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

May 4, 2001

Global Nuclear Fuel - Americas, L.L.C.
ATTN: Mr. Jack Fuller
Chief Executive Officer
P. O. Box 780
Wilmington, NC 28402

SUBJECT: NRC INSPECTION REPORT NO. 70-1113/2001-03 AND NOTICE OF VIOLATION

Dear Mr. Fuller:

This report refers to the inspection conducted on April 2 - 6, 2001, at the Wilmington 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, 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, some of your activities appeared to be in violation of NRC requirements, as specified in the enclosed Notice of Violation (Notice). However, the NRC has concluded that information regarding the reason for the violations, the corrective actions taken and planned to correct the violation and prevent recurrence is already adequately addressed in this Inspection Report (70-1113/2001-03). Therefore, you are not required to respond to this letter unless the description therein 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 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosures will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/NRC/ADAMS/index.html (the Public Electronic Reading Room).

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

Sincerely,

/RA/

Edward J. McAlpine, Chief
Fuel Facilities Branch
Division of Nuclear Materials Safety

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

Enclosures: 1. Notice of Violation
2. NRC Inspection Report

cc w/encls:
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NOTICE OF VIOLATION

Global Nuclear Fuel - Americas
Wilmington Fuel Manufacturing Operation

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

During an NRC inspection conducted on April 2 - 6, 2001, a violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedures for NRC Enforcement Actions," NUREG-1600, 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 in the License Application dated June 5, 1997, and supplements thereto.
>
> Section 5.2 of the License Application indicates that special radiation control requirements for non-routine operations are implemented through Radiation Work Permits as described in documented plant practices.
>
> Paragraph 6.1.4.1 of the License Application indicates that nuclear criticality safety requirements may be made available to work stations through procedures and postings, including the placement of signs or marking of floor areas to designate approved storage areas.
>
> Section 3.9 of the License Application requires that activities be conducted in accordance with properly issued and approved plant practices and procedures.
>
> Contrary to the above, on April 3, 2001, activities were not being conducted in accordance with approved plant practices during the disassembly and cleaning of a pellet press in that: 1) the area was not roped off with warning signs posted as required by the approved Radiation Work Permit; 2) one contract worker was not wearing respiratory protection as required by the approved Radiation Work Permit; and 3) contaminated oil was not stored in a designated approved location as required by nuclear criticality safety postings.

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 correct the violation and prevent recurrence and the date when full compliance will be achieved is already adequately addressed on the docket in this Inspection Report. 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, D.C. 20555 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 publically available. To the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be made publically available without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld, and provide in detail the bases for your claim of withholding (e.g. explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.790(b) to support a request for withholding confidential, commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

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

Dated at Atlanta, Georgia
this 4th day of May 2001

U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.:	70-1113
License No.:	SNM-1097
Report No.:	70-1113/2001-03
Licensee:	Global Nuclear Fuel - Americas, LLC
Location:	Wilmington, NC 28402
Inspection Conducted:	April 2 - 6, 2001
Inspectors:	D. Ayres, Senior Fuel Facility Inspector, RII M. Crespo, Fuel Facility Inspector, RII G. Suber, Project Manager Intern, HQ
Approved by:	E. McAlpine, Chief, Fuel Facilities Branch Division of Nuclear Materials Safety

Enclosure 2

EXECUTIVE SUMMARY

Global Nuclear Fuel - Americas
NRC Inspection Report 70-1113/2001-03

The focus of this routine, unannounced inspection was the observation and evaluation of the licensee's programs for training, maintenance, and management controls. The report includes inspection efforts of one regional inspector and two inspector trainees. The inspection identified the following aspects of the licensee programs as outlined below:

Management Organization and Controls

- Operating procedures were being revised and controlled per license requirements. (Section 2.a)

- Methods to notify workers of changes to operating procedures varied between work areas and were prone to error when transferring personnel between work areas. (Section 2.a)

- The program management procedure system showed a lack of attention to detail by procedure reviewers and that periodic reviews were not being completed in a timely manner. (Section 2.a)

