UNITED STATES



NUCLEAR REGULATORY COMMISSION

REGION II SAM NUNN ATLANTA FEDERAL CENTER 61 FORSYTH STREET, SW, SUITE 23T85 ATLANTA, GEORGIA 30303-8931

May 12, 2005

Global Nuclear Fuels - Americas, L.L.C. ATTN: Mr. J. D. Fuller, Chief Executive Officer and Facility Manager P. O. Box 780 Wilmington, NC 28402

SUBJECT: NRC INSPECTION REPORT NO. 70-1113/2005-02

Dear Mr. Fuller:

This report refers to the inspection conducted on April 18-22, 2005, at the Wilmington facility. The areas of maintenance and surveillance testing, environmental protection, and fire safety were reviewed. The purpose of the inspection was to determine whether activities authorized by the license were conducted safely and in accordance with United States Nuclear Regulatory Commission (NRC) requirements. At the conclusion of the inspection, the findings were discussed with those members of your staff identified in the enclosed report.

Areas examined during the inspection are identified in the report. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observation of activities in progress.

Based on the results of the inspection, no violations or deviations were identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and 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. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction.

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

Sincerely,

/**RA**/ Jay L. Henson, Chief Fuel Facility Inspection Branch 2 Division of Fuel Facility Inspection

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

Enclosure: (See page 2)

GNF-A

Enclosure: NRC Inspection Report

cc w/encl: Charles M. Vaughan, Manager Facility Licensing Global Nuclear Fuel - Americas, L.L.C. P. O. Box 780, Mail Code J26 Wilmington, NC 28402

Beverly Hall, Director **Division of Radiation Protection** N. C. Department of Environmental Health & Natural Resources **Electronic Mail Distribution**

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.:	70-1113
License No.:	SNM-1097
Report No.:	70-1113/2005-002
Licensee:	Global Nuclear Fuel - Americas, LLC
Facility:	General Electric
Location:	Wilmington, NC 28402
Date:	April 18-22, 2005
Inspectors:	M. Crespo, Fuel Facility Inspector, RII J. Jimenez, Fuel Facility Inspector, RII
Approved By:	J. Henson, Chief Fuel Facilities Branch 2 Division of Fuel Facility Inspection

EXECUTIVE SUMMARY

Global Nuclear Fuel - Americas NRC Inspection Report 70-1113/2005-002

This routine announced inspection involved observation and evaluation of the licensee's programs for maintenance and surveillance testing, fire protection and environmental protection. The inspection identified the following aspects of the licensee's programs:

Maintenance and Surveillance Testing

- The observed maintenance activities were properly performed according to their procedures and permits (Paragraph 2.a).
- The licensee adequately controlled maintenance work through use of the work order system. Planned work orders were properly authorized and signed (Paragraph 2.b).
- The licensee's maintenance personnel were experienced and demonstrated adequate knowledge of safety controls of the process equipment (Paragraph 2.c).
- The licensee adequately tracked and recorded surveillance activities important to safety (Paragraph 2.d).
- The licensee had adequately performed the calibrations for the cold trap scales and the nitrogen pressure switch (Paragraph 2.e).

Environmental Protection

- The licensee modifications to the environmental sampling procedures were adequately reviewed and maintained an acceptable level of accuracy (Paragraph 3.a).
- The licensee adequately audited the environmental protection program (Paragraph 3.b).
- The licensee adequately performed the sampling and analysis procedures for air and ground water samples (Paragraph 3.c).

Fire Safety

- The fuel processes, equipment, and material storage areas were operated in accordance with fire safety requirements. The fire protection program organization had not changed since the last inspection (Paragraph 4.a).
- Records for the inspection, testing, and maintenance for selected fire protection systems were adequately maintained. The observed fire protection system were adequately maintained to ensure their safety performance (Paragraph 4.b).
- The licensee's emergency response team was trained to perform its emergency response functions. Off-site organizations were available to provide aid in the event of a major emergency or structural fire (Paragraph 4.c).

• The fire drills provided challenging scenarios adequate for maintaining the team's ability to deal with a fire emergency. The Pre-Fire Plan was adequately implemented in the licensee training program for plant personnel and off-site support agencies (Paragraph 4.c).

<u>Attachment:</u> Persons Contacted Inspection Procedures List of Items Opened, Closed, and Discussed List of Acronyms

REPORT DETAILS

1. <u>Summary of Plant Status</u>

This report covered a five-day period. Powder, pellet, and fuel assembly production were shutdown for the annual inventory period. Maintenance activities were being conducted throughout the facility.

