

Docket No.: 70-1113

Licensee: Global Nuclear Fuel – Americas, LLC

SUBJECT: Safety Evaluation Report: Amendment No. 2 for License No. SNM-1097, Changes in Management Organization and Possession Limits

I. INTRODUCTION

In an application to the U.S. Nuclear Regulatory Commission (NRC) dated July 12, 2010 (Agencywide Documents Access and Management System [ADAMS] Accession Numbers ML101930448 and ML110620358), Global Nuclear Fuel – Americas, LLC, (GNF-A) requested an amendment to its Special Nuclear Material (SNM) License SNM-1097 to reflect changes to GNF-A's management organization and to their licensed material possession limits. GNF-A is requesting the amendment to its license pursuant to the regulation in Title 10 of the *Code of Federal Regulations* (10 CFR), Section 70.34. GNF-A supplemented its application with additional submittals dated July 28, 2010, and February 4, 2011 (ADAMS Accession Numbers ML102160516 and ML110470400, respectively).

The applicable regulations include 10 CFR Part 20, "Standards for Protection Against Radiation;" 10 CFR Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions;" 10 CFR Part 70, "Domestic Licensing of Special Nuclear Material;" 10 CFR Part 73, "Physical Protection of Plants and Materials;" and 10 CFR Part 74, "Material Control and Accounting of Special Nuclear Material."

The NRC staff used guidance in NUREG-1520, "Standard Review Plan for the Review of a License Application for a Fuel Cycle Facility," (NRC, 2010) (NUREG-1520) to conduct its safety review. The NRC staff's safeguards review included the review of GNF-A's Physical Security Plan, including transportation security and the material control and accounting program. The NRC staff also reviewed GNF-A's Radiological Contingency and Emergency Plan.

II. DISCUSSION

a) Management Organization Changes

The NRC renewed License No. SNM-1097 on May 19, 2009, as corrected on May 5, 2010. The renewed license includes license conditions related to the environmental, health and safety functions. In Chapter 2 of the license renewal application (ADAMS Accession Number ML071000128), GNF-A described the management organization structure, responsibilities, and authorities—including organizational operating units, positions and activities within organizational operating units, position accountability and requirements, and management of organization changes. This renewed license is referred to as the "current license" in this Safety Evaluation Report.

In the license amendment application (ADAMS Accession Numbers ML101930448, ML102160516 and ML110620358), GNF-A revised the management organization to reflect that the Environment Health and Safety Manager will report directly to GE-Hitachi and indirectly to the Global Nuclear Fuel, LLC, Chief Operating Officer and Facility Manager. This change reflects a new coordination between the environmental health and safety functions for the GNF-A facility and the new Global Laser Enrichment facility.

The NRC staff reviewed the proposed amended organization and administrative elements and determined that they continue to describe clear responsibilities and associated resources for the safe operation of the facility. The NRC staff concludes that, under the revised management organization, GNF-A will continue to have an acceptable organization, administrative policies, and sufficient competent resources to provide for the safe operation of the GNF-A facility, under both normal and abnormal conditions, in accordance with 10 CFR 70.22(a)(6), (a)(8), 10 CFR 70.23(a)(2) and (a)(4).

b) Proposed Possession Limits

The renewed license authorizes the possession and use of a specified quantity of U-235 enriched to a maximum enrichment of less than or equal to 5 percent, in any chemical or physical form. In the amendment application, GNF-A requested the following change to the possession limits:

| Radionuclide | Chemical and/or Physical Form | Current limit | Proposed Limit |
|-------------------------------------|-------------------------------|---------------|----------------|
| Uranium enriched to \leq 5% U-235 | Any | xxxx | xxxx |

The NRC staff reviewed the amendment application in the technical areas of radiation protection, criticality safety, chemical safety, fire safety, environmental protection, decommissioning, material control and accounting, and physical protection, as described below. The NRC staff also evaluated GNF-A's Integrated Safety Analysis (ISA) Summary to confirm that it adequately bounds any credible accidents from the storage and use of the proposed quantities.

c) Radiation Protection

The proposed inventory of SNM will be subject to the same radiation protection provisions as the current licensed inventory. The NRC staff previously concluded that the current license contains adequate: (a) worker qualification requirements; (b) written radiation protection procedures; (c) radiation work permit program; (d) program for ensuring that worker and public doses are as low as is reasonably achievable (ALARA); and (e) necessary training for all personnel who have access to radiologically restricted areas. The NRC also previously concluded that the current radiation survey and monitoring program is adequate to protect workers and members of the public who may potentially be exposed to radiation. The amendment application does not request any change to GNF-A's licensed activities that were previously evaluated and approved by the NRC staff when the license was renewed. Therefore, the NRC staff has reasonable assurance that the current radiation protection program, as described in the current license, is adequate for the proposed inventory.

