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

January 28, 2007

Mr. D. B. Ferguson, Jr.
President & CEO
Nuclear Fuel Services, Inc.
P O. Box 337, MS 123
Erwin, TN 37650

SUBJECT: NRC INSPECTION REPORT NO. 70-143/2007-009 AND NOTICE OF VIOLATION

Dear Mr. Ferguson:

This refers to the inspection conducted from December 3, 2007, through December 31, 2007, at the Nuclear Fuel Services 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 included: plant operations, radiation protection, facility support, and transportation. 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 violations of NRC requirements occurred. The 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. The violations are cited in the enclosed Notice of Violation (Notice) and are being cited in the Notice because they 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.

If you contest the violations, 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 20555-001, with copies to the Regional Administrator, Region II, and the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-001, and the NRC Resident Inspectors at your facility.

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

Alphonsa Gooden, Acting 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. NRC Inspection Report

cc w/encls:
Timothy Lindstrom, General Manager
Nuclear Fuel Services, Inc.
P.O. Box 337, MS 123
Erwin, TN 37650

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

L. Edward Nanney, Director
Division of Radiological Health
Tennessee Dept. Of Environment & Conservation
L&C Annex, Third Floor
401 Church Street
Nashville, TN 37243-1532

cc w/encls: (Cont'd on page 3)

(cc w/encls: cont'd)
William D. Lewis, Mayor
Town of Erwin
211 N. Main Avenue
P.O. Box 59
Erwin, TN 37650

Gregg Lynch, Mayor
Unicoi County
P. O. Box 169
Erwin, TN 37650

Johnny Lynch, Mayor
Town of Unicoi
Unicoi, TN 37692

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PUBLIC

*see previous concurrence

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ADAMS: ☐ Yes ACCESSION NUMBER:_____

OFFICE	RII:DFFI	RII:DFFI	RII:DFFI	RII:DFFI	RII:DFFI		
SIGNATURE	via telephone	via telephone			CLASSIFER		
NAME	GSmith	SBurris	OLopez*	MCrespo*	DMCollins		
DATE	01/25/2008	01/25/2008			01/28/2008		
E-MAIL COPY?	YES	YES	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY DOCUMENT NAME: C:\FileNet\ML080290115.wpd

NOTICE OF VIOLATION

Nuclear Fuel Services, Inc.
Erwin, Tennessee

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

During an NRC inspection conducted from December 2, 2007, through December 31, 2007, violations of NRC requirements were identified. In accordance with the NRC Enforcement Policy, the violations are listed below:

A. Safety Condition S-1 of Special Nuclear Materials License No. SNM-124, authorizes the use of licensed materials in accordance with the statements, representations, and conditions in the License Application and Supplements.

Section 2.7 of the License Application, "Procedures," requires SNM operations and safety function activities to be conducted in accordance with written procedures.

Section 3.1.3 of the License Application, "Safety Procedures," states, in part, that activities performed for the safety program shall be in accordance with approved written procedures. These procedures, which instruct in duties such as radiological surveillance and monitoring, and collecting and analyzing samples, will be made available to personnel working in the safety function.

NFS Procedure NFS-GH-03, "Safety Work Permits," Rev. 12, Section 5.3, "General Requirements," states "All personnel who enter a posted SWP [Special Work Permit] area must read, sign, and comply with the requirements of the permit."

NFS Procedure NFS-GH-42, "Establishing and Posting Radiologically Controlled Areas," Rev. 5, Section 5.6, states "Entry into site areas defined as 'Controlled Areas' will be posted 'Notice, Radiologically Controlled Area Entrance.'"

Contrary to the above, the following two examples were identified:

- On December 10, 2007, contractor personnel working on the 310 warehouse had entered a posted SWP area and did not comply with the requirements of the permit. The personnel had entered the area without the personal protective equipment required by the SWP.

- On December 19, 2007, licensee personnel had established an entrance into an area defined as a "Controlled Area" but had not posted "Notice, Radiologically Controlled Area Entrance."

This is a Severity Level IV violation (Supplement VI).

B. Safety Condition S-1 of Special Nuclear Materials License No. SNM-124, authorizes the use of licensed materials in accordance with the statements, representations, and conditions in the License Application and Supplements.

