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U.S. Nuclear Regulatory Commission
Document Control Desk
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Subject: **Response to RAI Letter 130 Related to the ESBWR Design
Certification – Radiation Protection – RAI Number 12.4-34**

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) sent by NRC letter dated December 27, 2007. GEH response to RAI Number 12.4-34 is addressed in Enclosure 1.

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

Sincerely,

James C. Kinsey
Vice President, ESBWR Licensing

DOGE
NRO

Reference:

1. MFN 07-715, Letter from U.S. Nuclear Regulatory Commission to Robert E. Brown, GEH, *Request For Additional Information Letter No. 130 Related To ESBWR Design Certification Application*, dated December 27, 2007.

Enclosure:

1. Response to Portion of NRC Request for Additional Information Letter No. 130 Related to ESBWR Design Certification Application – Radiation Protection – RAI Number 12.4-34

cc: AE Cubbage USNRC (with enclosure)
GB Stramback GEH/San Jose (with enclosure)
RE Brown GEH/Wilmington (with enclosure)
eDRF 0000-0083-1084

Enclosure 1

MFN 08-278

**Response to Portion of NRC Request for
Additional Information Letter No. 130
Related to ESBWR Design Certification Application**

Radiation Protection

RAI Number 12.4-34

NRC RAI 12.4-34:

In DCD Tier 2, Revision 4, Tables 12.3-2 and 12.3-5, describe what is meant by the footnotes which state that some of the listed area radiation monitors utilize auxiliary units.

GEH Response:

The reference to auxiliary unit in Tables 12.3-2 and 12.3-5 footnotes refers to the auxiliary units described in the detailed description of the ARMs in Subsection 12.3.4.1. The following is an excerpt from DCD Subsection 12.3.4.1 where the auxiliary unit description is located:

12.3.4.1 ARM System Description

Every ARM channel consists of a gamma sensitive detector and a digital area radiation processor; all channels are provided with local visual and audible alarms and local readouts. Where appropriate, additional readouts and alarms, provided by local **auxiliary units**, will be utilized. The output signals from the detectors are digitized and multiplexed for transmission to digital radiation monitors for measurement and display. Also, the radiation signals are transmitted to the process computer for recording. Each radiation monitoring channel has two adjustable trip alarm circuits, one for high radiation and the other for downscale indication (loss of sensor input). Also, each area radiation monitor has a built-in self test capability that checks for gross failures and activates an alarm on power failure or inoperative monitor. **Auxiliary units** with local audible alarms are provided in selected local areas to provide for immediate warning in order to minimize occupational exposure. Each area radiation monitor is powered from non-1E vital 120 VAC power source, which is continuously available during loss of off-site power.

DCD Impact:

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