



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET, SW, SUITE 23T85
ATLANTA, GEORGIA 30303-8931

September 10, 2009

Ms. Lisa Price
Senior Vice President, Fuel Cycle
Global Nuclear Fuel - Americas, L.L.C.
P.O. Box 780, Mail Code J20
Wilmington, NC 28402

SUBJECT: NRC INSPECTION REPORT NO. 70-1113/2009-005 AND NOTICE OF VIOLATION

Dear Ms. Price:

This refers to the inspection conducted from July 20 - 30, 2009, at the Global Nuclear Fuels – Americas, L.L.C. (GNF-A) Wilmington, NC facility. The purpose of the inspection was to determine whether activities authorized by the license were conducted safely and in accordance with NRC requirements. At the conclusion of the inspection on July 24 and July 30, 2009, the inspectors discussed the findings with you and members of your staff. On August 19, 2009, a re-exit meeting was conducted to further discuss the inspection findings with members of your staff.

This inspection was an examination of activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of a selective examination of procedures and representative records, observations of activities, and interviews with personnel.

Based on the results of this inspection, the NRC has determined that one Severity Level IV violation of NRC requirements occurred. The violation was evaluated in accordance with the NRC Enforcement Policy included on the NRC's Web site at <http://www.nrc.gov>; select What We Do, Enforcement, then Enforcement Policy.

The violation is cited in the enclosed Notice of Violation (Notice) and the circumstances surrounding it are described in the NRC Form 591FF, SAFETY AND COMPLIANCE INSPECTION REPORT, Parts 1 and 3. The violation is being cited in the Notice because it was identified by the NRC.

The NRC has concluded that information regarding the reason for the violation, the corrective actions taken and planned to correct the violation and prevent recurrence is already adequately addressed in the enclosed Inspection Report No. 70-1113/2009-005. Therefore you are not required to respond to this letter unless the description herein does not accurately reflect your corrective actions or your position. In that case, or if you choose to provide additional information, you should follow the instructions specified in the enclosed Notice.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosures will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

Should you have any questions concerning this letter, please contact us.

Sincerely,

/RA/

Daniel W. Rich, Chief
Fuel Facility Inspection Branch 3
Division of Fuel Facility Inspection

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

Enclosures: 1. Notice of Violation
2. NRC Form 591FF Parts 1 and 3

cc w/encls:
Scott Murray, Manager
Facility Licensing
Global Nuclear Fuels - Americas, L.L.C.
Electronic Mail Distribution

Beverly Hall, Chief
Radiation Protection Section
N.C. Department of Environmental Commerce & Natural Resources
Electronic Mail Distribution

Distribution w/encls: (See page 3)

L. Price

3

Distribution w/encls:

D. Rich, RII
R. Gibson, RII
M. Adams, NMSS
N. Baker, NMSS
PUBLIC

PUBLICLY AVAILABLE NON-PUBLICLY AVAILABLE SENSITIVE NON-SENSITIVE

ADAMS: Yes ACCESSION NUMBER: _____ SUNSI REVIEW COMPLETE

| | | | | | | |
|--------------|-----------|-----------|-----------|-----------|-----------|-----------|
| OFFICE | RII:DFFI | RII:DFFI | RII:DFFI | | | |
| SIGNATURE | /RA/ | /RA/ | /RA/ | | | |
| NAME | OLopez | RPrince | RGibson | | | |
| DATE | 8/24/2009 | 8/24/2009 | 8/25/2009 | 9/ /2009 | 9/ /2009 | 9/ /2009 |
| E-MAIL COPY? | NO | NO | YES | YES NO | YES NO | YES NO |

OFFICIAL RECORD COPY DOCUMENT NAME: C:\DOCUMENTS AND SETTINGS\KPM\LOCAL
SETTINGS\TEMPORARY INTERNET FILES\CONTENT.OUTLOOK\LODNK2K6\2009-005.DOC

NOTICE OF VIOLATION

Global Nuclear Fuel - Americas, L.L.C.
Wilmington, NC

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

During an NRC inspection conducted July 20 - 30, 2009, a violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

Safety Condition No. S-1 of Special Nuclear Material License No. 1097 requires that material be used in accordance with statements, representations, and conditions of application dated and supplements dated June 29, 2007; February 14, 2008; November 28, 2008 and January 8, 2009.

