

GE-Hitachi Nuclear Energy Americas LLC

**James C. Kinsey**  
Project Manager, ESBWR Licensing

PO Box 780 M/C A-55  
Wilmington, NC 28402-0780  
USA

T 910 675 5057  
F 910 362 5057  
jim.kinsey@ge.com

MFN 07-194  
Supplement 2

Docket No. 52-010

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U.S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, D.C. 20555-0001

Subject: **Response to Portion of NRC Request for Additional Information  
Letter No. 67 – Mechanical Systems and Components– RAI Number  
3.9-135 S01**

Enclosure 1 contains GEH's response to the subject NRC RAI transmitted via Reference 1 which is a supplemental request to the RAI transmitted via Reference 2. The original RAI response was submitted to the NRC via Reference 3.

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

DO68  
NRO

Reference:

1. E-mail dated May 10, 2007 from C. Patel (NRC).
2. MFN 06-302, Letter from U.S. Nuclear Regulatory Commission to David H. Hinds, *Request for Additional Information Letter No. 67 Related to the ESBWR Design Certification Application*, October 12, 2006.
3. MFN 07-194 – Letter from GE to U.S. Nuclear Regulatory Commission, *Response to Portion of NRC Request for Additional Information Letter No. 67 Related to ESBWR Design Certification Application – Mechanical Systems and Components*, April 2, 2007.

Enclosure:

1. MFN 07-194, Supplement 2- Response to Portion of NRC Request for Additional Information Letter No. 67 – RAI Number 3.9-135 S01.

cc: AE Cabbage USNRC (with enclosure)  
BE Brown GEH/Wilmington (with enclosure)  
LE Fennern GEH/San Jose (with enclosure)  
GB Stramback GEH/San Jose (with enclosure)  
eDRF: 0000-0064-2708 R1

**Enclosure 1**

**MFN 07-194  
Supplement 2**

**Response to Portion of NRC Request for  
Additional Information Letter No. 67  
Related to ESBWR Design Certification Application**

**Mechanical Systems and Components**

**RAI Number 3.9-135 S01**

**For historical purposes, the original text of RAI 3.9-135 and the GE response is included.**

**NRC RAI 3.9-135:**

*GE is requested to describe in detail (1) the source of the load definition of the ESBWR steam dryer, (2) the validation of the methodology used in developing the load definition, (3) the stress analysis performed using the load definition, (4) the error and uncertainties associated with the each aspect of the analysis, (5) the application of the error and uncertainties in the stress analysis, (6) the stress analysis results and comparison to acceptance criteria, and (7) the plans to confirm the steam dryer load definition and stress analysis using actual steam dryer data during plant operation.*

**GE Response:**

The ESBWR steam dryer evaluations are discussed in Section 3L.4 of DCD Tier 2, Appendix 3L. Three additional references (3L-5, 3L-6, and 3L-7) will be added in Section 3L.6 as part of RAI 3.9-58 response for additional information.

Detailed discussion of the source of the load definition and validation of the load definition methodology will be included in Reference 3L-5: General Electric Company, "Steam Dryer – Acoustic Load Definition," NEDC-33312P, Class III (Proprietary), and NEDO-33312, Class I (Non-Proprietary).

The steam dryer stress analysis and comparison to acceptance criteria will be included in Reference 3L-6: General Electric Company, "Steam Dryer – Structural Evaluation," NEDC-33313P, Class III (Proprietary), and NEDO-33313, Class I (Non-Proprietary).

Details regarding the configuration of the steam dryer load definition and stress analysis during initial power ascension will be included in Reference 3L-7: General Electric Company, "Steam Dryer – Instrumentation and Power Ascension Monitoring," NEDC-33314P, Class III (Proprietary), and NEDO-33314, Class I (Non-Proprietary).

Each of these references will also address uncertainties associated with that aspect of the overall steam dryer evaluation. The summation of the individual uncertainties and application to the overall evaluation will also be addressed in Reference 3L-7.

**DCD Impact:**

No impact on DCD Tier 2 Section 3L as a result of RAI 3.9-135 response. References added as part of RAI 3.9-58 response in DCD Tier 2, Subsection 3L.6 are also applicable to RAI 3.9-135.

*E-mail dated May 10, 2007, from C. Patel (NRC).*

**NRC RAI 3.9-135 S01:**

*In its response to RAI 3.9-135, the applicant refers to the following three additional documents that are yet to be submitted:*

*Reference 3L 5: General Electric Company, "Steam Dryer – Acoustic Load Definition," NEDC-33312P, Class III (Proprietary)*

*Reference 3L 6: General Electric Company, "Steam Dryer – Structural Evaluation," NEDC-33313P, Class III (Proprietary)*

*Reference 3L 7: General Electric Company, "Steam Dryer – Instrumentation and Power Ascension Monitoring," NEDC-33314P, Class III (Proprietary)*

*The applicant is requested to submit these documents so that its response to RAI 3.9-135 can be evaluated.*

**GEH Response:**

Please refer to MFN 07-265, "Updated Integrated Plan and Schedule – ESBWR Design Certification Application," dated June 1, 2007, for the anticipated submittal dates for the Licensing Topical Reports referenced above.

**DCD Impact**

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