

SAFETY INSPECTION REPORT AND COMPLIANCE INSPECTION

<p>1. LICENSEE/CERTIFICATE HOLDER Global Nuclear Fuel - Americas, LLC Castle Hayne Road Wilmington, NC 28402</p>	<p>2. NRC/REGIONAL OFFICE US Nuclear Regulatory Commission Spent Fuel Project Office 11555 Rockville Pike Rockville, MD 20852-2738</p>
<p>REPORT NUMBER(S) 71-0254/2006-201</p>	

<p>3. LICENSEE/CERTIFICATE NUMBER(S) 71-0254</p>	<p>4. INSPECTION LOCATION Wilmington, NC</p>	<p>5. DATE(S) OF INSPECTION 12/11 - 15/2006</p>
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The inspection was an examination of the activities conducted under your license as they relate to radiation safety and to compliance with the Nuclear Regulatory Commission (NRC) rules and regulations and the conditions of your license or Certificate of Compliance (CoC). The inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector. The inspection findings are as follows:

- 1. Based on the inspection findings, no violations or nonconformances were identified.
- 2. Previous violation(s) or nonconformance(s) closed.
- 3. The violation(s), specifically described to you by the inspector as non-cited violations, are not being cited because they were self-identified, non-repetitive, and corrective action was or is being taken, and the remaining criteria in the NRC Enforcement Policy, NUREG-1600, to exercise discretion, were satisfied.

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

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

(Violations, Nonconformances, and Corrective Actions)

① 10 CFR 71.131, "Nonconforming materials, parts, or components," states, in part, that the certificate holder shall establish measures to control parts that do not conform to requirements and that these measures include as appropriate, procedures for segregation.

Contrary to the requirements of 71.131, GNF-A did not properly control non-conforming parts in the NPC Powder Pack area in that undocumented nonconforming ICCA lock rings were present on a work bench and in an unmarked cardboard box.

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: **OR**

Written Response requested in 30 days YES NO

TITLE	PRINTED NAME	SIGNATURE	DATE
Certificate Holder	Scott P. Murray	<i>[Signature]</i>	12/15/06
NRC Inspector	Robert R. Temps	<i>[Signature]</i>	12/15/06

SAFETY INSPECTION REPORT AND COMPLIANCE INSPECTION

1. LICENSEE/CERTIFICATE HOLDER

GNFA

REPORT NUMBER(S) 71-0254/2006-201

2. NRC/REGIONAL OFFICE

SFPO

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71-0254

4. INSPECTION LOCATION

Wilmington, NC

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12/11 - 15/2006

(Continued)

located inside the NPC Powder Pack area.

② 10 CFR 71.137, "Audits," states, in part, that the certificate holder shall carry out a comprehensive system of planned and periodic audits to verify compliance with all aspects of the quality assurance program and to determine the effectiveness of the program.

Contrary to the requirements of 71.137, GNFA did not have documented measures in place to assure that all aspects of the GNFA 10 CFR 71, Subpart H, Quality Assurance Program were verified for compliance, and evaluated for effectiveness, through a comprehensive system of planned and periodic audits.

INSPECTOR NOTES COVER SHEET

Certificate Holder (name and address)	Global Nuclear Fuel - Americas, L.L.C. P.O. Box 780 Wilmington, NC 28402-0780
Certificate Holder contact	Scott Murray
Docket No.	071-0254
Inspection Report No.	2006201
Inspection Date(s)	December 11-15, 2006
Inspection Location(s)	Wilmington, NC
Inspectors	Robert Temps, Frank Jacobs, William Bezanson (NRC Contractor)
Summary of Findings and Actions	<p>This inspection involved a review of Global Nuclear Fuel - Americas, LLC (GNF) QA Program implementation at their office in Wilmington, NC. Inspection activities focused on management controls, design activities, fabrication and maintenance controls, and how these activities are being controlled under GNF's NRC-approved QA program. Followup to corrective actions for non-conformances cited in the previous 2002 NRC inspection was also performed.</p> <p>Overall, GNF's activities were found to be in compliance with NRC Part 71 regulations and with GNF's NRC approved QA Program. However, two violations of NRC Part 71 requirements were identified and cited on the Form 591 issued at the exit meeting and as documented in the attached inspector notes.</p>
Lead Inspector Signature/Date	Robert Temps  12/27/06
Inspector Notes Approval Branch Chief Signature/Date	Robert Lewis  12/28/06