d) Criticality Safety

The proposed inventory of SNM will be subject to the same criticality safety provisions as the current inventory, which was evaluated during NRC staff review of the license renewal application (ADAMS Accession Number ML091000554). In addition, the amendment application does not request any change to GNF-A's licensed activities that were previously

evaluated and approved by the NRC staff when the license was renewed. Therefore, the NRC staff has reasonable assurance that the current Nuclear Criticality Safety program, as described in the current license, is adequate for the proposed inventory.

e) Chemical Safety

The proposed inventory of SNM will be subject to the same chemical safety provisions as the current inventory, which was evaluated during the NRC staff review (ADAMS Accession Number ML091000554) of the license renewal application. The NRC staff concluded in its review of the license renewal application that GNF-A adequately described and assessed accident consequences that could result from the handling, storing, or processing of licensed materials, and that could potentially have significant chemical consequences and effects. GNF-A performed hazard analyses that identified and evaluated those chemical process hazards and potential accidents, and established safety controls. The NRC staff evaluated this information during the review of the license renewal application and concluded that it met the regulatory requirements in 10 CFR, Sections 70.61, 70.62, and 70.65. The amendment application does not request any change to GNF-A's licensed activities that were previously evaluated by the NRC staff in the license renewal application. Therefore, the NRC staff has reasonable assurance that the current existing chemical safety program, as described in the current license, is adequate for the proposed inventory.

f) Fire Safety

The proposed inventory of SNM will be subject to the same fire safety provisions as the current inventory, which was evaluated during the NRC staff review (ADAMS Accession Number ML091000554) of the license renewal application. In its license renewal application, GNF-A commits to reasonable engineered and administrative controls to minimize the risk of fires and explosions. The items relied on for safety (IROFS) and defense-in-depth protection discussed in GNF-A's ISA Summary, along with safety basis assumptions and the planned programmatic commitments in the license renewal application, were evaluated by the NRC staff during the review of the license renewal application. The NRC staff concluded that GNF-A satisfied the regulatory requirements in 10 CFR, Sections 70.61, 70.62, and 70.65, thus providing reasonable assurance that the facility is protected against fire hazards. The amendment application does not request any change to GNF-A's licensed activities that were previously evaluated and approved by the NRC staff when the license was renewed. Therefore, the NRC staff has reasonable assurance that the current fire safety program, as described in the current license, is adequate for the proposed inventory.

g) Environmental Protection

The proposed inventory of SNM will be subject to the same environmental safety provisions as the current inventory. In its license renewal application, GNF-A commits to adequate environmental protection measures, including environmental and effluent monitoring and effluent controls to maintain public doses ALARA as part of the radiation protection program. During the review of the license renewal application, the NRC staff concluded that GNF-A's controls are adequate to protect the environment and the health and safety of the public, and comply with the regulatory requirements in 10 CFR Part 20. The amendment application does not request any change to GNF-A's licensed activities that were previously evaluated and approved by the NRC staff when the license was renewed. Therefore, the NRC staff has reasonable assurance that the current environmental protection program, as described in the current license, is adequate for the proposed inventory.

h) Decommissioning

The decommissioning cost estimate for the GNF-A facility is contained in GNF-A's Decommissioning and Closure Cost Estimate, dated August 10, 2007 (ADAMS Accession Numbers ML072220399 and ML072220402), as approved by NRC letter, dated October 2, 2007 (ADAMS Accession Number ML072420252). In the cost estimate, GNF-A assumed that all in-process production uranium would be removed from the site prior to the initiation of decommissioning and closure activities. This assumption remains the same in the amendment application. Therefore, the NRC staff determined that the proposed inventory of licensed material will not affect the decommissioning cost estimate.

i) Material Control and Accounting

The proposed inventory of licensed material will be subject to the provisions of GNF-A's Fundamental Nuclear Material Control Plan, required by 10 CFR Part 74 and Safeguards Condition SG-1.1. The NRC staff concluded that no revisions to the Plan are necessary for the proposed inventory.

j) Physical Protection

The proposed inventory of licensed material will be subject to the provisions of GNF-A's Physical Security Plan (PSP), required by 10 CFR Part 73 and Safeguards Condition SG-2.1.

The NRC staff reviewed the PSP to ensure that it addresses applicable regulations. Additionally the staff reviewed the Interim Compensatory Measures Order issued to GNF-A on February 6, 2003, and determined that it is acceptable for the proposed inventory.