2. <u>Maintenance and Surveillance Testing (Inspection Procedure (IP) 88025)</u>

a. <u>Conduct of Maintenance (F1.01)</u>

(1) Inspection Scope and Observations

The inspector observed maintenance work performed in the Dry Conversion Process (DCP) area to verify that maintenance procedures and any special work permits were implemented. The inspector observed maintenance personnel perform several maintenance activities, including the installation of the new blender feed system for line 2. The inspector noted that the maintenance personnel properly implemented the hot work permits for the wielding portion of job. The inspector also noted that the maintenance personnel were familiar with the procedures for making the modifications to the equipment. The inspector also noted that the DCP operators were properly informed of the work performed.

(2) <u>Conclusion</u>

The observed maintenance activities were properly performed according to their procedures and permits.

- b. <u>Work Control Procedures (F1.02)</u>, Work Control Authorization (F1.03), Management Audit of Maintenance (F1.05)
- (1) Inspection Scope and Observations

The inspector reviewed the work orders and change request forms for the modifications to the line 2 blender to verify the authorizations of the work. Radiation protection, nuclear safety engineering, area managers, and process engineers had given their approvals prior to the start of work. The inspector discussed the work order and change request system with the acting maintenance manager. No issues were noted with the implementation of the authorizations for maintenance work. The inspector noted that the work order system acted as management's audit of the maintenance program (no formal audit of the maintenance program was performed by the licensee).

The inspector attended the morning shutdown meetings. The meetings were held to discuss the licensee's maintenance plans with the managers and maintenance personnel. The inspector noted adequate focus on safety for completing the maintenance projects discussed. The meetings also provided a communication route for the workers if any issues were noted from the previous day.

The inspector also reviewed selected post-maintenance activities. The inspector noted adequate post-maintenance testing of equipment important to safety following the completion of maintenance work. No issues were noted.

(2) <u>Conclusion</u>

The licensee adequately controlled maintenance work through use of the work order system. Planned work orders were properly authorized and signed.

c. Qualifications of Maintenance Personnel (F1.04)

(1) Inspection Scope

The inspector interviewed maintenance personnel regarding work experience to verify their qualification for the jobs performed. The inspector noted that maintenance personnel (both licensee employees and contractors) were very knowledgeable of safety controls. They were also knowledgeable of the personnel protective equipment (respirators, etc.) required for their systems. The inspector noted that the maintenance personnel were familiar with the work authorization procedures. No issues were noted.

(2) <u>Conclusion</u>

The licensee's maintenance personnel were experienced and demonstrated adequate knowledge of safety controls of the process equipment.

- d. <u>Surveillance Testing (F1.06)</u>
- (1) Inspection Scope and Observations

The inspector reviewed the records for several surveillance activities important to safety that maintenance personnel and operators in DCP were required to perform. No issues were noted with the records. The licensee tracked recurring maintenance work on a computer system called Maximo. The system would notify the maintenance planners to issue work orders to perform the test prior to the deadlines. If a required maintenance action became overdue, the Fuel Business System would prevent the movement of material in that process area. The inspector observed a demonstration of the Maximo program and noted no issues.

(2) <u>Conclusion</u>

The licensee adequately tracked and recorded surveillance activities important to safety.

- e. <u>Calibrations of Equipment (F1.07)</u>
- (1) Inspection Scope

The inspector observed the calibration of the cold trap scales and the nitrogen pressure switch (designed to prevent backflow into the nitrogen supply). The inspector noted adequate detail in the procedures to conduct the calibrations as well as adequate

acceptance criteria to determine if the equipment could be returned to service. No issues were noted during the tests, and the licensee personnel were knowledgeable of the tasks they were assigned.

(2) <u>Conclusion</u>

The licensee adequately performed the calibrations for the cold trap scales and the nitrogen pressure switch.

3. Environmental Protection (IP 88045)

a. Program/Procedure Changes (R2.01)

(1) Inspection Scope and Observations

The inspector reviewed the methodology used to modify environmental sampling procedures at the facility. The inspector noted that the modifications were properly reviewed by the environmental engineer and the manager of Site Environment, Health and Safety. The inspector also noted that personnel that could be tasked to implement the modified procedures were promptly trained on the differences. The inspector noted that the modifications to the sampling program maintained an adequate level of accuracy. No issues were noted.

(2) <u>Conclusions</u>

The licensee modifications to the environmental sampling procedures were adequately reviewed and maintained an acceptable level of accuracy.

