

## Followup RAI Questions Regarding ESBWR DCD Chapter 10

The staff has determined that supplementary information is required to complete its review of ESBWR design control document (DCD) Tier 2, Section 10.3. Please provide supplementary RAI responses for the following RAIs by August 31, 2007:

Reference: GE response Letter MFN 06-219, Supplement 2 , dated May 18, 2007, which addressed NRC RAI Letter No. 36, dated June 22, 2006.

### RAI 10.3-4 S02:

- (a) DCD Tier 2, Section 10.3.6, Revision 3 does not list weld filler metal specifications and classifications, and the applicant did not provide this information in its responses to RAIs 10.3-4 and 10.3-4 S01. In order for the staff to complete its review and evaluate the applicant's compliance with 10 CFR 50.55a and General Design Criterion 1, the applicant must provide the staff with a list of the weld filler material specifications and classifications used in Class 2 Main Steam (MS) and Feedwater (FW) systems.
- (b) In a teleconference between the staff and GE on June 7, 2007, to discuss the applicant's response to RAI 10.3-4 S01, the staff informed GE that its reference to fracture toughness requirements in Section 10.3.6 must include all Class 2 MS and FW piping and components. Revision 3 of DCD Tier 2, Section 10.3.6 lists fracture toughness for the TMSS but not the Class 2 FW system. In order for the staff to complete its review, the staff requests that the applicant modify the DCD to include the fracture toughness requirements for all ASME Code Class 2 piping and components in the MS and FW systems.
- (c) In response to RAI 10.3-4 S01, the applicant indicated that low alloy steel will be used in the Class 2 portion of the FW system. Accordingly, the staff requests that the applicant modify the DCD to indicate if the ESBWR design follows NRC guidance provided in Regulatory Guide (RG) 1.50. The staff notes that the applicant provided a description of its alternative to RG 1.50 for RCPB and ESF materials in responses to RAI 5.2-44 (GE Letter MFN 06-260, August 7, 2006 (ML062260103)) and RAI 6.1-4 (GE Letter MFN 06-365, October 4, 2006 (ML062890039)).

In order for the staff to complete its review of the DCD, the staff requests that the applicant modify the DCD to include any alternatives to RG 1.50 as it applies to all Class 1, 2, and 3 piping and components. In addition, the staff requests that the applicant modify the DCD to include its response to RAI 6.1-4, in which it states that the ASME Boiler and Pressure Vessel (B&PV) Code, Section III, Appendix D, Article D-1000, minimum preheat recommendations will be applied to all ASME Code, Section III, Class 1, 2, and 3 carbon steel and low alloy steel components in the ESBWR design. The two aforementioned requested DCD modifications should be included in DCD Subsections 5.2.3, 6.1.1 and 10.3.6. Alternatively, the applicant could modify one of the Subsections and provide references in the remaining two sections which provide a pointer to the Subsection that contains the information.

RAI 10.3-6 S02:

In RAI 10.3-6 Supplement 1, the staff requested that the applicant provide the material specifications and grades for all main steam, feedwater and condensate system piping (ASME Code Class and non-Code piping). In the applicant's response (MFN 06-219 Supplement 2) dated May 18, 2007, GE stated that SRP Section 10.4.7 indicates that the evaluation of feedwater materials is performed under SRP Section 10.3.6. The applicant further stated that because SRP Section 10.3.6 only applies to ASME Code Section III Class 2 and 3 piping, non-ASME Code, Section III, Code Class 1, 2, 3 feedwater piping is not addressed in the DCD.

During a teleconference between the NRC staff and GE on June 7, 2007, GE indicated that the design of non-ASME Code Section III systems is not yet complete. In order for the staff to determine the ESBWR's conformance with General Design Criteria 4, the staff requests that the applicant modify the DCD to include a COL Applicant Action Item to include materials specifications and grades for non-ASME Code Section III main steam, feedwater and condensate piping and components that could potentially be susceptible to FAC and discuss a basis for the materials that have been selected.