Section 7.8 of the License Application states that GNF-A's fire protection system is designed in accordance with the applicable NFPA.

NFPA 13, Standard for the Installation of Sprinkler Systems, requires that sprinklers shall be installed under fixed obstructions over 4 ft wide such as ducts, decks, open grate flooring, cutting tables, and overhead doors.

Contrary to the above, prior to July 24, 2009, the licensee failed to install sprinklers under a fixed ventilation duct over 4 ft wide near the Gadolinia furnace area.

This is a Severity Level IV violation (Supplement VI).

The NRC has concluded that information regarding the reason for the violation, the corrective actions taken and planned to be taken to correct the violation and prevent recurrence, and the date when full compliance will be achieved, is already adequately addressed on the docket in, Inspection Report No. 70-1113/2009-005. However, you are required to submit a written statement or explanation pursuant to 10 CFR 2.201 if the description therein does not accurately reflect your corrective actions or your position. In that case, or if you choose to respond, clearly mark your response as a "Reply to a Notice of Violation," and send it to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001 with a copy to the Regional Administrator, Region II, within 30 days of the date of the letter transmitting this Notice of Violation (Notice).

If you choose to respond, your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. Therefore, to the extent possible, the response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction.

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days.

Dated this 10 day of September 2009

Enclosure 1

SAFETY AND COMPLIANCE INSPECTION REPORT

| | | |
|--|--|---|
| 1. LICENSEE OR CERTIFICATEE/LOCATION INSPECTED: Global Nuclear Fuels - Americas, L.L.C. P.O. Box 780 Wilmington, NC 28402 REPORT NO: 20089-005 | 2. NRC/REGIONAL OFFICE: U.S. Nuclear Regulatory Commission Region II 61 Forsyth Street, Suite 23T85 Atlanta, GA 30303 | |
| 3. DOCKET NUMBER(S): 70-1113 | 4. LICENSE OR CERTIFICATEE NUMBER: SNM-1097 | 5. DATE(S) OF INSPECTION: July 20-30, 2009 |

6. INSPECTION PROCEDURE(S) COMPLETED: 88020,80055, 88035 and 86740

LICENSEE OR CERTIFICATEE: Global Nuclear Fuels – Americas, L.L.C.

The inspection was an examination of the activities conducted under your license or certificate as they related to safety and/or safeguards and to compliance with the Nuclear Regulatory Commission (NRC) rules and regulations and the conditions of your license or certificate. The inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observation by the inspector. The inspection findings are as follows:

- 1. Based on the inspection findings, no violations were identified.
- 2. Previous violation(s) closed.
- 3. Reported events reviewed
- 4. The violation(s), specifically described to you by the inspector as non-cited violations, are not being cited because they were non-repetitive, licensee-identified, and corrective action was being taken, and the remaining criteria in the NRC Enforcement Policy to exercise discretion were satisfied.

Non-Cited Violation(s) was/were discussed involving the following requirement(s) and Corrective Action(s):

- 5. During this inspection certain of your activities, as described below and/or attached, were in violation of NRC requirements and are being cited. This form is a NOTICE OF VIOLATION, which may be subject to posting in accordance with 10 CFR 19.11.

