas of the DCD that are impacted by the unit errors in the tables.

Applicant Position:

The current GEH Renewal DCD includes incorrect units for Tables 12.2-3b and 12.2-3c as described above. The applicant position is not known at this time. As a result, anticipated closure date above is TBD.

Impact of Staff Position on Applicant (Technical, Cost, Schedule):

The applicant should have already completed these source term calculations as part of their original ABWR DCD application. They should be able to use their original calculations to correct the unit errors in the tables. If this is the case, the applicant would only have to update Section 12.2 of the DCD with corrected information, and verify that the errors did not impact other areas of the DCD.

If the original calculations are not retrievable or if there is a latent error in the original calculations, the applicant will have to recalculate, and perform further analysis.

Plan to Close Issue (What, Who, When):

Request that the applicant correct the above mentioned tables and text and provide staff with the additional information requested, to demonstrate compliance with the regulations, or establish a new COL Information Item.

Decision:

The staff met with the division director who determined that the staff position was valid.

Basis:

The basis is the same as in the regulatory basis section discussed above.