- The licensee's quarterly audits of nuclear safety issues adequately reviewed the pertinent areas of the fuel fabrication facility, and adequately detected and promptly addressed potential safety issues. (Section 2.b)

Maintenance/Surveillance

- A violation was cited associated with the failure to follow nuclear safety requirements during the disassembly and cleaning of a pellet press. Subsequent corrective actions implemented by the licensee were adequate to prevent recurrence. (Section 3.a)

- Radiation Work Permits and Functional Test Instructions contained adequate instructions to properly and safely perform the required work, and were properly authorized by the licensee's safety management. (Section 3.b)

- The surveillance testing and calibration of the engineered safety controls were found to be performed with adequate timeliness. The calibrations performed used well documented and readily available procedures to ensure that the safety controls in place were functioning within the appropriate limits. (Section 3.c)

Training

- General employee training and testing materials adequately provided proper instruction to operators on required safety topics. (Section 4.a)

- Classroom training for workers transferring from the closed Uranium Recovery Unit to the pellet and fuel assembly fabrication shop adequately focused on safety issues. On-the-job training allowed workers to understand the equipment, procedures, and safety controls before being given full responsibility for process operations. (Section 4.b)

REPORT DETAILS

1. Summary of Plant Status

This report covered a five day period. Powder, pellet, and fuel assembly production proceeded at reduced rates with portions of each system shut down for maintenance activities. There were no unusual plant operational occurrences during the onsite inspection.

2. Management Organization and Controls (O5) (IP 88005)

a. Procedure Controls (O5.02)

(1) Inspection Scope

The licensee's system for revising, reviewing, and approving procedures was reviewed to determine if it met the requirements of section 3.9 of the license application by: 1) Verifying that document controls ensure that all personnel affected by a procedure are adequately and timely informed of changes in the procedures, 2) verifying that only approved and current procedures are being used, and 3) verifying that procedures are reviewed for updating within the maximum allowed frequencies.

(2) Observations and Findings

The inspectors reviewed numerous operating procedures for various process areas of the fuel manufacturing facility. The inspectors observed that the properly authorized versions of the procedures were electronically available to workers at various job stations. The inspectors observed that operating procedures were reviewed and updated within the three-year required frequency. However, the licensee indicated that each main process area had its own method of notifying operators of changes to their applicable procedures. Some areas relied on computerized tracking or supervisory notification of procedure changes and operator qualifications to instruct affected workers on a change that had been made. One area depended upon the operators to view a bulletin board daily to determine if there were any new procedural requirements and, if so, review and sign a form to acknowledge that they understood the change. The inspectors found that relying on workers to check for procedure changes was prone to error, especially if changes to the procedures were subtle or infrequent. The inspectors also found that the varying methods between process areas for informing workers of procedure changes was also be prone to error when transferring personnel between work areas. The licensee acknowledged the potential for error and was investigating ways to improve the consistency and effectiveness of the procedure change notification system.

The inspectors reviewed the licensee’s standard practices and procedures (P/Ps) for the overall management of plant-wide programs. This included procedures for programs such as configuration management, quality assurance of computer software, and the development of practices and procedures. The inspectors found that several of these P/Ps had not been updated within the two-year time frame required by the licensee’s

program. In many cases, extensions had been granted by internal memorandum so that the review of these documents could be completed. However, the inspectors found that the time extensions granted for four of the documents had also expired.

The inspectors reviewed standard administrative routines (SARs) that govern various aspects of auxiliary functions associated with specific process lines. The SARs covered functions such as ventilation system maintenance, verification of safety controls, calculating uranium held up in filters, and developing functional test instructions and instrument calibrations. The inspectors found that many of these SARs had not been updated within the two-year time frame required by the licensee's program, and two SARs were almost two years overdue. The inspectors observed that changes had been drafted to most of these late SARs (including those that were two years overdue), and the revised versions were actively under review by the licensee's management.

During the review of licensee's documents, the inspectors also found typographical and formatting errors in many places. The licensee indicated that improvements would be made in the attention to detail being given to management reviews of program-level procedures and documents. The licensee also indicated that improvements would be made to ensure that the review frequency of these procedures met the licensee's internal timeliness requirements. The licensee's improvements to the program management procedure system will be tracked as Inspector Follow-up Item (IFI) 01-03-01.