INSPECTOR NOTES: IP 86001 WAS USED IN CONJUNCTION WITH APPLICABLE PARTS OF NUREG/CR 6314. INSPECTION RESULTS USING THE NUREG/CR 6314 FORMAT ARE DOCUMENTED BELOW:

4.1.1 Quality Assurance Policy

The team reviewed GNF's QA program to determine the effectiveness of plans and procedures that implement its program. The team inspected GNF's QA program goals, objectives and practices, personnel responsibilities, QA organizational independence, delegations of authority, management involvement, and staffing levels. In the area of quality assurance policy, the team had no findings.

4.1.2 Nonconformance Controls

The team reviewed the procedures controlling the problem identification and corrective action program used by GNF. Discussions were held with QA personnel, and the team also reviewed selected Corrective Action Reports (CARs). GNF's resolution of the issues documented in the various reports was assessed to be appropriate and the reports were closed in a time frame commensurate to their importance. The team identified proper tracking and trending of CAR cause codes and reporting of such in various management documents such as the "Corrective Action Program Management Review GNF-A Quality" report dated May 25, 2006.

With respect to control of nonconforming materials, the team identified a violation regarding 10 CFR 71.131, "Nonconforming materials, parts, or components." This section states, in part, that: "The certificate holder shall establish measures to control parts that do not conform to requirements and that these measures must include, as appropriate, procedures for segregation."

Contrary to the requirements of 71.131, the team identified that GNF did not properly control nonconforming parts in the NPC Powder Pack area. Specifically, GNF placed undocumented nonconforming Inner Containment Canister Assembly (ICCA) lock rings on a work bench and in an unmarked cardboard box located inside the NPC Powder Pack area. Some of the items had a red reject sticker attached, but most had no indication of their actual inspection status.

The team noted this violation was a repeat of a nonconformance identified and cited in the 2002 NRC inspection report. In response to the finding, GNF initiated CAR 42046 and instituted immediate actions such as:

- removal of the nonconforming material from the NPC area
- shut down of the powder pack operations until the issue could be bounded
- issuance of a temporary operating procedure to specify segregation and disposition of nonconforming material
- investigation of container handling areas to ensure no other control problems

The team assessed the immediate actions to be appropriate.

4.1.3 Documentation Controls

The team reviewed GNF's documentation control program to determine the effectiveness of the QA program in controlling quality-related documentation and records. The team reviewed

instructions, procedures, and drawings for adequacy, approval signatures, release by authorized personnel, and availability to personnel. The team reviewed documents such as inspection and test procedures, maintenance and test results, nonconformance reports, QA procedures, and packaging drawings. The team reviewed quality records to assure that they were properly identified, retrievable, controlled, and maintained. In the area of documentation controls, the team had no findings.

4.1.4 Audit Program

The team reviewed GNF's audit program to determine whether plans, procedures, and records were available. The team determined whether GNF scheduled and performed internal QA audits and vendor audits in accordance with approved procedures and checklists; whether qualified, independent, personnel performed the audits; whether GNF management reviewed audit results; and whether GNF took appropriate follow up actions in those areas found to be deficient.

The team reviewed the internal audit schedule for 2006 as contained in a document titled "GNF Quality Internal Audit Plan for 2006" dated January 31, 2006. The team noted that of all the audits scheduled for 2006, only one planned audit, number 06-03, touched on Part 71 activities. Audit 06-03 was titled "GNF-A Compliance With 10 CFR Part 71, Subpart H; Part 21, and Part 20, Appendix G." In reviewing the completed audit report, dated June 28, 2006, the team noted that the audit results focused primarily on Part 21 activities and that only a few of the audit elements dealt with Part 71, Subpart H, requirements. The team reviewed GNF procedures and records for indoctrination, training, qualification, and certification of personnel performing audits and evaluations. The reviewed procedures and records were satisfactory and no findings were identified.

