



UNITED STATES
NUCLEAR REGULATORY COMMISSION

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

July 26, 2005

Global Nuclear Fuel - 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. 70-1113/2005-004

Dear Mr. Fuller:

This report refers to the inspection conducted from June 27, through July 1, 2005, at your Wilmington facility. The purpose of the inspection was to perform a review of the plant operations program to determine whether activities authorized by the license were conducted in accordance with NRC requirements. At the conclusion of the inspection, the findings and observations were discussed with the members of your staff who are identified in the enclosed report.

The inspection consisted of an examination of activities conducted under the license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of the license. The inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observation of activities in progress within the plant.

Based on the results of the inspection, no violations or deviations were identified. Your activities involving plant operations at the Wilmington facility were found to be conducted safely and in accordance with regulatory requirements.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure 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/

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

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

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

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 PUBLIC

***see previous concurrence**

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 ADAMS: Yes ACCESSION NUMBER: _____

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|--------------|-------------------|--------------|-------------|--------|--------|--------|--------|
| OFFICE | RII:DFFI | RII:DFFI | RII:DFFI | | | | |
| SIGNATURE | DH 7/26/05 | SS 7/26/05 | DAS 7/26/05 | | | | |
| NAME | D. Hartland* | S. Subosits* | D.Seymour* | | | | |
| DATE | /2005 | /2005 | /2005 | /2005 | /2005 | /2005 | /2005 |
| E-MAIL COPY? | YES NO | YES NO | YES NO | YES NO | YES NO | YES NO | YES NO |

U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.: 70-1113

License No.: SNM-1097

Report No.: 70-1113/2005-004

Licensee: Global Nuclear Fuel - Americas, L.L.C.

Location: Wilmington, NC 28402

Dates: June 27, through July 1, 2005

Inspector: D. Hartland, Senior Fuel Facility Inspector

Accompanying Personnel: S. Subosits, Inspector-in-Training

Approved By: J. Henson, Chief
Fuel Facility Inspection Branch 2
Division of Fuel Facility Inspection

Enclosure

EXECUTIVE SUMMARY
Global Nuclear Fuel - Americas, L.L.C.
NRC Inspection Report 70-1113/2005-004

This routine, announced inspection involved observation and evaluation of the licensee's plant operations program. The inspection identified the following aspects of the licensee's program:

Plant Operations

- Unusual occurrences and safety concerns were being identified, communicated to managers, and resolved in a prompt manner (Paragraph 2.a).
- The inspector determined that safety controls identified in the integrated safety analysis and nuclear safety release/requirements were satisfactorily implemented and maintained. Plant management took appropriate action to address deficiencies identified in a procedure used to test safety features on the pellet grinders (Paragraph 2.b).
- The plant activities reviewed were performed safely and in accordance with license requirements. It was noted that housekeeping was adequate to not adversely affect radiological safety or emergency egress in the facility. The licensee initiated appropriate action to address issues related to the implementation of procedure checklists (Paragraph 2.c).
- The licensee's configuration control system for facility modifications ensured that safety significant modifications were properly reviewed, approved, and documented (Paragraph 2.d).
- Fuel manufacturing operations were generally conducted in accordance with approved operating procedures. Licensee management initiated appropriate action to address a weakness in the lack of rigor in implementing operator round sheets (Paragraph 2.e).

Attachment:

Persons Contacted

Inspection Procedures

List of Items Opened, Closed, and Discussed

List of Acronyms

REPORT DETAILS

1. Summary of Plant Status

This report covers one five-day inspection period. During the period, powder and pellet production and fuel assembly proceeded at normal rates.

2. Plant Operations (Inspection Procedure (IP) 88020) (O3)

a. Management and Administrative Practices (O3.01)

(2) Scope and Observations

The inspector interviewed plant personnel and reviewed selected unusual incident reports (UIRs) to verify that problems with implications on safety were identified, effectively communicated to management, and reported in a timely manner. The inspector noted that safety issues were captured in UIRs, and corrective actions were assigned and tracked to completion.

