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MFN 07-211  
Supplement 1

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Subject: **Response to Portion of NRC Request for Additional Information  
Letter No. 77 Related to ESBWR Design Certification Application -  
Technical Specifications - RAI Number 16.2-96 S01**

Enclosure 1 contains the subject supplemental RAI response resulting from a June 15, 2007 e-mail from the NRC. GE's original response was provided in the Reference 1 letter.

If you have any questions or require additional information regarding the information provided here, please contact me.

Sincerely,



James C. Kinsey  
Project Manager, ESBWR Licensing

*DOB*

*NRC*

References:

1. MFN 07-211, Letter from Jim Kinsey to U.S. Nuclear Regulatory Commission, *Response to Portion of NRC Request for Additional Information Letter No. 77 Related to ESBWR Design Certification Application - Technical Specifications - RAI Numbers 16.2-95 and 16.2-96*, April 19, 2007

Enclosures:

1. MFN 07-211, Supplement 1 - Response to Portion of NRC Request for Additional Information Letter No. 77 Related to ESBWR Design Certification Application - Technical Specifications - RAI Number 16.2-96 S01

cc: AE Cabbage USNRC (with enclosures)  
DH Hinds GEH (with enclosures)  
RE Brown GEH (w/o enclosures)  
eDRF 0062-8193/1

**Enclosure 1**

**MFN 07-211, Supplement 1**

**Response to Portion of NRC Request for**

**Additional Information Letter No. 77**

**Related to ESBWR Design Certification Application**

**- Technical Specifications -**

**RAI Number 16.2-96 S01**

**NRC RAI 16.2-96**

*TS 3.5.2, GDCS - Operating, Surveillance Requirements: DCD Tier 2, Revision 1, Table 6.3-3 lists GDCS components which require surveillance testing. Add the check valves, flushing of injection line, venturi within GDC-RPV injection nozzles and deluge line flushing items from this table to the TS 3.5.2 SR or explain why such a SR is not proposed.*

**GE Response**

Tier 2, Design Control Document (DCD) 6.3.2.7.4, "Testing and Inspection Requirements," describes testing requirements for the Gravity-Driven Cooling System (GDCS). These requirements reference DCD Table 6.3-3, which requires: 1) functional testing of GDCS check valves, 2) explosive testing for GDCS squib valve initiators, 3) flushing of GDCS injection lines to remove possible plugging, 4) flushing of the GDCS injection nozzles, and 5) flushing of the deluge lines.

Items 1 and 2, functional testing of GDCS check valves and explosive testing for GDCS squib valve initiators, are not explicit Technical Specification (TS) Surveillance Requirements (SRs) because these components are subject to the requirements of 10 CFR 50.55a, Codes and Standards. 10 CFR 50.55a requires that these valves be subject to an Inservice Testing (IST) Program, which must be implemented in accordance with the latest approved version of "ASME/ANSI, Operations and Maintenance Standards, Part 10 (OM-10), "Inservice Testing of Valves in Light-Water Reactor Power Plants." Tier 2, DCD 3.9.6.1 and Table 3.9-8, Inservice Testing, provide details for implementation of the Inservice Testing Program for the GDCS squib valves and check valves. The IST Program ensures that GDCS squib and check valves are subject to testing that encompasses the requirements described in DCD Table 6.3-3. As stated in DCD 3.9.9.3, preparation and submittal to the NRC staff of the IST Program is the responsibility of the combined operating license (COL) applicant.

Items 3 and 4, flushing of GDCS injection lines and injection nozzles to remove possible plugging, are addressed in the response to RAI 16.2-95, which addresses requirements for periodic verification that the GDCS injection lines are not obstructed. Requirements for system flushing, unless used explicitly for removing obstructions that could interfere with system performance, are cleanliness controls. Cleanliness controls are not TS SRs because they are not required for verification of system operability. Cleanliness controls are required by 10 CFR 50, Appendix B, and are implemented in accordance with Regulatory Guide 1.39, "Housekeeping Requirements for Water-Cooled Nuclear Power Plants." The cleanliness programs, which are developed by the COL applicant, are intended to prevent the introduction and ensure the removal of debris that could prevent systems from performing their safety function.

Item 5, flushing of the deluge lines, is not included as a TS SR because, as explained in the response to RAI 16.0-1 (General Electric Letter MFN 06-263, dated August 8, 2006), the GDCS deluge subsystem did not meet the criteria for inclusion in the Technical Specifications. Requirements for the GDCS deluge subsystem are included in programs controlled by the COL applicant.

GE will revise the title of DCD Table 6.3-3 to "Table 6.3-3 Inservice Testing and Maintenance" to eliminate the description of these requirements as surveillance testing.

**DCD Impact**

DCD Tier 2, Table 6.3-3, GDCS Surveillance Testing, will be revised in Revision 4 as described above.

**NRC RAI 16.2-96, Supplement 1**

*GE states (MFN 07-211, Page 4 of 5) that "Requirements for the GDCS deluge subsystem are included in programs controlled by the COL applicant". This should be included in the DCD Tier 2, Section 6.3.6, as an action item for the COL applicant.*

**GEH Response**

The GDCS deluge subsystem is addressed in the "Availability Controls Manual (ACM)," which is an Appendix to Design Control Document (DCD), Tier 2, Chapter 19. The ACM includes Availability Control (AC) 3.5.1, "Gravity-Driven Cooling System (GDCS) Deluge Function," which will include a surveillance requirement (SR) for verification every 10 years that the GDCS deluge lines are not obstructed. The inclusion of this SR will ensure that the GDCS deluge subsystem is subject to requirements equivalent to those established for the GDCS injection and equalizing subsystems as described in the responses to RAI 16.2-95 and RAI 16.2-96 (GE Letter MFN 07-211, dated April 19, 2007). This change will eliminate the need for a COL applicant action item to address this issue.

**DCD Impact**

AC 3.5.1, "Gravity-Driven Cooling System (GDCS) Deluge Function," in DCD, Tier 2, Chapter 19, will be revised to include the following:

SURVEILLANCE		FREQUENCY
ACSR 3.5.1.4	<p>-----</p> <p style="text-align: center;"><b>- NOTE -</b></p> <p>Squib valve actuation may be excluded.</p> <p>-----</p> <p>Verify the flow path for each GDCS deluge line is not obstructed.</p>	10 years