



HITACHI

GE Hitachi Nuclear Energy

Richard E. Kingston
Vice President, ESBWR Licensing

P.O. Box 780
3901 Castle Hayne Road, M/C A-55
Wilmington, NC 28402 USA

T 910.819.6192
F 910.362.6192
rick.kingston@ge.com

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Subject: Response to Portion of NRC RAI Letter No. 220 Related to ESBWR Design Certification Application - DCD Tier 2 Section 3.9 – Mechanical Systems and Components; RAI Number 3.9-244

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) letter number 220 sent by NRC letter dated July 29, 2008 (Reference 1). RAI Number 3.9-244 is addressed in Enclosure 1.

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

Sincerely,

Richard E. Kingston
Vice President, ESBWR Licensing

DO68
NRC

Reference:

1. MFN 08-609 Letter from U.S. Nuclear Regulatory Commission to Robert E. Brown, GEH, *Request For Additional Information Letter No. 220 Related to NEDE-33312P, "ESBWR Steam Dryer Acoustic Load Definition," NEDE-33313P, "Steam Dryer Structural Evaluation," NEDC-33408P, "ESBWR Steam Dryer-Plant Based Load Evaluation Methodology," NEDE-33259P, "Reactor Internals Flow Induced Vibration Program," and ESBWR Design Control Document, Revision 5, dated July 29, 2008*

Enclosure:

1. Response to Portion of NRC RAI Letter No. 220 Related to ESBWR Design Certification Application - DCD Tier 2 Section 3.9 – Mechanical Systems and Components; RAI Number 3.9-244

cc: AE Cabbage
RE Brown
DH Hinds
eDRF

USNRC (with enclosures)
GEH/Wilmington (with enclosures)
GEH/Wilmington (with enclosures)
0000-0092-7709 (RAI 3.9-244)

Enclosure 1

MFN 08-842

Response to Portion of NRC Request for

Additional Information Letter No. 220

Related to ESBWR Design Certification Application

Mechanical Systems and Components

RAI Numbers 3.9-244

NRC RAI 3.9-244

The last sentence of NEDE-33313P, Section 4.0 states, "The steam dryer is not an ASME Code component, but shall comply to the applicable requirements of ASME Code Subsection NG, to the extent possible." This statement is not acceptable as a basis for design certification, because it is vague, open to various interpretations, and does not specifically identify the design criteria that have been applied to the construction of the component. Clarification should be provided which would define the specific ASME Code requirements or Articles (e.g., Article NG-3000, Design) which have been selected as the design basis and acceptance criteria for construction of the steam dryer. The clarification discussion should be included in a revision to NEDE-33313P, Section 4.0.

GEH Response

NEDE-33313P only pertains to the structural evaluation of the ESBWR steam dryer, and the statement in Section 4.0 was only intended to apply to the design article of ASME Subsection NG. NEDE-33313P will be revised to specifically identify NG-3000 and to identify that there is an exception to the weld quality and fatigue factors as explained in subsections 4.1 and 7.1 of the LTR.

The ESBWR steam dryer has no safety function and therefore is classified as a nonsafety-related item. The ESBWR steam dryer assembly is classified as an "internal structure" per the ASME Boiler and Pressure Code, Section III, Subsection NG, Article NG-1122. Article NG-1122 requires application of Subsection NG to internal structures such as the steam dryer only if specifically stipulated by the Certificate Holder. In the case of the ESBWR, only Article NG-3000 of Subsection NG is applied to the steam dryer (with the exceptions noted above). With regard to material, welding, inspection, and fabrication requirements applicable to the steam dryer, see Section 4.5.2 of the DCD.

DCD Impact

No change will be made to the DCD.

LTR NEDE-33313P section 4.0 will be revised as shown in the attached markup.

Proposed Revision to LTR 33313P

4.0 DESIGN CRITERIA

The steam dryer, including the dryer units, is a non-safety related item and is classified as an Internal Structure per Reference 3, as defined in Reference 4, Subsection NG, Paragraph NG-1122. The steam dryer is not an ASME Code component, but the design shall comply to the applicable requirements of ASME Code Subsection NG-3000 except for the weld quality and fatigue factors as discussed in Subsections 4.1 and 7.4 to the extent possible.