

Supplemental RAI Regarding RAI's:
2.4.1-2 (2.4-2 in NRC ESBWR database), 2.4-26 thru 2.4-30, 15.3-4, and 15.3-5
ESBWR DCD Rev. 3
May 21, 2007

In DCD Tier 2 Rev. 3, Chapter 2, the applicant states that SRP Section 2.4.13 does not apply to a ESBWR due to its mitigation capabilities. This is not in conformance with staff guidance in the SRP Section 11.2 and BTP 11-6. The applicant needs to add a COL action item for evaluating the effects of an accidental release of radioactive liquid waste on surface and ground water, as is necessary to address SRP Section 2.4.13 for a future site suitability assessment. In addition, the applicant needs to provide in the DCD the source term from the single tank (per assumptions BTP 11-6, March 2007*) that would be used by the COL applicant for a future site evaluation to address SRP 2.4.13. This is the postulated inventory to be used for site safety assessments.

The applicant needs to revise DCD Section 15.3.16 in response to RAIs 15.3-4 and 15.3-5 to clarify that sealing of concrete walls cannot be relied upon to contain the release of all of the liquid radwaste in the compartment, since the SRP Section 11.2 and BTP 11-6 preclude this. According to BTP 11-6, the applicant needs to provide additional details on "special design features" to support their statement and update the radiological assessment accordingly. These are features beyond those discussed in RG 1.143. As is stated in DCD Rev. 3, Section 15.3.16, the approach relies on the use of "a sealant" or "sealed concrete walls" as the mitigating feature of the design. However, BTP-11-6 states that "credit for liquid retention by unlined building foundations will not be given regardless of the building seismic category because of the potential for cracks. Credit is not allowed for retention by coatings or leakage barriers outside the building foundation."

Accordingly, the applicant is requested to update the basis and assumptions used in the analysis presented in DCD Tier 2, Rev. 3, Section 15.3.16 to be consistent with the SRP guidance in BTP 11-6; and discuss why the release of the postulated inventory of radioactive materials to surface or ground water is not limiting in the analysis as compared to the current case where the volatile airborne fraction of radioactivity (as radioiodines) is assumed to be released in the environment; and update the text and tables in DCD Rev. 3, Sections 15.3.16 and 2.4.13, and Table 2.0-2 of DCD Rev. 3, Section 2.0.

* BTP 11-6 is now part of updated SRP Section 11.2 (March 2007), which was previously located in SRP Section 15.7.3.