



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

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

March 6, 2006

NRC Event Nos. 4226, 42244

Mr. Kerry Schutt  
President, General Manager  
Nuclear Fuel Services, Inc.  
P. O. Box 337, MS 123  
Erwin, TN 37650

SUBJECT: NRC INSPECTION REPORT NO. 70-143/2006-001 AND NOTICE OF VIOLATION

Dear Mr. Schutt:

This refers to the inspection conducted from December 25, 2005, through February 4, 2006, at your Erwin, Tennessee, facility. The purpose of the inspection was to determine whether activities authorized by the license were conducted safely and in accordance with NRC requirements. The results of the inspection are documented in the enclosed NRC Form 591, Parts 1 and 2, and Executive Summary.

Areas examined during the inspection included the following: Plant Operations, Fire Protection, Radiation Protection, and Physical Protection. 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 this inspection, the NRC has determined that three violations of NRC requirements occurred. These violations were evaluated in accordance with the NRC Enforcement Policy. The current Enforcement Policy is available on the NRC's Web site at [www.nrc.gov](http://www.nrc.gov). One violation is cited in the enclosed Notice of Violation (Notice). The violation is being cited in the Notice because two of the four examples noted were identified by the NRC.

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. For your consideration, NRC Information Notice 96-28, "SUGGESTED GUIDANCE RELATING TO DEVELOPMENT AND IMPLEMENTATION OF CORRECTIVE ACTION," is available on the NRC's Web site. The NRC will use your response, in part, to determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

[REDACTED]

Two violations are being treated as non-cited violations (NCVs), consistent with Section VI.A.8 of the Enforcement Policy. The NCVs are described in the subject inspection report. If you contest the violations or significance of these NCVs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001, with copies to the Regional Administrator, Region II, and the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001, and the NRC Resident Inspector at your facility.

[REDACTED]

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

Sincerely,

*/RA/*

David A. Ayres, Chief  
Fuel Facility Inspection Branch 1  
Division of Fuel Facility Inspection

Docket No. 70-143  
License No. SNM-124

Enclosures: 1. Notice of Violation  
2. Form 591 Inspection Report, Parts 1, and 2  
3. Executive Summary

cc w/encls:  
B. Marie Moore  
Vice President  
Safety and Regulatory Management  
Nuclear Fuel Services, Inc.  
P. O. Box 337, MS 123  
Erwin, TN 37650

Distribution w/encls: (See page 3)

[REDACTED]

K. Schutt



Distribution w/encls:

- D. Ayres, RII
- W. Gloersen, RII
- D. Rich, RII
- B. Bonser, RII
- B. Westreich, NSIR
- K. Ramsey, NMSS
- M. Lamastra, NMSS
- M. Galloway, NMSS



ADAMS:  X Yes ACCESSION NUMBER: \_\_\_\_\_

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| DATE         | 03/03/2006 | 03/06/2006 | 03/03/2006 | 03/03/2006 | 03/06/2006 | 5/ /2008 | 5/ /2008 |
| E-MAIL COPY? | YES        | YES        | NO         | NO         | YES        | YES NO   | YES NO   |

OFFICIAL RECORD COPY DOCUMENT NAME: E:\Filenet\ML060660229.wpd



[REDACTED]

NOTICE OF VIOLATION

Nuclear Fuel Services, Inc.  
Erwin, Tennessee

Docket No. 70-143  
License No. SNM-124

During an NRC inspection conducted from December 25, 2005, through February 4, 2006, a violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy the violation is listed below:

Safety Condition S-1 of Special Nuclear Material License No. SNM-124 authorizes the use of licensed material in accordance with the statements, representations, and conditions in the license application and supplements.

Section 2.7 of the License Application, "Procedures," states that "SNM operations and safety function activities are conducted in accordance with written procedures as defined in Sections 1.7.4 and 1.7.5."

NFS-GH-03, "Radiation Work Permits," Section 5.3.5, states "All personnel who enter a RWP area must read, sign, and comply with all requirements of the RWP."

NFS-GH-01, "Contamination Control," Revision 22, Section 5.0, Procedure, states "General Personnel Requirements: All personnel shall wear appropriate protective clothing while in a Controlled Area." Step 5.1.7 states "Contractor personnel shall meet the same protective clothing requirements as NFS personnel unless the Safety Department specifies alternative protective clothing."