On January 3, 2011, the NRC staff issued a Request for Additional Information (RAI) (ADAMS Accession Number ML110140143). The RAI focused on elements of the Transportation Security Plan (TSP). By letter dated February 4, 2011 (ADAMS Accession Number ML110470400), GNF-A submitted Revision 10 of the PSP, which incorporated its responses to the RAI. The PSP also included the TSP. The PSP and TSP were reviewed to ensure GNF-A met the security requirements outlined in 10 CFR Part 73 and committed to implementing the general performance objectives of 10 CFR 73.67(a) and the specific fixed site and in-transit security requirements of 10 CFR 73.67(c), (f), and (g). The PSP was reviewed to ensure SNM will be stored only in a controlled access area, monitored by an intrusion detection system or other approved procedures, will have guard force and offsite response force available to respond to unauthorized penetrations or activities, establish and maintain response procedures for dealing with threats of theft, or actual theft of SNM, and reporting safeguards events as required by 10 CFR 73.67(a). The TSP was reviewed to ensure that GNF-A committed to providing advance notification, receiving confirmation from receiver prior to shipping material, providing in-transit security, transport the material in tamper indicating sealed containers, verifying the integrity of seals on shipments received, notifying shipper of receipt of shipment, and implementing the proper reporting and investigations in the event of lost or unaccounted for SNM in accordance with the requirements in 10 CFR 73.67(g).

Based on its review, the NRC staff determined that the methods and procedures outlined in the PSP satisfy the performance objectives, systems capabilities, and reporting requirements specified in 10 CFR 73.67 and 73.71. Therefore, the NRC staff concluded that the PSP for the facility is acceptable and provides reasonable assurance that the requirements for the physical protection of SNM of low strategic significance (SNM-LSS) will be met.

The NRC staff reviewed GNF-A's PSP for SNM-LSS shipments originating from, or arriving at, the facility. The approaches and procedures outlined in the TSP satisfy the performance objectives, systems capabilities, and event and advance notification requirements specified in 10 CFR 73.67(a), 73.67(f) and (g)(1)-(5), 73.71, 73.73, and 74.15.

k) Integrated Safety Analysis

GNF-A provided a revised ISA Summary in accordance with 10 CFR 70.72 on January 29, 2010 (ADAMS Accession Number ML100480249); and NRC approved the revision in a letter, dated June 22, 2010 (ADAMS Accession Number ML101720198). The NRC staff reviewed the ISA Summary revision in light of the amendment application and confirmed that the accident scenarios considered in the ISA are adequate to address the increased inventory, and the IROFSs that are provided to control intermediate- and high-consequence accidents will be adequate to control accidents from the proposed inventory.

III. ENVIRONMENTAL ASSESSMENT

The NRC staff has determined that the proposed management organization changes are administrative and organizational in nature. The NRC staff has also determined that the proposed inventory of licensed material results in: (i) no significant change in the types or significant increase in the amounts of any effluents that may be released off site; (ii) no significant increase in individual or cumulative occupational radiation exposure; (iii) no significant construction impact; and (iv) no significant increase in the potential for, or consequences from, radiological accidents.

Therefore, in accordance with 10 CFR 51.22(c)(11), neither an environmental assessment nor an environmental impact statement is required for this licensing action.

IV. CONCLUSION

The NRC staff concludes that the information and commitments provided by GNF-A in their license amendment application provide reasonable assurance of adequate safety of the proposed changes in management organization and possession limits. The NRC staff concludes that the proposed organization and possession limits will not have an adverse impact on the public health and safety, the common defense and security, or the environment, and satisfy the applicable requirements in 10 CFR Parts 20, 51, 70, 73, and 74.

V. PRINCIPAL CONTRIBUTORS

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VI. REFERENCES

(NRC, 1983) U.S. Nuclear Regulatory Commission, Regulatory Guide 5.59, "Standard Format and Content for a Licensee Physical Security Plan for the Protection of Special Nuclear Material of Moderate or Low Strategic Significance," February 1983.

(NRC, 2005) U.S. Nuclear Regulatory Commission, Regulatory Issue Summary 2005-22, "Requirements for the Physical Protection During Transportation of Special Nuclear Material of Moderate and Low Strategic Significance: 10 CFR Part 73 vs. Regulatory Guide 5.59 (1983)" October 2005.

(NRC, 2010) U.S. Nuclear Regulatory Commission, NUREG-1520, "Standard Review Plan for the Review of a License Application for a Fuel Cycle Facility," Revision 1, May 2010.

(GNF-A, 2007) "License Renewal Application for Global Nuclear Fuel - Americas LLC Reference: NRC License SNM- 1097, Docket 70- 1113," April 2, 2007

(GNF-A, 2010) "Request to Amend License SNM-1097," July 12, 2010.

(GNF-A, 2011) "Physical Security Plan-Revision 10," February 4, 2011.