2.3 Tier 2 Departures from DCD Requiring Prior NRC Approval

The following Tier 2 departure requires prior NRC approval under Section VIII.B.5 of 10 CFR 52 Appendix A.

STD DEP 3B-2, Revised Pool Swell Analysis

Description

This departure updates the hydrodynamic loads analysis to incorporate a new analysis method for pool swell compared to the method described in the DCD. It is necessary to revise the pool swell analysis to address the effects of the changes to the containment pressure response for LOCA events as described in STD DEP 6.2-2. The COL applicant no longer has access to the analytical codes described in DCD Section 3B Reference 14, and an alternate method is used to perform the revised pool swell analysis. This alternate method utilizes a calculation approach that is similar to the DCD approach; however, it uses some different assumptions and different analytical software for implementation of the analysis. This change affects Tier 2 Appendix 3B Subsections 3B.4.2.1 ~~and~~, 3B.7, and Table 6.2-8.

Evaluation Summary

This change does not affect Tier 1, Tier 2*, or operational requirements. This Tier 2 departure is a change from a method of evaluation, as defined in 10 CFR 52 Appendix A Section II.G(2). This alternate method has not been previously approved by the NRC and therefore, per Appendix A Section VIII.B.5.b(8), such a Tier 2 change requires prior NRC approval.

This departure and the required amendment to the application is justified as follows:

(1) This departure will not result in a significant decrease in the level of safety otherwise provided by the design. The departure involves use of an alternate method of evaluation of pool swell. The alternate method is demonstrated to produce similar results to the method described and used in the DCD, by comparing the alternate method results using the DCD inputs to the DCD analysis results. The departure does not change the ABWR design as described in the ABWR DCD. The use of this alternate method to assess the pool swell results for the changes in the containment pressure response provides accurate results that are used as input for the wetwell internals design, and assures that these components will be adequately designed for the appropriate loads. Therefore, the use of the alternate method does not adversely affect the design and thus does not create a condition that would significantly decrease the level of safety otherwise provided by the design.

(2) The departure is necessary to have an approved method to evaluate pool swell loads. The method described in the DCD is no longer available to the COL applicant, and the containment pressure results, which are input for the pool swell analysis, have changed due to the updated analysis as described

in STD DEP 6.2-2. As such, this departure is needed to update the DCD and ultimately will contribute to standardization, as this COL application is the R-COLA and will be the basis for S-COLA submittals.