(3) Conclusions

Operating procedures were being revised and controlled per license requirements. Methods to notify workers of changes to operating procedures varied between work areas and were prone to error when transferring personnel between work areas. The program management procedure system showed a lack of attention to detail by procedure reviewers and that periodic reviews were not being completed in a timely manner.

b. Internal Reviews and Audits (O5.03)

(1) Inspection Scope

The licensee's system for performing internal reviews and audits was examined to verify that it adequately evaluated the implementation of programs related to activities significant to plant safety.

(2) Observations and Findings

The inspectors reviewed the records of nuclear safety audits performed during the past year. The inspectors noted that each area of the fuel manufacturing process was audited during the quarter. The inspectors also noted that licensee personnel were rotated such that each area was not covered by the same auditor in consecutive quarterly audits. The audit records had space available for the auditors to record the corrective actions that were conducted. However, rarely were any corrective actions detailed in the audit records. The records simply indicated that the problem was

corrected. The consistent recording of corrective actions would improve the quality and completeness of the safety audit records. The inspectors noted that during one audit, the second occurrence of a problem had been found and highlighted by the licensee for increased attention in completing corrective actions.

The inspectors accompanied licensee safety personnel during a nuclear safety audit of the Dry Scrap Recycle system. The auditors reviewed the condition of the equipment for processing Special Nuclear Material and the general cleanliness of the area. The audit identified some minor contamination issues and an inoperative door latch on a ventilated glove box. The inspectors also observed that a review of the periodic functional testing of safety-related interlocks was completed as part of the quarterly audit. The inspectors found that the audit adequately reviewed the system for potential criticality safety and radiological safety issues and promptly address the problems that were found.

(3) Conclusions

The licensee's quarterly audits of nuclear safety issues adequately reviewed the pertinent areas of the fuel fabrication facility, and adequately detected and promptly addressed potential safety issues.

3. Maintenance/Surveillance (F1) (IP 88025)

a. Conduct of Maintenance (F1.01)

(1) Inspection Scope

The conduct of maintenance on process safety controls was reviewed to verify it was being adequately performed to ensure their availability and reliability.

(2) Observations and Findings

The inspectors observed the various maintenance activities being performed in the process areas. The inspectors reviewed the work being performed by contractors associated with the disassembly and cleaning of a pellet press (prior to rebuilding it) and observed two workers wearing respirators, but a third worker in the same area not wearing a respirator. The inspectors reviewed the Radiation Work Permit (RWP) posted at the entrance to the controlled area to determine the safety requirements associated with the rebuilding of the press. The inspectors found that the RWP required half mask respirators to be worn to disassemble and clean parts from the press. The RWP also required the area to be roped off and warning signs posted, although no such boundary had been established. This was significant because without an established boundary, other workers could unknowingly enter an area with airborne contamination and receive an internal radiation dose. The inspectors also found that contaminated lubricating oil drained from the press was not properly stored in a designated storage location as required by the area criticality safety posting. This was significant because obeying the requirements of criticality safety postings help ensure that criticality accidents do not

occur. These examples of failure to follow safety requirements were identified as Violation (VIO) 01-03-02.

On April 9, 2001, the licensee's management contacted the NRC Region II office to discuss corrective actions for the violation. The licensee had placed all contractor hot work on hold pending completion of corrective actions. The licensee met with the management of the contractor to review the incident and emphasize the importance of following all safety requirements associated with maintenance work. Corrective actions included revising the method of issuing and monitoring RWPs such that: 1) contract workers had to go to the Health Physics office to receive thorough instructions on the safety requirements prior to starting the job; 2) area managers and supervisors would meet with radiation protection staff at the beginning of work requiring an RWP to make sure that they were cognizant of the safety requirements; and 3) the radiation protection staff would make more frequent observations of the work area to ensure compliance with all RWP requirements. These corrective actions adequately addressed the violation such that further response from the licensee on this matter was not necessary.

