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MFN 06-127, Supplement 1

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Subject: Response to Portion of NRC Request for Additional Information Letter Number 18 Related to ESBWR Design Certification Application – Mechanical Systems and Components – RAI Numbers 3.9-1 S01 and 3.9-1 S02

The purpose of this letter is to submit the GE Hitachi Nuclear Energy (GEH) response to the U.S. Nuclear Regulatory Commission (NRC) Request for Additional Information (RAI) originally transmitted via the Reference 1 letter and supplemented by an NRC request for clarification in References 2 and 3. The GEH response to RAI Numbers 3.9-1 S01 and 3.9-1 S02 are addressed in Enclosure 1.

If you have any questions or require additional information, please contact me.

Sincerely,

James C. Kinsey
Vice President, ESBWR Licensing

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KRO

References:

1. MFN 06-113, Letter from U.S. Nuclear Regulatory Commission to Mr. David H. Hinds, Manager, ESBWR, General Electric Company, *Request For Additional Information Letter No. 18 Related To ESBWR Design Certification Application*, dated April 24, 2006
2. E-Mail from Lawrence Rossbach, U.S. Nuclear Regulatory Commission, to David Hinds, GE, dated September 12, 2006 (ADAMS Accession Number ML070740641).
3. E-Mail from Chandu Patel, U.S. Nuclear Regulatory Commission, to John Leatherman, GE, dated June 21, 2007 (ADAMS Accession Number ML073050299).

Enclosure:

1. Response to Portion of NRC Request for Additional Information Letter Number 18 Related to ESBWR Design Certification Application – Mechanical Systems and Components – RAI Numbers 3.9-1 S01 and 3.9-1 S02.

cc: AE Cubbage USNRC (with enclosure)
DH Hinds GEH/Wilmington (with enclosure)
GB Stramback GEH/San Jose (with enclosure)
RE Brown GEH/Wilmington (with enclosure)
eDRF 0000-0076-5369

Enclosure 1

MFN 06-127, Supplement 1

Response to Portion of NRC Request for

Additional Information Letter No. 18

Related to ESBWR Design Certification Application

Mechanical Systems and Components

RAI Numbers 3.9-1 S01 and 3.9-1 S02

For historical purposes, the original text of RAI 3.9-1 and the GEH response is included, except for any attachments or DCD mark-ups.

NRC RAI 3.9-1

During the pre-application phase of the ESBWR review, GE stated that full-size testing of the DPV and the VB were conducted to demonstrate the operation and reliability of these valves. However, the technical evaluation of the design and the testing programs for the DPV and VB were not part of the ESBWR pre-application review scope. Provide additional information regarding the design and testing of DPV and VB.

GE Response

The testing of the DPV and VB valves were conducted during the development of the SBWR in the 1990 time frame, and information was submitted during that time period for NRC review. The design of these valves remains the same for ESBWR except that the quantity of valves has increased to accommodate the larger plant size. The following is a listing of correspondence and reports from that time period:

DPV Testing – Enclosure 2

- MFN 136-95, "SBWR – Response to Request for Additional Information (RAI) Regarding the Simplified Boiling Water Reactor (SBWR) Design (Q900.102 – Q900.181)," 7/28/95
- GE Report GEFR-00879, "Depressurization Valve Development Test Program Final Report," October 1990 – to be provided under separate cover.

VB Testing – Enclosure 3

- MFN 065-94, "NRC Requests for Additional Information (RAI) on the Simplified Boiling Water Reactor (SBWR) Design," 5/2/94
- MFN 113-94, "Responses to the Referenced letters," 9/26/94
- MFN 155-94, "NRC Requests for Additional Information (RAIs) on the Simplified Boiling Water Reactor (SBWR) Design," 12/15/94 – non proprietary attachments
 - UTE I/EA Doc. No. 02-ST5-0002-1, "SBWR Study Vacuum Breaker FMCA"
 - ED45833, "SBWR Vacuum Breaker Prototype Experimental Qualification General Test Procedure"
 - ED45834, "SBWR Vacuum Breaker Prototype Experimental Qualification FIAT CIEI Test Procedure"
 - ED45894, "SBWR Vacuum Breaker Prototype Experimental Qualification Thermal Ageing Procedure"
- MFN 021-95, "Request for Exemption of the SBWR Drywell to Wetwell Vacuum Breaker from Single Failure Criteria," 2/16/95

- MFN 018-95, "Approach to Achieve Closure of Items Related to the GE SBWR TAPD," 2/14/95
- MFN 216-95, "SBWR – Vacuum Breaker Single Failure Exemption," 11/7/95
- MFN 021-96, "Vacuum Breaker Test Program," 2/14/96
- MFN 035-96, "SBWR – Closure of the Vacuum Breaker Test Program," 3/12/96
- NEDO-32391, Revision A., "SBWR Test and Analysis program Description," September 1994

VB Testing – Enclosure 4 (Contains GE Proprietary Information)

MFN 155-94, "NRC Requests for Additional Information (RAIs) on the Simplified Boiling Water Reactor (SBWR) Design," 12/15/94

Proprietary Contents:

- "RAI Number 900.62"
- ED45841, "SBWR Vacuum Breaker Prototype Experimental Qualification General Test Notification Plan"
- ED45933, "SBWR Vacuum Breaker Prototype Experimental Qualification Campaign – Technical Note"
- Inspection Certificates
- QPLVBR00001, "Vacuum Breaker Valve Design Basis Accident Simulation Quality Plan"
- TCE.MIL.G.1002, "Drywell to Wetwell Vacuum Breaker Dynamic Qualification Quality Control Plan"
- ED45913, "SBWR Vacuum Breaker Prototype Experimental Qualification General Test Report"
- ED45914, "SBWR Vacuum Breaker Prototype Experimental Qualification FIAT CIEI/COMPES Test Report"
- ED45921, "SBWR Vacuum Breaker Prototype Experimental Qualification HATU-ICO Test Report"
- ED45915, "SBWR Vacuum Breaker Prototype Experimental Qualification Ferioli E Gianotti Test Report"

NRC RAI 3.9-1 S01

MFN 06-127 dated 6/16/06 responded to RAI 3.9-1 but the response said that part of the answer, GE Report GEFR-00879, was being reformatted and would be provided separately. When can we expect to receive this report?

GEH Response

Due to the involvement of other parties in DPV development, a copy of GEFR-00879 is available in the GEH Washington office for viewing.

DCD Impact

No DCD changes will be made in response to this RAI.

NRC RAI 3.9-1 S02

MFN 06-127 provided most of the response to RAI 3.9-1 but it didn't include GE Report GEFR-00879, "Depressurization Valve Development Test Program Final Report" October 1990. MFN 06-127 said GEFR-00879 was being reformatted and would be submitted separately. The NRC staff requested GE for this report by e-mail on January 4, 2007, (ML070740642). Please provide the schedule for submitting this report?

In addition, discuss the size of the prototypes in relation to the production valves, the replacement procedure in that the thermal aging testing is justified for 6 years, and the actions to be taken for the production valves.

GEH Response

Due to the involvement of other parties in DPV development, a copy of GEFR-00879 is available in the GEH Washington office for viewing.

The prototypes are full size in relation to the production valves. Revision 4 to DCD Tier 2, Section 5.4.13 now includes additional information regarding the Depressurization Valves including a Detailed Description and Testing and Inspection Requirements.

DCD Impact

No additional changes to the DCD are required as a result of this RAI response.