



GE Energy

James C. Kinsey
Project Manager, ESBWR Licensing

PO Box 780 M/C J-70
Wilmington, NC 28402-0780
USA

T 910 675 5057
F 910 362 5057
jim.kinsey@ge.com

MFN 07-188

Docket No. 52-010

March 27, 2007

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555-0001

Subject: **Response to Portion of NRC Request for Additional Information
Letter No. 77 Related to ESBWR Design Certification Application –
Tier 1 – RAI Number 14.3-92**

Enclosure 1 contains GE'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,

A handwritten signature in cursive script that reads "Kathy Sedney for".

James C. Kinsey
Project Manager, ESBWR Licensing

D068

Reference:

1. MFN 06-391, Letter from U.S. Nuclear Regulatory Commission to David Hinds, *Request for Additional Information Letter No. 77 Related to ESBWR Design Certification Application*, October 11, 2006

Enclosure:

1. MFN 07-188 – Response to Portion of NRC Request for Additional Information Letter No. 77 Related to ESBWR Design Certification Application – Tier 1 – RAI Number 14.3-92

cc: AE Cubbage USNRC (with enclosures)
DH Hinds GE (with enclosures)
RE Brown GE (w/o enclosures)
eDRF 0000-0062-6401

Enclosure 1

MFN 07-188

Response to Portion of NRC Request for

Additional Information Letter No. 77

Related to ESBWR Design Certification Application

Tier 1

RAI Number 14.3-92

NRC RAI 14.3-92

DCD Tier 1, Revision 1, Table 2.5.6-1, Item Number 2, states that calculations will be performed to determine the maximum temperature of the spent fuel racks. However, neither the boundary conditions for the calculations nor the basis for acceptance are specified in Tier 1 or DCD Tier 2, Section 9.1.2. Provide boundary conditions (e.g., bulk pool temperature and fuel decay heat rate) and the basis for the acceptance criterion for peak spent fuel rack temperature (e.g., no nucleate boiling (voiding) to ensure validity of criticality analysis and/or temperature used to establish rack thermal stress for structural analysis).

GE Response

The final boundary conditions will be documented in the COL response to COL Item 9.1.6.E-2 in Chapter 9.

The response will consist of 2 parts.

Part 1 will discuss the spent fuel storage rack thermal analysis based on normal [120°F] and accident conditions [140°F]. The purpose of the calculations will be to establish the maximum temperature and that no nucleate boiling occurs under these conditions.

Part 2 will cover boiling in the spent fuel storage racks during the post accident 72-hour period. See Chapter 9, Section 9.1.2.7.

The structural acceptance criteria for the spent fuel storage racks is that the storage rack design shall not exceed the allowable stress levels given in the ASME B&PV Code, Section III, Subsection NF.

DCD Impact

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