Contrary to the above,

- a. On December 21, 2005, an employee in the BLEU Preparation Facility (BPF) area, failed to comply with the requirements of Radiation Work Permit #05-41-89, in that he did not have the required protective clothing.
- b. On January 5, 2006, a supervisor working on the [REDACTED] area, failed to comply with the requirements of Radiation Work Permit #11318, in that he did not have the required protective clothing.
- c. On January 11, 2006, a contractor employee working at the Waste Water Treatment Facility failed to wear appropriate protective clothing, specified at the radiological controlled area entrance, while in the controlled area.

[REDACTED]

Enclosure 1

- d. On January 31, 2006, an employee in the BPF area, failed to comply with the requirements of Radiation Work Permits # 11419 and 11421, in that he did not have the required protective clothing

This is a Severity Level IV violation (Supplement VI)

Pursuant to the provisions of 10 CFR 2.201, Nuclear Fuel Services, Inc. is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555 with a copy to the Regional Administrator, Region II, and a copy to the NRC Senior Resident Inspector at the facility that is the subject of this Notice, within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation" and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation or severity level, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken to avoid further violations, and (4) the date when full compliance will be achieved. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an order or a Demand for Information may be issued as to why the license should not be modified, suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time.

If you contest this enforcement action, you should also provide a copy of your response to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, D.C. 20555-0001.

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

Dated this 6th day of March, 2006

**SAFETY INSPECTION REPORT  
AND COMPLIANCE INSPECTION**

|  |                                       |  |  |
|--|---------------------------------------|--|--|
| 1. LICENSEE/LOCATION INSPECTED:<br><br><b>Nuclear Fuel Services, Inc.</b><br><b>P. O. Box 337, MS 123</b><br><b>Erwin, TN 37650</b><br><br>INSPECTION REPORT(S): 70-143/2006-001 |                                       | 2. NRC/REGIONAL OFFICE<br><br><b>U.S. Nuclear Regulatory Commission</b><br><b>Region II, Division of Fuel Facilities Inspection</b><br><b>61 Forsyth Street, Suite 23T85</b><br><b>Atlanta, GA 30303</b> |  |
| 3. DOCKET NUMBER(S):<br><br>70-143   | 4. LICENSEE NUMBER(S):<br><br>SNM-124 | 5. DATE(S) OF INSPECTION:<br><br>12/25/2005-2/4/2006   |  |

**LICENSEE:**  
 The inspection was an examination of the activities conducted under your license as they relate to Plant Operations, Fire Protection, Radiation Protection, and Physical Protection. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observation of activities in progress. The inspection findings are as follows:

1. Based on the inspection findings, no violations were identified.

2. Previous violation(s) closed. See list of items opened, closed and discussed in the Executive Summary.  
 (Closed) Notice of Violation (NOV) 70-143/2005-08-01, involving the failure to maintain configuration control of equipment in Building 333, was reviewed. Corrective actions were noted to be adequately implemented. This item is 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, to exercise discretion, were satisfied.

Two \_\_\_\_\_ Non-Cited Violations were discussed involving the following requirement(s) and Corrective Actions:  
 NFS procedure HS-CL-13-07 limits net container mass of containers in storage in the \_\_\_\_\_ area for criticality safety purposes. On December 16, 2005, the licensee identified that a container was stored in the area which exceeded the posted mass limit. This issue was documented as PIRCS 6825. Standard Operating Procedure (SOP) 409, Section 22, requires two operators verify the container meets the posted limits prior to storage. Failure to comply with storage area mass limits was a violation of NRC requirements, NCV 70-143/2006-001-01. The licensee determined the excessive mass in the container was bounded by the area safety analysis. The licensee implemented adequate corrective actions which consisted of review of storage of other containers and re-training operators on container storage.

License Application Section 2.12 requires management measures to ensure that items relied on for safety (IROFS) are available and reliable to perform their function when needed, as specified in 10 CFR 70.62(d). NRC Event #42244, identified on January 6, 2006, involved the failure to adjust the setpoint of the in-line monitor for the \_\_\_\_\_ discard system to the required value stated in the nuclear criticality safety evaluation (NSCE). This was a management measures failure in the area of configuration control. The licensee reported the event because without the in-line monitor, 10 CFR 61 performance criteria could not be met. Failure to implement and maintain an IROFS as necessary was a violation of NRC requirements, NCV 70-143/2006-01-02. The licensee implemented adequate corrective actions through the use of a modified NSCE verification checklist.

