

Followup RAI question regarding ESBWR DCD Chapter 9

The staff has determined that supplementary information is required to complete its review of ESBWR design control document (DCD) Tier 2, Section 9.1. Please provide a supplementary RAI response for the following question:

Reference: GE response to RAI letter 54 MFN -06-309 dated September 8, 2006

9.1-2 and 9.1-25

The response is not adequate. The information of COL Holder items will be available for review only after the license is issued. This is not acceptable because the staff will not be able to conclude whether the safe load paths, routing plans, and administrative controls satisfy the regulatory requirements at the time when the license is issued. The staff has determined that the referenced COL Holder item should be revised to a COL applicant item.

9.1-3

Response is insufficient to conclude that measures have been taken to provide adequate cooling for high density racks. Provide information such as assembly dimensions, center-to-center distance, array layouts and location within the pool to facilitate NRC review.

In addition, there is no basis for concluding that the adequate cooling will be provided since neither the size of the pool nor the required cooling capacities are known. This information should be provided in the DCD to complete the review.

9.1-4

Response is acceptable; however, this information should be included in the DCD.

9.1-9

Response is insufficient. Provide a description of controls that will be used to ensure the required volume of water will be maintained at all times.

9.1-10

The response to RAI 9.1-10 is insufficient to determine the acceptability of FAPCS C/C as related to GDC 44. The applicant did not provide specific performance requirements (heat transfer capacity and flow rate) nor described a method for calculating the required cooling capacity. Provide the performance requirements as requested.

9.1-11

The response is acceptable; however the DCD should be revised to reflect that the makeup header will not be submerged below the surface of the pool.

9.1-12

The response is not consistent with the response to RAI 9.1-16. The fire pump enclosure must also be tornado protected as required by GDC 2; a seismic II enclosure with standard sheet metal frame is not appropriate for this purpose. Provide a seismic I enclosure or an adequate alternative.

In addition, the commitments made in response to RAI 9.1-12 have not been incorporated in Tier 1 nor Tier 2 of Rev 03. (Table 2.16.3-1 and Table 3.2-1, respectively). A revised Rev 02 version of Table 3.2-1 was included in the RAI response, but not reflected in Rev 03.

9.1-15

The response is insufficient. Provide analyses demonstrating that the pool liner will retain its leak-tight integrity after impact by a dropped fuel assembly, describe an alternate method of assuring an adequate pool inventory will be maintained following a fuel handling accident, or provide redundant safety-related makeup capability.

9.1-16

This response is acceptable but is inconsistent with the response to RAI 9.1-12. The fire pump enclosures must also be designed to provide tornado protection. A standard insulated sheet-metal frame building is not adequate for this purpose. Clarify inconsistency.

9.1-17

Revise the DCD to include this information.

9.1-18

The response is insufficient. Provide a description of the SFP water level instrumentation including its location relative to the top of the fuel. Describe how will the operators respond to the alarm during an accident.

9.1-19

The response is insufficient to meet 10 CFR 52.47 which requires the application to include performance requirements and design information sufficiently detailed to permit the preparation of acceptance and inspection requirements by the NRC, and procurement specifications and construction and installation specifications by an applicant. Provide a NPSH analysis, as requested.

9.1-20

The response is insufficient. The Chapter 19 PRA credits the FAPCS in performing certain functions (e.g., low pressure injection and suppression pool cooling). Provide the basis for concluding that successful actuation of the assumed number of FACPS trains is adequate to satisfy the PRA success criterion for the respective coolant injection and heat removal functions.

9.1-21

This RAI question is still open pending response to RAI 6.3-79.