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MFN 06-394
Supplement 1

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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. 47 Related to ESBWR Design Certification Application –
Conduct of Operations – RAI Number 13.3-5 S01**

Enclosure 1 contains GEH's response to the subject NRC RAI transmitted via e-mail on May 29, 2007. GEH's original response was provided in 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
Project Manager, ESBWR Licensing

D068
NRC

Reference:

1. MFN 06-394, Letter from David Hinds to U.S. Nuclear Regulatory Commission, *Response to NRC Request for Additional Information Letter No. 47 Related to ESBWR Design Certification Application – Conduct of Operations – RAI Numbers 13.3-1 through 13.3-6*, October 20, 2006

Enclosure:

1. MFN 06-394, Supplement 1 – Response to Portion of NRC Request for Additional Information Letter No. 47 Related to ESBWR Design Certification Application – Conduct of Operations – RAI Number 13.3-5 S01

cc: AE Cubbage USNRC (with enclosures)
DH Hinds GEH (with enclosures)
RE Brown GEH (w/o enclosures)
GB Stramback GEH (with enclosures)
eDRF 0000-0073-9486

Enclosure 1

MFN 06-394

Supplement 1

Response to Portion of NRC Request for

Additional Information Letter No. 47

Related to ESBWR Design Certification Application

Conduct of Operations – RAI Number 13.3-5 S01

For historical purposes, the original text of RAI 13.3-5 and the GE response is included.

NRC RAI 13.3-5

Guidance for TSC ventilation is found in NUREG-0696, Section 2.6. Please provide more detail as to the level of radiological protection provided by the TSC ventilation system.

GE Response

The HVAC subsystem for the Technical Support Center (TSC) is described in Subsection 9.4.7.1 and 9.4.7.2 and depicted in Figure 9.4-12. Each of the 100% capacity redundant HVAC trains is provided with a 100% capacity filter train consisting of HEPA and charcoal filtration to provide radiological protection to the occupants of the TSC. The TSC HVAC Air Intake Radiation Monitoring Subsystem (RMS) is described in Subsection 11.5.3.2.13 and its' range of channel measurement and display are given in Tables 11.5-1 and 11.5-2. The TSC HVAC subsystem automatically transfers from its normal operation mode to its radiological mode upon detection of radioactivity at the outside air intakes to limit the introduction of airborne radiation into the TSC. As stated in Section 13.3, the radiation exposure to any person working in the TSC will not exceed 0.05 Sv (5 rem TDE) for the duration of the accident. This defines the level of radiological protection that the detailed system and components will be designed to meet.

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

NRC RAI 13.3-5 S01

In response to RAI 13.3-1, the applicant indicated that technical support center (TSC) Communication Room 5189, is outside the TSC, but communication personnel are part of the TSC staff size. How are TSC communication personnel included in the level of radiological protection described in response to RAI 13.3-5.

GEH Response

The Communications Room 5189 located in the Electrical Building, is across the hallway corridor adjacent to the Technical Support Center, see Figure 1.2-26, Electrical Building Plan at Elevation 4650. The nonsafety-related Electrical Building HVAC System (EBVS) provides service to the Electrical Building and consists of the Electric and Electronic Rooms (EER) HVAC Subsystems (EERVS), the Technical Support Center (TSC) HVAC Subsystem (TSCVS), and the Diesel Generators (DG) HVAC Subsystem (DGVS).

As discussed in subsection 9.4.7 Electrical Building HVAC System, the ESBWR design complies with the requirements of NUREG-0696, which requires the TSC to supply the same level of radiological protection as that supplied to the Main Control Room (MCR) under GDC 19. However, the TSC is not specifically committed to providing safety-related environment in full compliance with GDC 19 that defines the Control Room habitability acceptance criteria. The TSCVS detects and limits the introduction of airborne hazardous materials (radioactivity or smoke) into the TSC. The TSCVS filter units are defense-in-depth components and provide the function of filtration for the TSC during conditions of abnormal airborne radioactivity when power is available. The TSCVS automatically transfer from its normal operation mode to its radiological mode upon detection of radioactivity at the outside air intakes.

The Communications Room 5189 is outside the TSC and is serviced by the EERVS. The EERVS provides conditioned air to maintain acceptable temperatures for equipment and personnel, but does not provide the same level of radiological protection as the TSCVS. However, personnel that occupy the Communication Room 5189, will do so for only a brief period of time when the TSC is activated. Otherwise personnel in the Communications Room 5189 will normally occupy the TSC. If at any time the director of the TSC facility considers it to be uninhabitable due to loss of communications or other reason, the functions of the TSC will be transferred to the Emergency Offsite Facility (EOF).

DCD Impact

There is no change required to the DCD.