(Violations and Corrective Actions)

(See attached Notice of Violation)

Statement of Corrective Actions

I hereby state that, within 30 days, the actions described by me to the inspector will be taken to correct the violations identified. This statement of corrective actions is made in accordance with the requirements of 10 CFR 2.201 (corrective steps already taken, corrective steps which will be taken, date when full compliance will be achieved). I understand that no further written response to NRC will be required, unless specifically requested.

| Title | Printed Name | Signature | Date |
|-----------------------|---------------------------------|-----------|------------|
| LICENSEE/CERTIFICATEE | | | |
| NRC INSPECTOR | Omar R. López and Robert Prince | /RA/ | 08/24/2009 |

**DOCKET FILE INFORMATION
SAFETY AND COMPLIANCE INSPECTION REPORT**

| | | | |
|--|--|---|--|
| 1. LICENSEE OR CERTIFICATEE/LOCATION INSPECTED: Global Nuclear Fuels - Americas, L.L.C. P.O. Box 780 Wilmington, NC 28402 | | 2. NRC/REGIONAL OFFICE: U.S. Nuclear Regulatory Commission Region II 61 Forsyth Street, Suite 23T85 Atlanta, GA 30303 | |
| REPORT NO: | 2009-005 | | |
| 3. DOCKET NUMBER(S): 70-1113 | 4. LICENSE OR CERTIFICATEE NUMBER: SNM-1097 | 5. DATE(S) OF INSPECTION: July 20-30, 2009 | |

6. INSPECTOR(S): Omar R. López, Robert Prince, and Sandra Mendez-Gonzalez (In-training)

7. INSPECTION PROCEDURES USED: 88020,80055, 88035 and 86740

SUPPLEMENTAL INSPECTION INFORMATION

EXECUTIVE SUMMARY

Summary of Plant Status

The Global Nuclear Fuels Americas L.L.C (GNF-A) converts uranium hexafluoride into uranium dioxide for fabrication into low-enriched fuel for use in commercial nuclear power reactors. During the inspection period, normal production activities were ongoing. This routine, announced inspection evaluated the fire protection, radioactive waste management, and transportation programs. The inspection involved observation of work activities, a review of selected records, and interviews with plant personnel. The inspection identified the following aspects of the licensee programs as outlined below:

Fire Protection (IP 88055)

- The inspectors toured the Dry Conversion Process (DCP) and Fuel Manufacturing Operations (FMO) Building and noted that the areas were operated in accordance with fire safety requirements. The inspectors reviewed the licensee's control of combustibles/flammable materials and ignition sources. No findings of significance were identified.
- The inspectors reviewed maintenance records and walked down selected components of the fire detection system in the DCP and HF Building. The inspectors noted that the reviewed components were properly implemented and maintained. The reviewed components included smoke, heat, and hydrogen detectors. No findings of significance were identified.
- The inspectors walked down passive fire protection features in the DCP. The inspectors noted that fire doors and fire dampers were in good conditions, and penetrations in fire walls were sealed. The inspectors also observed the licensee performing an inspection of a fire door. No findings of significance were identified.
- The inspectors verified with one exception, that sprinkler systems in the FMO area were not obstructed, that the water supply to the system was readily available with correct valve positioning and pumping capability, and that there was not visual evidence of physical degradation.

Executive Summary (Cont.)

However, during the walk down of the sprinkler system in the Gadolinia process area, the inspectors identified four sprinklers that appeared to be blocked by ventilation ducts near the furnace area. The inspectors determined that the sprinkler system in the Gadolinia furnace area was not in compliance with the requirements of NFPA 13 regarding obstruction to sprinkler discharge and spray pattern development. In response to the inspectors' concerns, the licensee performed a detailed evaluation of the sprinkler system in the Gadolinia process area. The licensee agreed that four sprinkler heads above the furnace were blocked/obstructed per NFPA requirements. Section 7.8 of the License Application states that GNF-A's fire protection system is designed in accordance with the applicable NFPA. NFPA 13, Standard for the Installation of Sprinkler Systems, requires that sprinklers shall be installed under fixed obstructions over 4 ft wide such as ducts, decks, open grate flooring, cutting tables, and overhead doors. The failure to install sprinklers underneath the ventilation ductwork near the Gadolinia furnace was considered a violation of NRC requirements (VIO 70-1113/2009-05-01).