- b. Internal Audits, Inspections and Controls (R2.02)
- (1) Inspection Scope and Observations

The inspector reviewed the results of several of the licensee's internal audits of the environmental protection program from 2004 and 2005. The inspector found the audits to be detailed in their observations. Findings from the audits were captured in the licensee's computerized audit tracking system. The system tracked actions for the findings up to final disposition. No issues were noted in the licensee's review or tracking of corrective actions.

(2) <u>Conclusions</u>

The licensee adequately audited the environmental protection program.

(1) Inspection Scope and Observations

The inspector observed licensee personnel obtain stack air samples and ground water samples. The inspector noted that the licensee used appropriate procedures for collecting the samples. The licensee personnel also took appropriate care of the samples during transport to the Chemet Lab. No issues were noted, and the samples were noted to have been taken at the appropriate frequency. No issues were noted.

The inspector observed the licensee perform the analytical measurements of groundwater samples in the Chemet Lab. The inspector noted that the appropriate procedures were used to process the samples. The inspector also noted that the lab personnel properly calibrated the instruments prior to measuring the samples. The inspector found the lab personnel to be knowledgeable of their position and requirements. The inspector also found that the computer system used to input samples automatically sent notifications to the appropriate licensee personnel if a inputted sample result exceeded the administrative limit. The inspector noted that no groundwater samples were out of tolerance for 2004 and the first quarter of 2005. No issues were noted with the licensee's monitoring program.

(2) <u>Conclusions</u>

The licensee adequately performed the sampling and analysis procedures for air and ground water samples.

d. Follow-up on Previously Identified Issues (R2.07)

The inspector reviewed the licensee's status of calcium fluoride removal. The inspector noted that most of the material had been shipped to an authorized waste disposal facility for disposition. The remaining amount occupied only a portion of one of the warehouses dedicated to the storage of the material. The licensee expected to begin remediation of the South lagoon in May. No issues were noted with the licensee's decommissioning activities.

(Closed) Deviation (DEV) 70-1113/2005-01-01 - Failure to Replace All the Hunt Valves in GNF-A Owned Cylinders by September 1, 2004. The inspector reviewed the licensee's actions to address the notice of deviation involving the failure to replace all the Hunt valves in GNF-A owned cylinders. The inspector reviewed the uranium hexafluoride cylinders on site and did not find any GNF-A cylinders equipped with a Hunt valve. During the inspection period, the licensee informed the inspector that a full GNF-A owned cylinder equipped with a Hunt valve was at the Westinghouse Columbia plant. GNF-A was negotiating with Westinghouse on how to obtain the cylinder and replace the Hunt valve at the time of the inspection. The inspector had no issues with actions being pursued by the licensee to address the issue, therefore DEV 70-1113/2005-01-01 is closed.

4. Fire Safety (IP 88055)

a. <u>Fire Protection Program Management/Organization (O4.01); Fire Safety of Process,</u> Equipment, and Storage Areas (O4.04)

(1) <u>Scope and Observations</u>

The inspector reviewed the DCP, the hydrofluoric acid (HF) building, the ceramics area, and the material storage areas to verify that they were operated in accordance with fire safety requirements. The inspector reviewed the licensee's procedure for control of combustible materials in process areas and interviewed operations personnel regarding the application and use of the procedure. No issues were noted. The inspector also verified that flammable liquids were properly stored in designated cabinets. The inspector observed that transient combustibles in the operating process areas were adequately controlled to levels below that which could result in a significant fire. The inspector walked down plant areas surrounding the fuel manufacturing operation building and noted that the surroundings were kept free of significant amounts of transient combustibles large enough to be a fire exposure hazard.

The inspector reviewed the operation of the sintering furnaces. The inspector observed that the fire safety systems in the furnaces were properly operating, and flame detectors were properly positioned. The inspector discussed the organization of the fire protection program with the Chief of the Emergency Response Team. The Chief stated that no organizational changes had occurred since the last inspection. No safety concerns were noted.

(2) <u>Conclusion</u>

The fuel processes, equipment, and material storage areas were operated in accordance with fire safety requirements. The fire protection program organization had not changed since the last inspection.

b. <u>Review of Documentation Related to the Fire Protection Program (O4.02); Building</u> <u>Design, Construction, and Ventilation System (O4.03); Fire Protection Systems (O4.05);</u> <u>Fire Hazard Analysis and Integrated Safety Analysis (ISA) (O4.06)</u>

(1) <u>Scope and Observations</u>

The inspector reviewed the ISA for the DCP and the HF building, and walked down fire safety systems referenced in the ISA. The inspector examined selected fire safety systems to verify they were being maintained in proper condition for use. The inspector observed a selection of fire safety features that were described in the ISA including but not limited to: hydrogen detectors, fire dampers, smoke and heat detectors, and wall penetrations. The inspector also observed portable extinguishers through the plant site. Portable extinguishers were charged to the normal operating zones and no visible

damage was noted. The inspector accompanied a licensee technician during a visual inspection of fire extinguishers and no problems were noted. The inspector also observed fire doors through the facility and found them clear of debris and in proper working condition.

