

March 10, 2015

Mr. Jerald G. Head  
Senior Vice President, Regulatory Affairs  
GE-Hitachi Nuclear Energy Americas, LLC  
P.O. Box 780, M/C A-18  
Wilmington, NC 28401-0780

SUBJECT: FINAL SAFETY EVALUATION FOR AMENDMENT 38 TO GLOBAL NUCLEAR FUEL – AMERICAS TOPICAL REPORT NEDE-24011-P-A/NEDO-24011-A, “GENERAL ELECTRIC STANDARD APPLICATION FOR REACTOR FUEL (GESTAR II)” (MF4871)

Dear Mr. Head:

By letter dated June 14, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML131650273), Global Nuclear Fuel – Americas (GNF) submitted Amendment 38 to Topical Report (TR) NEDE-24011-P-A/NEDO-24011-A, entitled “Administrative Amendment 38 to GESTAR II to Clarify the Potential Effect of Unique Plant Configurations on AOO [anticipated operational occurrences] Analyses in the GESTAR II US Supplement” to the U.S. Nuclear Regulatory Commission (NRC) staff for review.

The NRC staff has found that Amendment 38 to GESTAR II is acceptable for referencing in licensing applications for General Electric-designed boiling water reactors to the extent specified in the enclosed final safety evaluation (SE). The final SE defines the basis for acceptance of the TR.

Our acceptance applies only to material provided in the subject TR. We do not intend to repeat our review of the applicable material described in the TR. When the TR appears as a reference in license applications, our review will ensure that the material presented applies to the specific plant involved. License amendment requests that deviate from this TR will be subject to a plant-specific review in accordance with applicable review standards.

The accepted versions shall incorporate this letter and the enclosed final SE after the title page. Also, they must contain historical review information, including NRC requests for additional information and your responses. The accepted versions shall include a “-A” (designating accepted) following the TR identification symbol.

J. Head

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If future changes to the NRC's regulatory requirements affect the acceptability of this TR, GNF and/or licensees referencing it will be expected to revise the TR appropriately, or justify its continued applicability for subsequent referencing.

Sincerely,

*/RA/*

Aby S. Mohseni, Deputy Director  
Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation

Project No. 710

Enclosure:  
Final Safety Evaluation

J. Head

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Aby S. Mohseni, Deputy Director  
Division of Policy and Rulemaking  
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Enclosure:  
Final Safety Evaluation

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**ADAMS Accession No.: ML15013A104**

**NRR-106**

<b>OFFICE</b>	NRR/DPR/PLPB	NRR/DPR/PLPB	NRR/DSS/SNPB	NRR/DPR/PLPB	NRR/DPR
<b>NAME</b>	JGolla	DHarrison	JDean	AMendiola	AMohseni
<b>DATE</b>	2/19/2015	1/29/2015	2/23/2015	3/10/2015	3/10/2015

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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](mailto: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](mailto:james.harrison@ge.com)

Mr. Brian Moore  
Engineering Manager,  
Core & Fuel Engineering  
Global Nuclear Fuel – Americas, LLC  
P.O. Box 780, M/C A-55  
Wilmington, NC 28401-0780  
[Brian.Moore@gnf.com](mailto:Brian.Moore@gnf.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](mailto:patriciaL.campbell@ge.com)

**DRAFT SAFETY EVALUATION FOR AMENDMENT 38**  
**TO GLOBAL NUCLEAR FUEL – AMERICAS, LLC**  
**TOPICAL REPORT NEDE-24011-P-A-US, GENERAL ELECTRIC STANDARD APPLICATION**  
**FOR REACTOR FUEL (GESTAR II)**  
**(TAC NO. MF4871)**

1.0 INTRODUCTION AND BACKGROUND

By letter dated June 14, 2013 (Reference 1), Global Nuclear Fuel – Americas, LLC (GNF) submitted Amendment 38 (Agencywide Documents Access and Management System (ADAMS) No. ML131650273) to Topical Report (TR) NEDE-24011-P-A, General Electric Standard Application for Reactor Fuel (GESTAR II, U. S. Supplement) to the U. S. Nuclear Regulatory Commission (NRC) staff for Review. The change proposed in the Amendment 38 is administrative in nature.