4. During this inspection certain of your activities, as described below and/or attached, were in violation of NRC requirements and are being cited. The enclosed NOTICE OF VIOLATION may be subject to posting in accordance with 10 CFR 19.11.

(Violations and Corrective Actions)

See enclosed NOV

**Licensee's Statement of Corrective Actions for Item 4, above.**

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'S REPRESENTATIVE | Not Applicable |           |      |
| NRC INSPECTOR(S)          | See Item 6     |           |      |

**SAFETY INSPECTION REPORT  
AND COMPLIANCE INSPECTION**

**1. LICENSEE**

**Nuclear Fuel Services, Inc.  
P. O. Box 337, MS 123  
Erwin, TN 37650**

INSPECTION REPORT(S): 70-143/2006-001

**2. NRC/REGIONAL OFFICE**

**U.S. Nuclear Regulatory Commission  
Region II, Division of Fuel Facilities Inspection  
61 Forsyth Street, Suite 23T85  
Atlanta, GA 30303**

**3. DOCKET NUMBER(S):**

70-143

**4. LICENSE NUMBER(S):**

SNM-124

**5. DATE(S) OF INSPECTION:**

12/25/2005-2/4/2006

**Supplemental Inspection Information**

**Item 5. Reported events reviewed**

- NRC Event #42226 involving a relay failure for a criticality detector in the Oxide Conversion Building was adequately evaluated. The licensee replaced the defective component and augmented the testing schedule to monitor system performance. On February 8, 2006, the licensee submitted a 10 CFR 21 report to document generic concerns.
- NRC Event # 42244 (see item 3)

**Item 6. NRC Inspectors**

S. Burris, Resident Inspector  
M. Crespo, Fuel Facility Inspector  
D. Rich, Senior Resident Inspector  
N. Rivera, Fuel Facility Inspector

**Item 7. Inspection Procedures Used**

TI 2600/006 Safety Operations, [REDACTED], Radiological Controls and Facility Support  
IP 88020 Regional Criticality Safety Inspection Program  
TI 2600/012 Institutionalizing Concern Regarding Safety Issues Identified in Selected Past Generic Communications

[REDACTED]

## Executive Summary

This inspection included activities conducted by the resident inspectors and specialist inspectors during normal and off normal shifts in the areas of facility operations, fire protection, radiation protection, and physical protection. [REDACTED], Blended Low Enriched Uranium (BLEU) Preparation Facility (BPF), Oxide Conversion Building (OCB), and decommissioning processes were in operation.

### Plant Operations

- The plant was generally operated safely and in accordance with the license. Fuel manufacturing operations and testing were conducted in accordance with approved procedures. Housekeeping was adequate and no adverse effect on radiological safety or facility emergency egress was noted.
  - Two non-cited violations were noted: (1) A violation of posted nuclear criticality safety instructions (NCV 70-143/2006-001-01); and (2) A failure to correctly adjust the alarm setpoint of an in-line monitor (NCV 70-143/2006-001-02).
  - Deficiencies were noted in entering and resolving radiation protection (RP) issues in the problem identification, resolution, and corrective action system (PIRCS). Until the date of the inspector's exit meeting for this report, no PIRCS entry was made for the RP violation noted in this report which occurred on January 11, 2006. Likewise, a PIRCS entry for the control of excavation noted in this report as IFI 70-143/2006-001-04 was not made until day of the exit meeting. Also, the licensee identified an RP violation which occurred on January 19, but then erroneously documented in Apparent Cause Investigation 4531 that no violation occurred. All three issues were corrected after the inspectors requested clarification from the licensee.
  - Inspectors reviewed the licensee's preparations for a shipment of approximately [REDACTED] containers, in order to verify compliance with shipping requirements and radiological controls requirements. No significant deficiencies were identified.
  - Inspectors reviewed modifications to the [REDACTED] piping and overflow system in BPF and verified compliance with the licensee's change control process. The inspectors had no significant findings.
  - The following Temporary Instruction 2600/012 items were reviewed:
    - IN 99-030      The conditions identified in IN 99-030, "Failure of Double Contingency Based on Administrative Controls Involving Laboratory Sampling and Spectroscopic Analysis of Wet Uranium Waste," were not applicable to the licensee.
- [REDACTED]