The team identified a violation of 10 CFR 71.137, "Audits," that requires, in part, "The certificate holder shall carry out a comprehensive system of planned and periodic audits to verify compliance with all aspects of the quality assurance program and to determine the effectiveness of the program." Contrary to this requirement, based upon discussion with the GNF-A Quality Manager, and review of past annual QA audit schedules and program administrative requirements, the team determined that GNF did not have any procedural requirements in place to ensure a comprehensive system of planned and periodic audits to verify compliance with all aspects of the quality assurance program, with respect to Part 71 activities, and to determine the effectiveness of the program in the area of Part 71.

4.2.1 Design Development

The team interviewed GNF engineering personnel responsible for the preparation and approval of design documents. All personnel interviewed were able to provide detailed descriptions of the control and review processes for design control activities being performed at GNF. Through discussion and review of documents, the team assessed that GNF's design control process was adequate.

4.2.2 Modifications/Design Changes

The team reviewed selected drawings, procedures and records, and observed selected activities being performed to determine that fabrication and maintenance activities met design commitments and requirements documented in the CoC. No findings were identified and

implementation of the controlling processes was assessed to be adequate.

4.3. Fabrication Controls

The team evaluated the fabrication process to ensure that it was controlled and verifiable from the onset of design through the completion of the manufacturing process. The team reviewed GNF's fabrication controls to verify that all fabrication activities were properly controlled and implemented at its facility as well as at the facilities of its contractors and subcontractors.

It was noted during this inspection, and as stated by GNF personnel, that no RAJ-II or NPC containers were fabricated at the GNF facility. However, as discussed in Section 4.4, the team verified activities pertaining to container maintenance and shipping activities. The various containers inspected by the team were manufactured by approved GNF sub-suppliers. Weld repairs, if required were performed by a GNF (on site) sub-supplier, or returned to the original container manufacturer for repairs.

Although no welding was witnessed during this inspection, the team reviewed a GNF Temporary Operations Procedure Approval Form, Revision 0, dated 05/31/06 (TOP # 2006173) issued for welding trefoil plates to the RAJ-II containers. That review also included the Weld Procedure Specification (WPS-2-P8), supporting Procedure Qualification Records (PQR-2-P8-4 and 2-P8-5), and Welder Qualification Records. In addition, the weld wire traceability requirements were verified. The results of that review and verification indicated the above documents were satisfactory and an inspection of various trefoil welds indicated those welds were satisfactory and complied with applicable welding documentation and AWS, D1.6 requirements. The traceability identification of the weld wire used was satisfactory except for the following observation below.

The RAJ-II Trefoil Welding Traveler, Operation 1, required each welder to record the weld wire heat number on each container traveler. The review of one package that contained 38 Welding Travelers indicated one welder had not recorded the weld wire heat number on 11 of those travelers. GNF tried to contact the welder, but he was temporarily unavailable. GNF obtained copies of the applicable Warehouse's - Weld Wire Issue Log sheet which indicated the correct weld wire was issued. GNF stated they would contact the welder when available and have him review and complete the travelers. The team considered the planned action to be appropriate for the issue.

With no fabrication being performed, the scope of this inspection was limited to a review of a completed manufacturing Data Package (dated 10/31/05) issued by Columbia HI-Tech, for RAJ-II containers, Serial #RA-1332 (outer) and RB-1332 (inner). The data package contained the following documents:

1. CoC dated 10/31/05
2. Assembly Traveler # 11424 which included the following documents:
 - a. Detail/Assembly Traveler
 - b. Manufacturing Plan and Quality Records
 - c. Weld Map
 - d. Welder Record Sheet
 - e. Visual Inspection Report
 - f. Liquid Penetrant Inspection Report

- g. Dimensional Data Sheets
 - h. CTQ Dimensional Inspection Matrix Sheets
 - i. Assembly Traveler Manufacturing Plan and Quality Record
 - j. Detail Assembly Traveler Sheets
3. Certification Records
 4. Non-Conformance Reports (none)
 5. Calibration Records

The results of the data package review indicated that it was complete and accurate, and required that traveler Hold Points (manufacturing/inspection) were completed as required. No significant findings or observations were identified through the review.

