



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
245 PEACHTREE CENTER AVENUE N.E., SUITE 1200  
ATLANTA, GEORGIA 30303-1200

January 10, 2024

Ryan Huth  
Facility Manager  
Global Nuclear Fuel - Americas, LLC  
P.O. Box 780, Mail Code J20  
Wilmington, NC 28402

SUBJECT: GLOBAL NUCLEAR FUEL - AMERICAS – NRC INSPECTION REPORT  
07001113/2023006

Dear Ryan Huth:

On December 20, 2023, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Global Laser Enrichment (GLE). The NRC inspectors discussed the results of this inspection with Stephen Long and other members of the GLE staff. The results of this inspection are documented in the enclosed report.

No violations of more than minor significance were identified during this inspection.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

A handwritten signature in blue ink, appearing to read "R. Williams".

Signed by Williams, Robert  
on 01/10/24

Robert E. Williams, Chief  
Projects Branch 1  
Division of Fuel Facility Inspection

Docket No. 07001113  
License No. SNM-1097

Enclosure:  
As stated

cc w/ encl: Distribution via LISTSERV

SUBJECT: GLOBAL NUCLEAR FUEL - AMERICAS – NRC INSPECTION REPORT  
07001113/2023006 DATED – JANUARY 10, 2024

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NAME	L. Pitts	R. Williams			
DATE	1/9/2024	1/10/2024			

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**U.S. NUCLEAR REGULATORY COMMISSION  
Inspection Report**

Docket Number: 07001113

License Number: SNM-1097

Report Number: 07001113/2023006

Enterprise Identifier: I-2023-006-0050

Licensee: Global Nuclear Fuel - Americas, LLC

Facility: Global Nuclear Fuel - Americas

Location: Wilmington, NC

Inspection Dates: October 31, 2023, to December 20, 2023

Inspectors: L. Pitts, Sr. Fuel Facility Projects Inspector

Approved By: Robert E. Williams, Chief  
Projects Branch 1  
Division of Fuel Facility Inspection

Enclosure

## **SUMMARY**

The U.S. Nuclear Regulatory Commission (NRC) conducted readiness review inspections in the area of operational safety for operation of the Global Laser Enrichment Collector Module.

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting an NRC inspection at Global Nuclear Fuel - Americas, in accordance with the fuel cycle facility inspection program. This is the NRC's program for overseeing the safe operation of licensed fuel cycle facilities. Refer to <https://www.nrc.gov/materials/fuel-cycle-fac.html> for more information.

### **List of Violations**

No violations of more than minor significance were identified.

### **Additional Tracking Items**

None.

## INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Inspections were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2600, "Fuel Cycle Facility Operational Safety and Safeguards Inspection Program." The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

## SAFETY OPERATIONS

### 88020 - Operational Safety

The inspectors evaluated selected aspects of the licensee's Operational Safety program to verify compliance with selected portions of Title 10 of the Code of Federal Regulations, Part 70 (10 CFR 70), including 70.61, 70.62, and applicable licensee procedures.

### Operational Safety

#### Identification of Safety Controls and Related Programs (IP Section 02.01)

The inspectors reviewed all the accident sequences and items relied on for safety (IROFS) associated with the Global Laser Enrichment Collector Module, based on the information provided in the integrated safety analysis (ISA) summary. The inspectors conducted a general plant tour of each major plant operating area. The accident sequences selected for review are listed below:

- TL-R-01e – Uranium Hexafluoride (UF6) Release to Gas Handling System (GHS) Room - Collector Module (CM) Failure Due to Crane Activities
- TL-R-01f - UF6 Release to GHS Room - CM Failure Due to Dewar Drop
- TL-R-01g - UF6 Release to GHS Room - CM Failure by High Pressure
- TL-R-02 - UF6 Release to GHS Room - CM by Uncontrolled Heating of a UF6 Plug
- TL-F-03 - Fire Adjacent to GHS Room or Maintenance Room
- TL-F-05 - Transient Combustible Fire Internal to GHS Room or Maintenance Room

#### Review of Safety Controls and Related Programs (IP Section 02.02)

The inspectors reviewed information related to administrative, engineered, and passive safety controls or IROFS for the accident sequences selected above, including the identification of the licensee's assumptions and bounding cases as they apply to each of the selected accident sequences, safety controls, or IROFS. This review was performed to verify that the controls or IROFS were available and reliable to perform their intended safety functions and that the design basis assumptions

were reflected in the actual conditions in the field. The specific safety controls selected for review are listed below:

- TL-HF-03CG - Rupture Disk on the Carrier Gas Supply Line - Passive Engineering Control (PEC)
- TL-HF-03PG - Rupture Disk for the Main Vacuum Vessel - PEC
- TL-HF-04a - Sense and Flee – Hydrogen Floride - Administrative Control (AC)
- TL-HF-04c - Sense and Flee - Fire - AC
- TL-HF-05 - Crane Lift Control Process - AC
- TL-HF-06 - Combustible Control - AC
- TL-HF-07 - Protective Cover on the Collector Module - PEC
- TL-HF-08 - Plug Removal Process - AC
- TL-HF-09 - Radiant Shield - PEC
- TL-HF-10 - 12B Cylinder Storage Requirements - AC
- TL-HF-116 - Heat Transfer Low Temperature Interlock - Active Engineered Control

#### Implementation of Safety Controls (IP Section 02.03)

For the safety controls listed above, the inspectors reviewed management measures to verify proper implementation in accordance with 10 CFR 70 and applicable sections of the license application. This review was performed to verify that selected safety controls or IROFS were present, available, and reliable to perform their safety function and that the design basis assumptions were reflected in the actual conditions in the field. The inspectors conducted the following activities to verify the implementation of selected safety controls:

- performed walkdowns to verify implementation of the IROFS that are listed in section 02.02 above
- interviewed licensee staff regarding performance of inspections associated with IROFS TL-HF-06
- interviewed licensee staff assigned to perform inspections to verify they were knowledgeable of the requirements associated with their assigned inspections
- observed engineers and technicians performing procedure FTI 52220.00-F7, "Helium Isolation Valve Low Temperature Interlock," used to verify operability of IROFS TL-HF-116

#### Safety Control Support Programs (IP Section 02.04)

The inspectors assessed additional management measures that support the availability and reliability of the selected safety controls to verify these were implemented in accordance with 10 CFR 70 and applicable sections of the license application.

- reviewed the corrective actions developed to address the issues identified in GLE's internal operational readiness review for the CM (CAP - GLE 2023021)
- reviewed the corrective actions associated with CAP - GLE 2023022, "Improper IROFS Documentation"

## **INSPECTION RESULTS**

No issues were identified.

## **EXIT MEETINGS AND DEBRIEFS**

The inspectors verified no proprietary information was retained or documented in this report.

- On October 31, 2023, the inspectors presented the preliminary results to Stephen Long and other members of the GLE staff.
- On December 20, 2023, the inspectors presented the NRC inspection results to Stephen Long and other members of the GLE staff.

## DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
88020	Corrective Action Documents	GLE 2023-021	GLE Internal ORR for Collector Module	12/06/2023
		GLE 2023-022	Improper IROFS Documentation	12/07/2023
	Engineering Evaluations	CSA 5220.00	GLE Test Loop Criticality Safety Analysis - Collector Module Operation Nuclear Safety	Rev. 4
		FHA 5201.00	GLE Test Loop Fire Hazards Analysis	Rev. 8
		PHA 5200 Node 17	GLE Test Loop Process Hazard Analysis - Collector Module Operation	Rev. 10
		QRA 5220.00	GLE Test Loop Quantitative Risk Analysis - Collector Module Operation	Rev. 15
		QRA-5201.00	GLE Test Loop Quantitative Risk Analysis - Fire Events	Rev. 12
		Miscellaneous	GLEP-00010-R-F02	Training Attendance Sheet - TM-IROFS-5200, TM-IROFS-5110, General ISA IROFS for Test Loop, IROFS Raman Cell
	GLEP-00010-R-F02		Training Attendance Sheet - TM-IROFS-5200, TM-IROFS-5110, General ISA IROFS for Test Loop, IROFS Raman Cell	10/18/2023
	GLEP-00010-R-F02		Training Attendance Sheet - TM-IROFS-5200, TM-IROFS-5110, General ISA IROFS for Test Loop, IROFS Raman Cell	10/30/2023
	GLEP-00010-R-F02		Training Attendance Sheet - TM-IROFS-5200, TM-IROFS-5110, General ISA IROFS for Test Loop, IROFS Raman Cell	11/21/2023
	GLEP-00010-R-F02		Training Attendance Sheet - TM-IROFS-5200, TM-IROFS-5110, General ISA IROFS for Test Loop, IROFS Raman Cell	12/04/2023
	IROFS 5200.00		GLE Test Loop IROFS Description Package	Rev. 0
	IROFS 5220.00		Collector Module IROFS Description Package	Rev. 0
	TM-IROFS-5200.00 - GLE-ENG-DB-ISA-IROFS-TRG-1000002		General Integrated Safety Analysis (ISA) and Items Relied on for Safety (IROFS) Training for Global Laser Enrichment Test Loop (GLE TL) Personnel	Rev. 3
	TM-IROFS-5200.00 - GLE-ENG-DB-ISA-IROFS-TRG-1000003		IROFS Training: Collector Module - TM-IROFS-5220	Rev. 3



Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Procedures	FTI 5220.00-F7	Helium Isolation Valve Low Temperature Interlock	Rev. 1
		OP 5200.00	GLE Test Loop - General	Rev. 42
		OP 5220.00	Collector Module Operating Procedure	Rev. 20