The inspector noted that, in order to close an UIR, the area manager and the product line manager had to review the corrective actions and agree the actions taken were adequate to resolve the problem. The inspector reviewed recent UIRs related to the dry conversion process (DCP). The inspector verified that corrective actions were both adequate and timely.

(2) Conclusions

Safety concerns were being identified, effectively communicated to management, and resolved in a timely manner.

b. Safety Function (O3.02) Maintenance of Nuclear Criticality Safety Systems (O3.07)

(1) Scope and Observations

The inspector toured the vaporization, conversion, dry scrap recycle, and ceramics areas with a process manager and a shift operations team leader to verify that controls were identified and double contingency was provided. The inspector also reviewed the nuclear safety release/requirements (NSR/Rs) for the vaporization and conversion areas to verify that administrative controls and active engineered controls were presented and implemented adequately. The inspector noted no issues with regard to the vaporization and conversion areas and NSR/Rs reviewed.

The inspector observed the performance of a functional test to verify that the pellet grinders stopped on loss of vacuum and high differential pressure across the ventilation filter. The bases for the safety features were to prevent high airborne contamination and the potential loss of mass control for the filter (defense-in-depth).

The inspector observed that the tests were performed safely and that the features actuated as designed. However, the inspector noted that instructions in the procedure did not include a test setup condition to ensure that the grinder was running prior to

initiating the test. Also, a specific step to verify that the grinder tripped as designed, in addition to the existing step that ensured that it could not be restarted, also needed to be included in the procedure. The inspector discussed the issues with licensee management, who intended to revise the test procedure to include the enhancements.

(2) Conclusions

The inspector determined that safety controls identified in the integrated safety analysis and nuclear safety release/requirements were satisfactorily implemented and maintained. Plant management took appropriate action to address deficiencies identified in a procedure used to test safety features on the pellet grinders.

c. Plant Activities (O3.03)

(1) Scope and Observations

The inspector observed activities and housekeeping in the DCP, uranium oxide and gadolinium ceramic areas, and hydrofluoric acid building to assess whether they were performed safely and in accordance with license requirements.

The inspector noted that nuclear criticality safety postings, radiological placards, and procedures were properly posted or available to the operators. The inspector also observed proper criticality safety spacing controls in material storage locations throughout the DCP area. The inspector did not observe any issues where the housekeeping could have adversely affected radiological safety or emergency egress in the facility. The inspector observed that plant personnel working in plant areas requiring respirators wore the respiratory protection equipment as required.

The inspector observed activities and interviewed the operators in the DCP control room. The inspector observed operator shift turnover in the control room and the turnover conducted by shift operations resource counterparts. The operators demonstrated satisfactory knowledge of the safety systems involved in the operation of the DCP area. The inspector noted that operators complied with approved NSR/R limits and controls in the operating procedures for the vaporization and conversion processes.

However, while observing operators remove a cylinder from a vaporizer, the inspector noted that the operators filled out the checklist after the activity was completed. The inspector observed that the specific steps included on the checklist were performed as required but discussed with plant management the practice of completing it after the fact. The licensee indicated that, since the activity was repetitive in nature, the checklist was intended to be used as an operator aid. In response, the licensee indicated it would revise affected procedures so that it was clearly understood which checklists were operator aids rather than required to be used "in-hand."

The inspector also noted that the checklist included an “independent” verification from a second operator that the cylinder valve was open prior to applying heat to the cylinder. The inspector observed that the verification by the second operator was not independent, as he observed the first operator opening the valve. The inspector discussed this observation with licensee, who indicated that a “concurrent” verification was intended and would revise the checklist accordingly.