The team also reviewed GNF's practices pertaining to the handling and storage of empty or loaded RAJ-II and NPC containers, including handling and storage requirements, procedures, and spare parts. The team's inspection of those requirements indicated the GNF handling and storage requirements were adequately documented and implemented. Equipment (slings, hooks, jib cranes, side loaders, etc.) utilized in the handling of the various containers was in good working order and inspection of the equipment maintenance program and records indicated it was being implemented satisfactorily. The inspection of the shipping and storage areas indicated those areas were clean and orderly. Containers were segregated by type, status (empty, loaded, refurbished, etc.) and adequately identified by the individual container serial number and its present status. Loaded containers were sealed with non-tamper wire seals. Refurbished containers were sealed with non-tamper Mylar seals. The inspection of the container facility indicated it was maintained in a protective environment. The RAJ-II Shipping Container Spare Parts list, Revision 1 was reviewed. That list identified the Stores Item Number and a brief description of the item and when applicable, the licence drawing number and item number. An inspection of the RAJ-II refurbishing area indicated the spare replacement parts (stainless steel cap screws, washers, and heliserts) had been furnished by the original container manufacture. The team concluded that activities concerning packaging handling and storage requirements were properly specified implemented correctly. No significant concerns or observations were made by the team in this area.

4.4 Maintenance Controls

The team reviewed GNF's maintenance requirements, inspection and maintenance procedures, completed maintenance records, and personnel training and qualification records. The team inspected maintenance records to determine whether maintenance materials were procured from approved sources, maintenance material was controlled, and material having specified shelf life was identified and used before expiration. Tools and equipment used in packaging maintenance/refurbishment were also reviewed. One observation was identified with regard to the control of an item in a controlled storage locker outside the NPC powder room wherein the expiration date of a sealing compound with shelf life requirements was not clearly identifiable. GNF took immediate and satisfactory action to address this issue.

The team reviewed GNF's activities regarding refurbishment of RAJ-II and NPC packagings. The team reviewed the various GNF implementing procedures and applicable check sheets to

verify compliance with those documents. An inspection of completed RAJ-II Packing Check Sheets indicated they identified the operation to be performed, acceptance criteria, equipment to be used, labeling, lifting equipment, operation status, and required initials of the person(s) performing those operations. The team determined that test and inspection requirements were adequately documented and implemented.

The team reviewed controls for tools and equipment use in the refurbishment, loading (new fuel rods or powder) handling, storage and shipping of RAJ-II and NPC containers. The tools and equipment observed being used during this inspection were observed to be in good condition and calibrated when required. The inspection of torque wrenches being used indicated they were calibrated and complied with the acceptable torque range. No significant observations or findings were noted during as a result of this review.

The team reviewed GNF's maintenance (RAJ-II and NPC containers) requirements, inspection and maintenance procedures. Completed maintenance records, and personnel training and qualification records were reviewed. The team observed various maintenance activities being performed. The RAJ-II Shipping Container Spare Parts list was reviewed to determine if the refurbishing spare part' storage locations had the correct parts. In the area of maintenance activities the team had no significant observations or findings.

The team also reviewed various GNF operational controls and procedures to determine if they addressed the requirements specified in 10 CFR 71.87, "Routine determinations." The following GNF procedure and related documentation for RAJ-II containers RA 2332, RB 2209, RA 2249 and RB 1094 were reviewed to determine compliance with the Routine Determination requirements:

- Procedure OP 1050.70 , Fuel Bundle Packing
- Procedure OP 2000.05, Fuel Bundles in RA Containers
- Exhibit 10 RAJ-II Packing Check Sheets
- Delivery to Shipping and Memo of Shipment
- Straight Bill of Lading
- Radioactive Materials Packing and Shipping Records
- Nuclear Material Transaction Reports
- Load Manifest Checklist
- Final Shipment Release Review
- Radioactive Labeling

The inspection results indicated GNF had addressed and implemented the 10 CFR 71.87 Routine Determination requirements.