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MFN 07-531

Docket No. 52-010

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U.S. Nuclear Regulatory Commission
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**Subject: Response to Portion of NRC Request for Additional Information
Letter No. 100 Related to ESBWR Design Certification Application –
Technical Support Center – RAI Number 13.3-8**

Enclosure 1 contains GEH's response to the subject NRC RAI transmitted via 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
Vice President, ESBWR Licensing

DAGB
KRO

Reference:

1. MFN 07-327, Letter from U.S. Nuclear Regulatory Commission to Robert E. Brown, *Request for Additional Information Letter No. 100 Related to ESBWR Design Certification Application*, May 30, 2007

Enclosure:

1. MFN 07-531 – Response to Portion of NRC Request for Additional Information Letter No. 100 Related to ESBWR Design Certification Application – Technical Support Center – RAI Number 13.3-8

cc: AE Cabbage USNRC (with enclosures)
DH Hinds GEH (with enclosures)
RE Brown GEH (w/o enclosures)
GB Stramback GEH (with enclosures)
eDRF 0000-0075-0627

ENCLOSURE 1

MFN 07-531

Response to Portion of NRC Request for

Additional Information Letter No. 100

Related to ESBWR Design Certification Application

Technical Support Center – RAI Number 13.3-8

NRC RAI 13.3-8

Guidance for the technical support center (TSC) structure from NUREG-0696, Section 2.5, calls for the TSC complex to be able to withstand the most adverse conditions reasonably expected during the design life of the plant including adequate capabilities for earthquakes, high winds (other than tornadoes), and floods. Winds and floods with a 100-year-recurrence frequency are acceptable as a design basis. The applicant states that the TSC for the ESBWR is housed in the Electrical Building (EB) at grade elevation and is shown on DCD Tier 2, Revision 3, Figure 1.2-26. The EB is constructed of reinforced concrete and is classified as nonsafety-related and Seismic Category NS. The applicant has not addressed the structural characteristics of the EB with regard to winds and floods with a 100-year-recurrence frequency.

GEH Response

DCD Tier 2 Table 2.0-1, Rev. 4, "Envelope of ESBWR Standard Plant Site Parameters" shows the following design basis for the ESBWR Standard Plant:

Extreme Wind: 100 year wind speed (3-sec. gust)	67.1 m/s (150 mph)
Maximum Flood (or Tsunami) level:	0.3 m (1 ft) below plant grade

The maximum flood level meets the guidelines of RG 1.59 with regard to the methods utilized for establishing the probable maximum flood (PMF) per DCD Tier 2 Subsections 3.4.1 and 19A.8.3, rev. 4.

The Electrical Building (EB) houses the two standby diesel generators, associated supporting systems and equipment (considered as RTNSS per DCD Section 19A.8), and the Technical support Center. The EB is designed to the same augmented design criteria as RTNSS for which the structure shall withstand winds and missiles generated from Category 5 hurricanes as stated in DCD Section 19A.8.3, rev. 4.

The Electrical Building is qualified for the adverse conditions identified in this RAI as follows:

1. The maximum wind speed (3-sec. gust) used for the design of the EB is 87.2 m/sec (195 mph) for a Category 5 hurricane. This exceeds the Standard Plant Site Parameter, 100-year wind speed (3-sec. gust) of 67.1 m/s (150 mph).
2. The EB ground floor El. 4650 mm (15.3 ft) is the plant grade, which is 0.3 m (1 ft) above the maximum flood level. The finished ground level adjacent to EB is at El. 4500 mm (14.8 ft) that is 160 mm (6.3 in) above the maximum flood level. Therefore, no dynamic forces due to flood, or external flood protection are considered, and only the hydrostatic pressure against the basemat is factored in the design.
3. The EB is qualified to the requirements of International Code Council/International Building Code -2003 (ICC/IBC) for seismic design of RTNSS structure.

DCD Impact

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