From: Chandu Patel
To: john.leatherman@ge.com
Date: 06/13/2007 1:06:46 PM
Subject: Supplemental RAI for ESBWR Chapter 3.9

John,

We have identified a few additional items that need supplemental information. These items are from section 3.9 of the ESBWR. I will appreciate if you could provide a schedule for responding to these items. Please let me know if you have any questions.

Thanks
Chandu

CC: AEC; james.kinsey@ge.com; Kathy K. (GE Infra Energy) Sedney; Mark Hartzman; Richard McNally; Thomas Scarbrough

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Supplemental RAI for ESBWR Section 3.9

1. Comment on response to RAI 3.9-152 (MFN 06-489):

   The applicant is requested to specify the safe-shutdown conditions for the ESBWR and identify the associated safety-related systems that are used for shutting down the reactor and maintaining the reactor in a stable safe shutdown condition.

2. Comment on response to RAI 3.9-154 (MFN 06-489):

   The applicant is requested to specify in the ESBWR DCD that the COL applicant shall include in its inservice testing (IST) program plan the acceptance criteria and the bases for assessing degradation and the performance characteristics of pumps, valves, and dynamic restraints in the IST program; and to describe the diagnostic equipment and techniques to be used in the IST program.

3. Comment on response to RAI 3.9-158 (MFN 06-489):

   The applicant is requested to describe how the test results will identify the flow required to open the valve and maintain the disc in a stable full open position; and the nonintrusive techniques and acceptance criteria (if different from that used for biased-open check valves) used to periodically assess degradation and the performance of check valves.

4. Comment on response to RAI 3.9-159 (MFN 06-489):

   The applicant is requested to address the staff position that, because final designs for new reactors are not complete, systems can be designed to allow Code-required quarterly testing; and the basis for not designing the ESBWR to accommodate quarterly testing for each component within the scope of the IST program.

5. Comment on response to RAI 3.9-160 (MFN 06-489):

   The applicant is requested to specify the acceptance criteria for the design and qualification of the gravity driven cooling system squib valves.

6. Comment on response to RAI 3.9-175 (MFN 07-086):

   The applicant is requested to specify the appropriate cross reference for functional design and qualification of dynamic restraints in DCD Tier 2, Section 3.9.6.

7. Comment on response to RAI 3.2-19 S01 (MFN 06-308, Supplement 1):

   GE's response to RAI 3.2-19 S01 identified that there is a second normally closed valve that is in series with and upstream of the orifice in the bypass line that is not reflected in the simplified schematic in DCD Figure 3.2-1, but does appear on the detailed Nuclear Boiler System P&ID. This normally closed valve is important to the classification and should be shown on the simplified diagram. The applicant is requested to submit a revised DCD Figure 3.2-1 to show this normally closed valve in the main steam drains.

8. Comment on response to RAI 3.9-14 (MFN 07-225):

   a. Regarding the response dated April 18, 2007, provide a description of the method, based on hand calculations, that is used to evaluate the stresses obtained from ANSYS for determining if ASME Section III, Appendix F, limits have been met.

   b. Regarding the response dated April 18, 2007, provide clarification of the

statement, "*only Elastic Analysis as defined in ASME Code Section III, Appendix F, F1321.3 requirements is designed within this computer program when used to evaluate the stresses for determining if ASME Code Section III, Appendix F, limits were met*," when referring to the programs ASHD2, FEMFL, ABAQUS.

c. DCD Tier 2, Section 3.9.1.4, "Considerations for the Evaluation of Faulted Conditions," lists systems and components, such as Fine Motion Control Rod Drive (FMCRD), Hydraulic Control Unit, Reactor Pressure Vessel (RPV) Assembly, Core Support Structures and Other Safety Related Reactor Internal Components, RPV Stabilizer and FMCRD and In-Core Housing Restraints (Supports), Main Steam Isolation Valve, Safety/Relief Valve and Other ASME Class 1 Valves, Fuel Storage and Refueling Equipment, Fuel Assembly (Including Channel), ASME Class 2 and 3 Vessels, ASME Class 2 and 3 Pumps, ASME Class 2 and 3 Valves, and ASME Class 1, 2 and 3 Piping. For each of these systems and components, provide the computer program that was used to evaluate the Service Level D stresses for determining that the ASME Code Section III, Appendix F, limits were met.