As a corrective action, the licensee developed a plan to achieve proper sprinkler coverage by installing additional sprinklers underneath the ductwork near the furnace. The licensee estimated that the modifications will be completed by October 9, 2009.

- The inspectors walked down fire hoses and fire extinguishers in the DCP and FMO. The inspectors noted that fire extinguishers were readily available and rated for the correct fire scenarios. No findings of significance were identified.
- The inspectors reviewed the integrated safety analysis (ISA) to verify that credible fire related scenarios were identified. The inspectors noted that accident sequences 1.4 and 110.7 evaluated the potential of overheating and rupturing a UF₆ cylinder during a fire. The licensee assigned a severity ranking of 3 and an unmitigated likelihood of 0 to both accident sequences. Based on the licensee's ISA methodology, a severity ranking of 3 corresponded to an accident that could result in a high consequence event as described in 10 CFR 70.61 and an unmitigated likelihood of 0 corresponded to an accident that is considered not credible. The inspectors questioned whether or not the use of an unmitigated likelihood of 0 for these accident sequences was adequate. The inspectors noted that the licensee's ISA methodology requires that for an accident sequence to be considered not credible, it must represent process deviations for which there is a sound argument, based on physical laws or sound engineering/technical data that the deviations are not possible, or are extremely unlikely. The validity of the argument must be independent of any feature, design, or materials controlled by a system of safeguards or IROFS, or of management measures. Based on walk downs of the process areas and interviews with licensee personnel, the inspectors determined that the licensee was relying on control of combustibles and flammable materials to prevent a fire of significance size that could challenge the integrity of a UF₆ cylinder. 10 CFR 70.61(b) states, in part, that the risk of each credible high-consequence event must be limited. Engineered controls, administrative controls, or both, shall be applied to the extent needed to reduce the likelihood of occurrence of the event so that, upon implementation of such controls, the event is highly unlikely. 10 CFR 70.61(e) states, in part, each engineered or administrative control or control system necessary to comply with paragraphs (b) of this section shall be designated as an item relied on for safety.

At the time of the inspection the licensee did not have sufficient information to support the use of an unmitigated likelihood of 0 without relying in a system of safeguards or IROFS, or of management measures. This issue will be tracked as unresolved item (URI 70-1113/2009-05-02), pending further review of licensee analyses supporting an unmitigated likelihood of 0 for accident sequences 1.4 and 110.7.

Radioactive Waste Management (IP 88035)

- The inspectors interviewed responsible personnel concerning the inventory and management of onsite radioactive material. The inspectors noted that responsible personnel adequately maintained a current inventory of the various types of radioactive material in storage and that the inventory accurately reflected radioactive material storage locations. Responsible personnel maintained an updated inventory that tracked the amount of uranium present on site.
- The inspectors observed radioactive material storage and staging areas. The inspectors noted that uranium bearing radioactive material in storage consisted primarily of combustible materials packaged in wooden boxes that served as feed material to the onsite incinerator, non-combustible materials in metal containers, and 3-gallon cans containing incinerator ash material. The inspectors noted that the licensee had made a significant reduction in the amount of onsite legacy radioactive material over the last 18 months. The licensee had reduced the number of legacy can scrap and combustible waste material containers by approximately 35% and 40% respectively, over this period.
- The inspectors observed the operation and daily performance checks for the radioactive material assay system. The inspectors interviewed personnel regarding equipment operation and maintenance and determined that personnel were knowledgeable of equipment operating procedures and acceptance criteria. The inspectors reviewed associated operating procedures and equipment operability records and found that equipment was adequately maintained.
- Procedures adequately described the responsibilities and roles of personnel responsible for the preparation, packaging, and transport of radioactive waste shipments.
- Selected radioactive waste shipment manifests were reviewed for completeness and accuracy. Manifests correctly reflected the classification, quantity, and labeling requirements for the respective shipment. Discussions with personnel responsible for certifying that waste shipments are prepared in accordance with DOT regulatory requirements and disposal site waste acceptance criteria indicated that personnel were knowledgeable of their responsibilities and regulatory requirements.