The inspector reviewed selected fire protection inspection, testing, and maintenance records provided by the licensee and the licensee's insurer. No problems were identified with the records, which included observations and inspections of fire doors and dampers, emergency lights, sprinkler systems, smoke detectors, fire hose stations, post indicator valve, diesel pumps, alarm system, fire truck, hydrogen detectors, and the fire protection water system.

(2) <u>Conclusion</u>

Records for the inspection, testing, and maintenance for selected fire protection systems were adequately maintained. The observed fire protection system were adequately maintained to ensure their safety performance.

- c. <u>Pre-Fire Plan (O4.07); Emergency Response Team Training (O4.08); Fire Emergency</u> Drills (O4.09); Off-Site Support (O4.10)
- (1) <u>Scope and Observations</u>

The inspector discussed the emergency response team and training program with the emergency response team chief, and reviewed initial and continuing training records, including monthly training, for members of the emergency response team. The inspector verified that the members of the emergency response team were current on their required training and that a sufficient number of fire brigade members were qualified to perform their emergency response functions. Some of the trainees, whose qualifications were kept current, came from off-site support agencies such as the County's Police Department and Fire Station. Personnel that work for these agencies were interviewed to verify their familiarity with the site and the hazards present at the facility.

The majority of the fire drills were conducted in conjunction with the Fire Brigade basic training or refresher. The inspector interviewed personnel that had participated in the most recent fire drill as well as the person in charge of creating the emergency scenario. The fire brigade team members interviewed explained with clarity the scenario for the drill including initiating conditions, mitigating actions taken due to the circumstances of the fire, and actions needed to assure the safety of plant personnel in case of a real event. The scenario selected for the drill adequately provided the fire brigade members with experience to better prepare them in case of a real emergency at the plant.

The licensee had incorporated its Pre-Fire Plan as part of their training program and communications with off-site support agencies. The records reviewed by the inspector confirmed this information. No issues were found.

(2) <u>Conclusions</u>

The licensee's emergency response team was trained to perform emergency response functions. Off-site organizations were available to provide aid in the event of a major emergency or structural fire. The fire drills provided challenging scenarios adequate for maintaining the team's ability to deal with a fire emergency. The Pre-Fire Plan was adequately implemented in the licensee training program for plant personnel and off-site support agencies.

5. Exit Meeting

The inspection scope and results were summarized on April 22, 2005, with those persons indicated in the Attachment. Although proprietary documents and processes were reviewed during this inspection, the proprietary nature of these documents or processes were deleted from this report. No dissenting comments were received from the licensee.

ATTACHMENT

1. PARTIAL LIST OF PERSONS CONTACTED

Licensee

- M. Allen, Program Manager, Emergency Preparedness & Site Security
- C. Buddin, Manager, Chemet Lab
- R. Crate, Manager, Powder Production
- R. Foleck, Program Manager, Facility Licensing
- D. Godwin, Chief Emergency Response
- N. Holmes, Manager, Global Supply Chain
- H. Knight, Manager, Fuel Components Operations & Site Emergency Director
- L. Paulson, Manager, Nuclear Safety
- R. Roessler, Manager, Facilities
- C. Savage, Fuel Manufacturing Operations Shop Support
- H. Strickler, Manager, Site Environment, Health & Safety
- C. Vaughan, Manager, Facility Licensing

All personnel listed above were present at the exit meeting on April 22, 2005. Other licensee employees contacted included engineers, technicians, production staff, and office personnel.

2. INSPECTION PROCEDURES (IP) USED

IP 88025	Maintenance and Surveillance Testing
IP 88045	Environmental Protection
IP 88055	Fire Protection

3. <u>LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED</u>

<u>ltem</u>	<u>Status</u>	Description		

Closed Failure to Replace All the Hunt Valves in GNF-A Owned Cylinders by September 1, 2004 (Paragraph 3.d).

4. LIST OF ACRONYMS USED

DEV 70-1113/2005-01-01

DCP **Dry Conversion Process** Deviation DEV GNF-A **Global Nuclear Fuels-Americas** HF Hydroflouric acid IP Inspection Procedure Inspection Report IR ISA Integrated Safety Analysis NRC Nuclear Regulatory Commission