(2) Conclusions

The plant activities reviewed were performed safely and in accordance with license requirements. It was noted that housekeeping was adequate to not adversely affect radiological safety or emergency egress in the facility. The licensee initiated appropriate action to address issues related to the implementation of procedure checklists.

d. Configuration Control (O3.04)
Nuclear Criticality Safety Change Control (O3.05)

(1) Scope and Observations

The inspector reviewed a facility modification to piping and instrumentation in the vaporization process area to verify that the safety significant modification was reviewed, approved, and documented according to licensee procedures. The inspector walked down the modification in the field and verified the as-built configuration versus the modification package.

The inspector discussed and reviewed with the instrumentation controls engineer the change request report related to the modification. The inspector verified that the safety controls were incorporated in the respective operating procedure and that the control room and field operators were aware of the changes. The inspector also verified that the safety controls received post-modification testing before they were put in use.

The inspector confirmed that the modification to safety systems was adequately controlled and sufficient reviews were performed before and after installation. The change request report records provided sufficient detail on the scope of the modification.

(2) Conclusions

The licensee’s configuration control system for facility modifications ensured that safety significant modifications were properly reviewed, approved, installed, and documented.

e. Operating Procedures (O3.06)

(1) Scope and Observations

The inspector observed operations throughout the facility and reviewed operating procedures for the vaporization and conversion areas to verify that appropriate procedures were being used. The inspector observed DCP and ceramics operators to

verify that they were in verbatim compliance with operating procedures. The inspector noted that operators were knowledgeable of the operating procedures and nuclear criticality safety requirements in their process areas.

The inspector noted that procedures reviewed identified safety significant controls and addressed process parameters, startup, routine operations, and shutdown (emergency and normal). The inspector also walked down affected systems with selected sections of the operating procedure for the conversion area. No problems were identified.

However, during review of round sheets in the DCP control room, a weakness was noted in performance and review of the round sheets. Recurring off-normal conditions were identified on the round sheets by circles around the affected parameters. Actions to correct the off-normal conditions were not taken, and justification for continued operations was not documented on the round sheets. The inspector noted that the off-normal conditions were non-safety related and were based on process control. However, due to potential for operators to become complacent to off-normal conditions, the inspector discussed the issue with licensee management who initiated action to ensure the off-normal conditions were addressed in a more rigorous manner.

(2) Conclusions

Fuel manufacturing operations were generally conducted in accordance with approved operating procedures. Licensee management initiated appropriate action to address a weakness in the lack of rigor in implementing operator round sheets.

3. Exit Meeting

The inspection's results were summarized on July 1, 2005, with licensee management representatives. Although proprietary documents and processes were occasionally reviewed during the inspection, the proprietary nature of these documents or processes has been deleted from this report. No dissenting comments were received from the licensee.

ATTACHMENTS

1. **PARTIAL LIST OF PERSONS CONTACTED**

- *F. Beaty, I&C Engineer - Technical Resources
- *K. Clark, Manager, Ceramics Operations
- *R. Crate, Manager, Fuel Manufacturing Operations
- M. Fitzpatrick, Shift Leader - Powder Operations
- *A. Mabry, Program Manager, Radiological Engineering
- L. Paulson, Manager, Nuclear Safety
- *E. Saito, Manager, GNF Environmental Health and Safety
- *G. Smith, Manager, FMO Technical Resources & Maintenance
- *H. Strickler, Manager, Site Environment, Health, and Safety
- *C. Vaughan, Manager, Facility Licensing

Other licensee employees contacted included operators, engineers, technicians, maintenance staff, and office personnel.

*Attended exit meeting on July 1, 2005

2. **INSPECTION PROCEDURES (IP) USED**

IP 88020 Regional Criticality Safety Inspection Program

3. **LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED**

None

4. **LIST OF ACRONYMS USED**

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|--------|------------------------------------|
| CFR | Code Of Federal Regulations |
| DCP | Dry Conversion Process |
| GNF-A | Global Nuclear Fuel - Americas |
| IP | Inspection Procedure |
| IR | Inspection Report |
| NRC | Nuclear Regulatory Commission |
| NSR\IR | Nuclear Safety Release\Requirement |
| UIR | Unusual Incident Report |