Transportation (IP 86740)

- The inspectors observed activities associated with the preparation and transport of empty UF₆ cylinders and new fuel shipments. The inspectors observed personnel while they loaded new fuel containers on transportation vehicles and secured the shipping containers for transport. Radiation and contamination levels were verified to be in accordance with DOT shipping limits. The inspectors interviewed personnel responsible for these activities and noted that responsible personnel were knowledgeable of their responsibilities and procedural requirements associated with the transportation of this material. The inspectors observed transport vehicles and shipping containers for proper labeling and placarding. No findings of significance were identified.
- The inspectors reviewed radioactive material shipment manifests for completeness and accuracy. The inspectors found that manifests correctly reflected the classification, quantity, and labeling requirements for the respective shipment. The inspectors interviewed personnel and determined that personnel responsible for certifying that shipments are prepared in accordance with DOT regulatory requirements were knowledgeable of their duties and associated regulatory requirements.
- The inspectors reviewed the most recent audit of the Shipping and Traffic group. The inspectors noted that audit findings included low-threshold items and that findings were entered into the licensee's corrective action program for tracking and closure. No findings of significance were identified.
- The inspectors reviewed training and qualification records for individuals responsible for authorizing and preparing shipping manifests and certifying that shipments meet regulatory requirements. Training records

were current and adequately covered DOT and associated regulatory training requirements.

Event Follow-Up (44892)

- The inspectors reviewed the licensee's response associated with an industrial shipping incident containing UF₆ that occurred on March, 5, 2009. The licensee sent a two-person team to the Port of Baltimore to review the circumstances associated with the event. During the off loading of a 20-foot flatrack containing four loaded Type A fissile UX-30 packages, a crane attachment at one end of the flatrack was not properly engaged, resulting in a false indication to the crane operator that the load was secured. During movement of the flatrack the attachment point released causing the flatrack to rotate in a downwards direction impacting a loaded flatrack also containing UX-30 packages. The event resulted in minor damage to an overpack that was struck. The integrity of the UX-30 package was not compromised as a result of the incident. The cause of the event was a faulty mechanical locking device that failed to engage at one of four engagement pins. The mechanical failure of the cradle lifting rig itself resulted in an inaccurate sensor indication to the crane operator. Responsible parties stated to licensee personnel that this was a rare event. The Port of Baltimore had the lead role in the evaluation of the event and the licensee had no additional corrective actions planned. This event is closed.

Exit Meeting Summary

- The inspection scope and results were summarized on July 24, and July 30, 2009, with licensee management. On August 19, 2009, a re-exit meeting was conducted to further discuss the inspection findings. No dissenting comments were received. Proprietary information was discussed but not included in the report.

List of Items Opened, Closed, Discussed

| <u>Item Number</u> | <u>Status</u> | <u>Type</u> | <u>Description</u> |
|-------------------------|---------------|-------------|--|
| 70-143/2009-05-01 | Open | VIO | Fire sprinkler system not in accordance with NFPA 13 in the Gadolinia process area. |
| 70-143/2009-05-02 | Open | URI | Review of licensee's analysis supporting an unmitigated likelihood of 0 for accident sequences 1.4 and 110.7. |
| VIO 70-1113/2006-202-01 | Closed | VIO | Failure to perform adequate maintenance on exterior criticality alarm horns in the criticality warning system. This violation is administratively closed based upon previous closure in IR 70-1113/2007-201. |
| VIO 70-1113/2006-202-02 | Closed | VIO | Failure to maintain criticality alarm horn audibility in the dry conversion process area. This violation is administratively closed based upon previous closure in IR 70-1113/2007-201. |
| EN 44892 | Closed | EN | Industrial shipping incident containing UF ₆ . |