In Amendment 38, GNF requests to introduce clarification regarding the potential effect of unique plant configurations on anticipated operational occurrences (AOOs) in the GESTAR II process (NEDE-20411-P-A-US) (Reference 2) section on AOOs of moderate frequency events. This clarification is on differences in calculational procedures that may arise because of utility-selected margin improvement options.

GNF proposes a clarification on calculational procedure differences due to utility selected margin improvement options due to unique plant configurations that could result in the identification of additional potential limiting events requiring AOO analyses.

2.0 EVALUATION

Section S.2 of Reference 2 classifies the AOOs and accidents based on the frequency of occurrence: (1) incidents of moderate frequency, (2) infrequent incidents, and (3) limiting faults. A sensitivity analysis was performed to determine the effect of changes in fuel bundle power, bundle flow, subcooling, R-factor, and pressure on critical power ratio (CPR) for fuel designs (Table S-1 of Reference 2). There are AOOs that are limiting because minimum CPR (MCPR) would involve significant changes in power. Based on this analysis, some AOOs are most likely to limit operation because of MCPR considerations.

GNF requests that since some plant-unique analyses will differ in certain aspects from the typical calculational procedure, it is necessary to explicitly attribute specific reasons for these differences. The request is specifically to modify Section S.2.2.1 in Reference 2,

*Some plant-unique analyses will differ in certain aspects from the typical calculational procedure. These differences arise because of utility-selected margin improvement options. A description of these options and their effect upon the AOO analysis is given in Section S.5. ATWS pump trip is assumed in the analysis of those plants listed in Table S-2 as follows, with the modified portions underlined:*

ENCLOSURE

Some plant–unique analyses will differ in certain aspects from the typical calculational procedure. These differences may arise because of utility–selected margin improvement options, or because of unique plant configurations, which could result in the identification of additional potential limiting events requiring AOOs analyses. A description of the margin improvement options and their effect upon the AOO analysis is given in Section S.5. ATWS pump trip is assumed in the analysis of those plants listed in Table S-2.

Table S-2 of Reference 2 lists the plants for which ATWS pump trip is assumed in transient analysis, as indicated in the above modified portion.

Section S.5 of Reference 2 lists three groups of analysis options: the first group lists options that are chosen to improve MCPR margin, the second group consists of improvements that represent a collection of operating flexibility options, and the third group includes the requirements for applying the generic analysis for the fuel loading error event. In each category of events, options are selected from each cycle and documented in the cycle design documentation and the plant supplemental reload licensing report (SRLR). The margin improvement options are available to all boiling water reactor (BWR) licensees. Plant-specific and/or generic bounding analyses shall be made available and submitted for NRC approval. The plant-specific SRLR shall designate the options selected by each BWR licensee. The NRC staff has reviewed each of these options and found the proposed modifications in Section S.2.2.1 of Reference 2 are acceptable.

The NRC staff agrees that updating this reference is an administrative change, and therefore, finds it acceptable.

### 3.0 CONCLUSION

Based on the review and evaluation of GNF request for Amendment 38 to GESTAR II, the NRC staff finds that the proposed Amendment 38 to NEDE-24011-A is administrative in nature, and therefore, is acceptable.

### 4.0 REFERENCES

1. Letter, MFN 13-036 from Brian Moore (GNF) to US NRC, “Administrative Amendment 38 to GESTAR II to Clarify the Effect of Unique Plant Configurations on AOO Analyses in the GESTAR II US Supplement,” Global Nuclear Fuel, June 14, 2013.
2. NEDE-24011-P-A, Revision 19, General Electric Standard Application for Reactor Fuel (GESTAR II, US Supplement), Global Nuclear Fuel, April 2011.

Principal Contributor: Mathew M. Panicker

Date: March 10, 2015