



HITACHI

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MFN 07-592, 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. 103 Related to ESBWR Design
Certification Application - Heating, Ventilation, and Air
Conditioning - RAI Number 9.4-38**

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 July 23, 2007, Reference 1. GEH response to RAI Number 9.4-38 addressed in Enclosure 1.

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

Sincerely,

James C. Kinsey
Vice President, ESBWR Licensing

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Reference:

1. MFN 07-414, Letter from U.S. Nuclear Regulatory Commission to Robert E. Brown, Senior Vice President, Regulatory Affairs, *Request For Additional Information Letter No. 103 Related To ESBWR Design Certification Application*, dated July 23, 2007

Enclosure:

1. Response to Portion of NRC Request for Additional Information Letter No. 103 Related to ESBWR Design Certification Application - Heating, Ventilation, and Air Conditioning - RAI Number 9.4-38

cc: AE Cubbage USNRC (with enclosure)
GB Stramback GEH/San Jose (with enclosure)
RE Brown GEH/Wilmington (with enclosure)
eDRF 0000-0076-2814

ENCLOSURE 1

MFN 07-592, Supplement 1

Partial Response to RAI Letter No 103 Related to ESBWR

Design Certification Application

Heating, Ventilation, and Air Conditioning Systems

RAI Number 9.4-38

NRC RAI 9.4-38

Spent fuel pool cooling relies on pool boiling as an emergency cooling method. Is there any impact on the fuel building ventilation system as a result of pool boiling? Would releases during pool boiling mandate routing the fuel building ventilation system to the Reactor Building HVAC Purge Exhaust Filter Unit for clean up?

GEH Response

The Fuel Building HVAC System (FBVS) consists of two subsystems: Fuel Building General Area HVAC Subsystem (FBGAVS) and Fuel Building Fuel Pool Area HVAC Subsystem (FBFPVS). Both subsystems have the capability to be manually diverted to the Reactor Building HVAC Purge Exhaust Filter Unit in case of high radiation conditions. In both subsystems, the exhaust fans discharge the air to the outside atmosphere through the vent stack. The exhaust air is monitored for radioactivity. If pool boiling occurs, the ventilation subsystems continue to run as designed with no impact.

The FBVS (including its two subsystems) is nonsafety-related except for the isolation dampers and ducting penetrating the Fuel Building boundary. The Fuel Building boundary is automatically isolated (and FBVS fans shutdown with no impact) in the event of a fuel handling accident, other radiological accidents or loss of control signal, power, or instrument air. However, as stated in DCD Tier 2 Subsection 9.4.2.3, the FBVS is not required to operate during Station Blackout. Therefore the system (including the RB Purge Exhaust Filter Unit) has no functions during an accident other than the Fuel Building boundary isolation function. After an event, use of the Reactor Building purge filter unit (charcoal filter trains) can be employed to clean up the Fuel Building.

DCD Impact

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