No significant problems were noted associated with maintenance work being performed in other areas of the facility.

(3) Conclusions

A violation was cited associated with the failure to follow nuclear safety requirements during the disassembly and cleaning of a pellet press. Subsequent corrective actions implemented by the licensee were adequate to prevent recurrence.

b. Work Control Procedures (F1.02)
Work Control Authorizations (F1.03)

(1) Inspection Scope

Work control procedures for maintenance activities were reviewed to verify that they were properly approved by licensee management, and included adequate instructions for performing maintenance activities and for conducting post-maintenance functional testing of the equipment.

(2) Observations and Findings

The inspectors reviewed the RWPs for performing maintenance in contaminated areas. The inspectors observed that, when followed, the RWPs contained adequate instructions for assuring personnel safety. The inspectors also observed that RWPs were issued and approved by the appropriate safety personnel.

The inspectors reviewed Functional Test Instructions (FTIs) for conducting post-maintenance functional tests on safety-related equipment in the Dry Scrap Recycle area. The inspectors observed that the FTIs were adequately written to test the safety interlocks of the area. The inspectors also noted that field changes to FTIs were permitted upon approval of the nuclear safety function. One such change was observed for a functional test that was performed in March 2000. The field change was

incorporated into the standard FTI prior to the next scheduled test. All FTIs reviewed had been properly approved by safety management.

(3) Conclusions

Radiation Work Permits and Functional Test Instructions contained adequate instructions to properly and safely perform the required work, and were properly authorized by the licensee's safety management.

c. Surveillance Testing (F1.06)
Calibrations of Equipment (F1.07)

(1) Inspection Scope

Surveillance testing and calibration of engineered safety controls was reviewed to verify tests were being performed at the frequency established to ensure availability and reliability of the controls.

(2) Observations and Findings

The inspectors reviewed records of surveillance tests performed for the Dry Scrap Recycle system. Although all required surveillance tests for safety-related interlocks were current, the inspectors noted that several tests had been missed in 1999, during the system's first year of operation. The inspectors reviewed this with the area engineer and found that the missing surveillance tests had been previously identified by the licensee, and the tests had been placed on the licensee's tracking and notification system and were part of the quarterly safety audit (see Section 2.b). Since being placed on the licensee's tracking system, no late or missing required tests of safety-related interlocks had occurred.

The inspectors observed calibration and testing of safety-related equipment in the Dry Conversion Process area. The inspectors first observed the calibration of two temperature indicators that warned control room operators if the temperature of the rotary calciner was approaching a safety limit. The inspectors observed that the licensee performed the calibration using the procedure detailed on the calibration record sheet. The inspectors found that having the procedure on the calibration sheet helped minimize errors in following the procedure. The inspectors observed that the calibration of the temperature indicators was performed correctly. The inspectors then observed the testing of the moisture sensors (dewpoint indicator) for a set of powder cooling hoppers. These hoppers were part of the moderation restricted area process that restricts moisture as a criticality safety control. Again, the procedure for the testing was detailed on the record sheet for this task. During the testing, the licensee discovered that the dewpoint indicator did not fully respond to a moisture source. The inspectors noted that the dewpoint indicator stopped slightly below its upper detection limit, but was still capable of detecting moisture at the control limit. The licensee replaced the dewpoint indicator before the process line was restarted. The inspectors found that the licensee performed this test correctly and took appropriate corrective action at the first sign of dewpoint indicator degradation.

(3) Conclusions

The surveillance testing for the Dry Scrap Recycle system and calibration of the engineered safety controls for the Dry Conversion Process area were found to be performed with adequate timeliness. The calibrations performed used well documented and readily available procedures to ensure that the safety barriers in place were functioning within the appropriate safety limits.

4. Training (F2) (IP 88010)

a. 10 CFR 19.12 Training (F2.01)
General Nuclear Criticality Safety Training (F2.02)
General Radiological Safety Training (F2.03)
General Emergency Training (F2.04)

(1) Inspection Scope

General employee training and testing materials were reviewed to ensure that proper instruction was being given to operators on required safety topics.

