



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
WASHINGTON, D.C. 20555-0001

February 6, 2020

Mr. Scott P. Murray, Licensing Manager  
Global Nuclear Fuel - America  
3901 Castle Hayne Road  
P.O. Box 780  
Wilmington, NC 28402

SUBJECT: GLOBAL NUCLEAR FUEL – AMERICAS LLC: ACCEPTANCE REVIEW AND  
REQUEST FOR SUPPLEMENTAL INFORMATION, LICENSE AMENDMENT  
REQUEST TO INCREASE ENRICHMENT LIMITS TO LESS THAN OR EQUAL TO  
8 PERCENT U-235 (ENTERPRISE PROJECT IDENTIFIER L-2019-LLA-0245)

Dear Mr. Murray:

By letter dated October 31, 2019 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19304B898), Global Nuclear Fuel – Americas LLC (GNF-A) submitted a request to amend Chapter 1.0, “General Information,” and Chapter 5.0, “Nuclear Criticality Safety,” of SNM-1097. The proposed changes increase the GNF-A’s authorized enrichment limit from 5 to 8 percent U-235 and seek the approval of the licensee’s minimum margin of subcriticality to support the enrichment increase. The U.S. Nuclear Regulatory Commission (NRC) staff performed an acceptance review of your application to determine if it contains sufficient technical information to allow the NRC staff to complete the detailed technical review.

On December 20, 2019, via email (ADAMS Accession No. ML19354B408), the NRC staff determined additional technical information is needed to proceed with the review. The original submittal provides proposed administrative and criticality revisions but does not provide updated information on the facility change process and integrated safety analyses that are needed to support the increase in the enrichment limit. These issues were discussed with GNF-A staff during a call held on December 3, 2019 (ADAMS Accession No. ML19346F570). A description of the specific information that is needed to proceed with the review is stated in the enclosure to this letter as a request for supplemental information (RSI).

The response to the RSI should be provided within 15 business days of the receipt of this letter. The NRC staff held a teleconference to discuss the RSI’s and ensure mutual understanding on January 29, 2020. The attached RSIs includes updated text based on feedback from that call. Your submittal was assigned Enterprise Project Identifier (EPID) L-2019-LLA-0245. After we receive a response to the RSIs, we will provide an anticipated completion date for our formal review.

In accordance with Title 10 of the *Code of Federal Regulations*, Section 2.390 of the NRC’s “Agency Rules of Practice and Procedure,” a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records

component of NRC's ADAMS. ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

If you have any questions concerning this letter, please contact Mr. Matthew Bartlett of my staff at 301-415-7506, or via e-mail at [Matthew.Bartlett@nrc.gov](mailto:Matthew.Bartlett@nrc.gov).

Sincerely,

**/RA/**

Jacob I. Zimmerman, Branch Chief  
Fuel Facilities Licensing Branch  
Division of Fuel Management  
Office of Nuclear Material Safety  
and Safeguards

Docket No. 70-1113  
License No. SNM-1097

Enclosure:  
Request for Supplemental Information

cc: [gnfa@listmgr.nrc.gov](mailto:gnfa@listmgr.nrc.gov)

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DATED: February 6, 2020

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**ADAMS Accession No.: ML19350B458**

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## REQUEST FOR SUPPLEMENTAL INFORMATION

Global Nuclear Fuel – America, LLC. (GNF-A) submitted an amendment request to increase enrichment limits up to 8 weight (wt.) percent and to reestablish and confirm the continued acceptability and validity of the minimum margin of subcriticality for enrichment up to 8 wt. percent. The following information is need by the Nuclear Regulatory Commission (NRC) staff to proceed with the review.

### 1. Scope of Amendment

#### **Regulatory Basis:**

Title 10 of the *Code of Federal Regulations* (10 CFR), Section 70.34, “Amendment of licenses,” requires the licensee to, “specify the respects in which the licensee desires his license to be amended ....”

#### **Issue with current Submittal:**

During the acceptance review, the staff found that clarifying information is required to better understand the scope of the amendment request. The NRC staff’s current understanding is that the proposed changes to SNM-1097 Chapters 1.0 and 5.0, in addition to the administrative changes to the Chapters themselves, will increase the enrichment limit in license condition 6(A) (and corresponding changes in the license application) from 5 to 8 wt. percent U-235. This may necessitate the re-approval of the licensee’s minimum margin of subcriticality, as required by 10 CFR 70.61(d), due to the potential effects of an increase in enrichment on criticality code validation (benchmark applicability, defined areas of applicability, etc.) and overall margin of subcriticality.

#### **Request:**

Provide a safety basis for the proposed increase in the enrichment limit, which gives reasonable assurance of adequate safety for the proposed change. Describe how the proposed increase in enrichment is expected to impact plant operations and clarify how these changes will be analyzed (e.g., under 70.72) for compliance with the regulations and the license.

### 2. Describe Impacts on Plant Operations and Safety

#### **Regulatory Basis:**

Section 70.34, “Amendment of licenses” of 10 CFR states that the licensee’s amendment request must include, “grounds for such amendment.”

#### **Issue with Current Submittal:**

The proposed increase in the enrichment limit from “Uranium enriched to <5% U-235” to the proposed “Uranium enriched to <8% U-235” located in license condition 6(A) (and corresponding changes in the license application) may have a significant impact on the site, structures, processes, systems, equipment, components, computer programs, and activities of personnel. However, there is no description of these changes or how they impact plant systems, the integrated safety analysis (ISA), and the ISA summary.

#### **Request:**

- a. Describe the impact that the proposed request for higher enrichment will have on plant systems, the ISA, and ISA summary.

Enclosure

- b. Confirm that all changes to the plant to support the increased enrichment will be evaluated consistent with GNF-A's approved change process.
- c. Clarify if the change in enrichment will result in environmental impacts or if the proposed changes are categorically excluded.
- d. Provide a commitment for an operational readiness review. GNF-A would not be authorized to possess or process licensed material above the current limits (i.e., material that exceeds the limits in license condition 6(A) "Uranium enriched to <5% U-235 ...") until the safety basis documents (i.e., safety programs, including process safety information, nuclear criticality safety evaluations and analyses, ISA, and ISA summary) have been appropriately analyzed, updated, and are reviewed through the operational readiness review. The readiness review would focus on those areas of the plant impacted by the proposed increase in enrichment.

### **3. Confirmation of Appropriate ISA Analysis to Support the Proposed Change Regulatory Basis:**

Section 70.65, "Additional content of applications," of 10 CFR, sub-section (b) states that updates to the ISA summary should be submitted with "...amendment applications as necessary...." Updates to the ISA include the performance requirements. Therefore, this information is needed to confirm any changed facility operations comply with the performance requirements of 10 CFR 70.61.

#### **Issue:**

The staff found that the license amendment package does not provide information on potential changes to the ISA and ISA summary to support the proposed amendment, nor does it indicate that such an analysis was conducted. Furthermore, there is no description of how the submittal impacts facility processes, procedures, and the ISA. In addition, the amendment request does not currently provide a basis that the licensee continues to meet the performance requirements under the proposed amendment.

#### **Request:**

- a. Provide a discussion of the appropriate updates to all safety basis documents, including the ISA.
- b. Provide a revised ISA summary with this amendment request per 10 CFR 70.65(b) or a justification for why it is not necessary.