- [REDACTED]
- IN 02-024 The licensee evaluated the potential for failure of sprinkler heads to activate due to heat collectors and determined that they do not have any cases in which they use heat collectors.
- IN 99-007 Operational failure of deluge valves due to improper maintenance techniques was evaluated by the licensee as not applicable to the site since all maintenance is performed by the qualified vendors.
- IN 86-024 The licensee determined that they do not have any of the suspect fiberglass wrapped SCBA cylinders as identified in the Notice.

#### Fire Protection

- Engineered fire prevention and mitigation systems were adequately maintained.
- One example of improper hot work activities creating a fire hazard was noted when a fire watch was observed shielding hot work with his smock.

#### Radiation Protection

- A violation was noted with four examples of failure to follow radiological protection requirements, two of which were identified by the inspectors (VIO 70-143/2006-001-03). The issue is repetitive, in that corrective actions for violation 70-143/2005-10-06 should have prevented a recurrence of personnel failing to wear required personnel protective equipment. The issues were documented as PIRCS events 6895, 6992, 7127, 7185. PIRCS #6895 was notable because the employee confused the black and yellow RWP boundary posting with an industrial safety boundary. Although this type of boundary is commonly used in the [REDACTED], black is not a standard color for a radiation boundary.
- No radiation controls were established for excavation work adjacent to the Waste Water Treatment Facility (WWTF). This area had been controlled as a Radiologically Controlled Area when previously excavated and filled with fresh gravel. The area was subsequently released under NFS-GH-15, Covering Plant Surfaces. On January 5, 2006, contractor personnel dug through the fresh fill with power equipment, into the earth which had been previously controlled as a radiologically controlled area. In order to research licensee procedures and control for excavation this item will be tracked as Inspection Followup Item (IFI) 70-143/2006-001-04.

#### Physical Protection

- [REDACTED]

[REDACTED]

Inspector Followup Items

- (Closed) IFI 70-143/2005-011-05 was a criticality safety concern, in that the nitrogen purge capability on the [REDACTED] was not included in the system setpoint analysis for an over-pressure condition which could cause backflow into utilities. The inspectors reviewed the licensee's revised setpoint analysis and concluded there was not a safety issue. This item is closed.
- (Reviewed) IFI 70-143/2005-010-07: involved RMS-3 criticality monitors resetting to their default configuration. The investigation into the issue was reviewed by the inspector and was determined to be adequate. The root cause was determined to be incompatibility between the RMS-3 units and an accompanying software package called RADNET, and the licensee had discontinued use of this software. This item will remain open to track the licensee's long term resolution.

List of Items Opened, Closed, and Discussed

| <u>Item Number</u> | <u>Status</u> | <u>Type</u> | <u>Description</u>  |
|--------------------|---------------|-------------|---|
| 70-143/2006-001-01 | Open/Closed   | NCV         | Failure to comply with criticality safety posting.                            |
| 70-143/2006-001-02 | Open/Closed   | NCV         | Failure to correctly adjust the setpoint for the in-line monitor              |
| 70-143/2006-001-03 | Open          | NOV         | Radiological Controls for Evacuation  |
| 70-143/2006-001-04 | Open          | IFI         | Lack of radiation controls for excavation near Waste Water Treatment Facility |
| 70-143/2005-008-01 | Closed        | NOV         | Failure to maintain configuration control                                     |
| 70-143/2005-010-07 | Reviewed      | IFI         | Criticality Alarm unit failed with no detection                               |
| 70-143/2005-011-05 | Closed        | IFI         | Potential Over-Pressurization [REDACTED]                                      |

  
Exit Meeting

The inspection scope and results were presented to members of the licensee management at various meetings throughout the inspection period and were summarized on February 3, 2006. Executive management in attendance is noted below. No dissenting comments were received from the licensee.

G. Athon, Principal Scientist  
P. Johnson, Vice President, Applied Technology  
M. Moore, Vice President, Safety and Regulatory  
K. Schutt, President & General Manager  
A. Ward, General Counsel  
D. Wise, Vice President, Fuel Manufacturing