(2) Observations and Findings

The inspectors reviewed the general employee training videotapes, portions of the exams given to employees, and the presentation materials used during classroom training. The material covered in the employee training demonstrated facility alarms and actions that should be taken upon hearing these alarms. The training material also adequately described the radiological hazards of the facility. The exam for the employees tested the material presented in training at an appropriate difficulty level using a bank of sample questions. The inspectors found that the training and testing adequately covered all of the safety topics required by 10 CFR 19.12 and commitments made in the facility license application.

(3) Conclusions

General employee training and testing materials adequately provided proper instruction to operators on required safety topics.

b. Operating Procedure Training (F2.05)
On-the-job Training (F2.06)

(1) Inspection Scope

Training for workers transferring between work areas was reviewed to verify that proper emphasis was being focused on informing the workers of the safety controls in their new work areas.

(2) Observations and Findings

The inspectors reviewed the training that had been conducted the week of March 26, 2001, for workers transferring from the recently closed Uranium Recovery Unit to the pellet and fuel assembly fabrication shop. The inspectors discussed the training with the training coordinator and the fabrication line manager. The inspectors noted that the training included sessions on: 1) the process operation and its associated procedures and safety controls, 2) the importance of configuration management and procedural compliance, 3) various general industrial and nuclear safety issues, 4) a review of the Job Hazards Analyses (JHAs) for the specific jobs to be performed, and 5) nuclear measurements important for material accounting. Although the inspectors found problems with the formatting of some of the JHAs (see similar problem in Section 2.a of this report), the overall instruction of the workers in their new positions was very thorough and properly focused on safety issues.

After a week of classroom training, the workers were scheduled to go through several weeks of on-the-job training (OJT). The inspectors observed some of the workers undergoing this OJT in the pellet grinding and inspection areas. Since the week of this inspection was the first week of the OJT, the newly transferred workers largely had an observation role. In the following weeks, they were to gradually acquire more of a hands-on role until they were fully qualified to operate the equipment. The inspectors found that this gradual method of indoctrinating workers in new areas adequately allowed workers to better understand the equipment, procedures, and safety controls before being given full responsibility for process operations.

(3) Conclusions

Classroom training for workers transferring from the closed Uranium Recovery Unit to the pellet and fuel assembly fabrication shop adequately focused on safety issues. On-the-job training allowed workers to understand the equipment, procedures, and safety controls before being given full responsibility for process operations.

5. Exit Meetings

The inspection scope and results were summarized on April 6, 2001, with those persons indicated in the Attachment. The inspectors described the areas inspected and discussed in detail the inspection results, including an apparent violation. No dissenting comments were received from the licensee. Although proprietary documents and processes were reviewed during this inspection, the proprietary nature of these documents or processes was not to be included in this report.

On April 9, 2001, the licensee’s management telephonically notified the inspectors of the corrective actions to be taken in response to the violation.

ATTACHMENT

PARTIAL LIST OF PERSONS CONTACTED

Licensee Personnel

S.Cathey	Manager, GNF Maintenance
*D.Dowker	Manager, Fuel Material Supply
*R.Haughton	Manager, Fabrication Product Line
*A.Mabry	Program Manager, Radiation Safety
L.Paulson	Manager, Nuclear Safety
*J.Taylor	Criticality Safety Engineer
*J.Reeves	Configuration Management Control Team Leader

INSPECTION PROCEDURES USED

IP 88005	Management Organization and Controls
IP 88010	Operator Training/Retraining
IP 88025	Maintenance and Surveillance Testing

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

IFI	01-03-01	Improvements in the timeliness and attention to detail of management reviews for program-level procedures and documents.
VIO	01-03-02	Failure to follow nuclear safety requirements during the disassembly and cleaning of a pellet press.

Closed

None

Discussed

None

ACRONYMS

FTIs	Functional Test Instructions
IFI	Inspector Follow-up Item
JHAs	Job Hazard Analyses
OJT	On-the-Job Training
P/Ps	Practices and Procedures
RWP	Radiation Work Permit
SARs	Standard Administrative Routines
SNM	Special Nuclear Material
VIO	Violation