

January 11, 2016

Mr. Jerald G. Head
Senior Vice President, Regulatory Affairs
GE-Hitachi Nuclear Energy
P.O. Box 780 M/C A-18
Wilmington, NC 28401

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION REGARDING REVIEW OF
AMENDMENT 37 TO LICENSING TOPICAL REPORTS NEDE-24011-P-A-19
AND NEDE-24011-P-A-19-US, GENERAL ELECTRIC STANDARD APPLICATION
FOR REACTOR FUEL AND THE U.S. SUPPLEMENT (TAC NO. MF0743)

Dear Mr. Head:

By letter dated February 13, 2013, Global Nuclear Fuel – Americas, LLC, submitted for U.S. Nuclear Regulatory Commission (NRC) staff review Topical Reports NEDE-24011-P-A-19 and NEDE-24011-P-A-19-US, General Electric Standard Application for Reactor Fuel and the US Supplement (Agencywide Documents Access and Management System Accession No. ML13052A612). Upon review of the information provided, the NRC staff has determined that additional information is needed to complete the review. Enclosed with this letter is a non-proprietary version of our Request for Additional Information (RAI). On November 9, 2015, James Harrison, GEH Vice President, Fuels Licensing, Regulatory Affairs, and I agreed that the NRC staff will receive your response to the enclosed Request for Additional Information (RAI) questions within 45 days of receipt of this letter. If you have any questions regarding the enclosed RAI questions, please contact me at (301) 415-1002.

Sincerely,

/RA/

Joseph A. Golla, Project Manager
Licensing Processes Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Project No. 710

Enclosure:
As stated

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Senior Vice President, Regulatory Affairs
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NRR-106

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DATE	01/04/2016	12/08/2015	01/04/2016	01/07/2016	01/11/2016

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GE-Hitachi Nuclear Energy Americas
cc:

Project No. 710

Mr. Jerald G. Head
Senior Vice President, Regulatory Affairs
GE-Hitachi Nuclear Energy
P.O. Box 780 M/C A-18
Wilmington, NC 28401
Jerald.Head@ge.com

Mr. James F. Harrison
GE-Hitachi Nuclear Energy Americas LLC
Vice President - Fuel Licensing
P.O. Box 780, M/C A-55
Wilmington, NC 28401-0780
james.harrison@ge.com

Ms. Patricia L. Campbell
Vice President, Washington Regulatory Affairs
GE-Hitachi Nuclear Energy Americas LLC
1299 Pennsylvania Avenue, NW
9th Floor
Washington, DC 20004
patriciaL.campbell@ge.com

Mr. Brian R. Moore
Vice President, Fuel Engineering, Acting
Global Nuclear Fuel–Americas, LLC
P.O. Box 780, M/C A-55
Wilmington, NC 28401-0780
Brian.Moore@gnf.com

OFFICE OF NUCLEAR REACTOR REGULATION
REQUEST FOR ADDITIONAL INFORMATION FOR
REVIEW OF TOPICAL REPORT AMNDMENT 37 TO NEDE-24011-P-A-19 AND
NEDE-24011-P-A-19-US, GENERAL ELECTRIC STANDARD APPLICATION
FOR REACTOR FUEL AND THE US SUPPLEMENT (TAC NO. MF0743)

By letter dated February 13, 2013, Global Nuclear Fuel – Americas, LLC, submitted for U.S. Nuclear Regulatory Commission (NRC) staff review, Topical Report, “Amendment 37 to NEDE-24011-P-A-19 and NEDE-24011-P-A-19-US, General Electric Standard Application for Reactor Fuel (GESTAR II) and the US Supplement.”

Amendment 37 incorporates several changes to the previous versions of GESTAR II. A brief summary of these changes are listed below:

- Modification of reference to NEDE-31152P, *General Electric Fuel Bundle Design Report* and addition of plant and cycle specific *Fuel Bundle Information Report*.
- Addition of a new Section 1.4 on compliance report references.
- Clarification of actions that plants must take if they deviate from generically analyzed Banked Position Withdrawal Sequence bank notch positions. (This was moved to Am 39 and has been approved).
- Incorporated SAFER/PRIME in to US supplements for loss-of-coolant accident analysis and removed SAFER/GESTER report list and associated references.

The Nuclear Performance and Code Review Branch staff has completed a comprehensive review of the topical report and found that additional information is required in order to complete the review. A list of requested additional information follows. A regulatory audit of the changes and related calculations may be necessary before the issuance of the draft safety evaluation.

RAI-1

Section 1.2.7 indicates that “New coefficients for the critical power will be provided in the critical power correlation *report* for each fuel product line.” Further, Section 1.2.7 C indicates that the listed criteria for “establishing the new correlation are those which were used in establishing the current GEXL and GEXL-PLUS correlations approved by NRC.”

The above mentioned section of the GESTAR II document indicates that General Electric Hitachi (GEH) does not need NRC approval for a new critical power correlation even for a new product line but only to send a report to the NRC on the new correlation except for a situation where the form of the correlation is different. The staff would like GEH to verify whether it has explicit assurance from NRC that a new correlation does not need NRC staff approval.

RAI-2

Page 2-2 of NEDE-24011-P-Draft indicates that [

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Enclosure

Please respond to the following request:

Describe how the lattice-dependent Maximum Average Peak Linear Heat Generation Rate (MAPLHGR)/or Linear Heat Generation Rate (LHGR) is different from the current methodology by which MAPLHGR is calculated.

RAI-3

Please provide details for the k_{∞} calculations for the lattices listed in Section 3.5, Reactivity of Fuel in Storage, for low density and high-density spent fuel storage racks as well as for low-density new fuel vault storage with various interrack spacing.

RAI-4

Please provide additional details of the sensitivity study performed to determine the effect of bundle power, bundle flow, subcooling, R-factor, and subcooling on critical power ratio for fuel designs as mentioned in Section S.2.2.1.