Section 2.7 of the License Application, "Procedures," requires SNM operations and safety function activities to be conducted in accordance with written procedures.

Section 4.0 of procedure ENG-EPS-A-001, “Engineering Practices and Standards," requires that an Engineering - Project Tollgate Approval Form be completed at each tollgate meeting and filed in the engineering design file.

Contrary to the above, prior to December 6, 2007, the licensee failed to complete an Engineering - Project Tollgate Approval Form at each tollgate meeting and failed to file the forms in the engineering design file for the BPF U-Metal Project.

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 Inspectors 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 previously 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.

Because your response will be made publicly available, to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be made publicly 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 basis 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 2.390(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 732.21.

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

Dated this 28th day of January, 2008.

U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.:	70-143
License No.:	SNM-124
Report No.:	70-143/2007-009
Licensee:	Nuclear Fuel Services, Inc.
Facility:	Erwin Facility
Location:	Erwin, TN 37650
Dates:	December 2, 2007 - December 31, 2007
Inspectors:	S. Burris, Senior Resident Inspector G. Smith, Resident Inspector O. López, Fuel Facilities Inspector
Approved by:	A. Gooden, Acting Chief Fuel Facility Inspection Branch 1 Division of Fuel Facility Inspection

Enclosure 2

EXECUTIVE SUMMARY

Nuclear Fuel Services, Inc.
NRC Inspection Report 70-143/2007-009

This inspection included activities conducted by the resident inspectors and regional inspectors during normal and off normal shifts in the areas of plant operations, radiological protection, facility support, and transportation.

Plant Operations

- The plant was operated safely and in accordance with the license (Paragraph 2.a).
- A non-cited violation was identified dealing with failure to follow plant procedures (Paragraph 2.a).
- Fire protection and detection equipment was adequately maintained. Fire hazards were minimized by appropriate housekeeping (Paragraph 2.b).

Radiation Protection

- Radiological control practices met regulatory requirements with the exception of two examples of failing to follow procedures dealing with radiological controls, which were identified as a violation (Paragraph 3.a).

Facility Support

- A violation was identified for the failure to implement the Tollgate process (Paragraph 4.a).
- Maintenance was performed in accordance with plant procedures during the shutdown period at the end of December (Paragraph 4.b).

Transportation

- The activities associated with the packaging, classification, shipments and receipt of radioactive materials were performed in accordance with the current procedures and regulations (Paragraph 5.a).

Attachment:
Partial List of Persons Contacted
Inspection Procedures Used
List of Items Opened, Closed, and Discussed

REPORT DETAILS

1. Summary of Plant Status

The fuel manufacturing and scrap recovery processes operated throughout the reporting period with the exception of the Christmas shutdown period and an extended maintenance period to replace various vent and drain lines (see Section 2.a). Blended low-enriched uranium (BLEU) oxide conversion activities operated normally during the inspection period. Fuel manufacturing, training activities and scrap recovery processes were operated throughout the reporting period. BLEU Preparation Facility (BPF) operations were conducted in accordance with license requirements. Decommissioning, including processing, packaging, and shipping contaminated soil and debris from burial grounds continued under normal conditions.

2. Safety Operations

a. Plant Operations (Inspection Procedure (IP) 88135)

(1) Inspection Scope and Observations

The inspectors made routine tours of the plant operating areas and determined that equipment and systems were operated safely and in compliance with the license. Daily operational meetings were observed where production status and issues were discussed. The inspectors verified the Emergency Control Center (ECC) and associated equipment were maintained in a state of readiness. The inspectors reviewed selected licensee identified events and corrective actions for previously identified events and found no significant deficiencies in the items reviewed.

The inspectors toured processing, storage, and recovery areas and observed that personnel complied with approved, written nuclear criticality safety (NCS) limits and controls. The inspectors verified NCS limits were posted and available to the operators. Proper spacing practices and controls, use of storage locations, and identification of Special Nuclear Material (SNM) were also observed during tours of the facility and determined to be in accordance with the requirements. The inspectors performed various tours of the fuel process areas, BPF, and waste treatment facility. The inspectors verified that there was adequate staffing, operator attentiveness, compliance with procedures and station limits and verified that safety controls were implemented and controlled. Communications were monitored between supervision and line operators to ensure that safety activities were being performed in accordance with design and administrative controls. Adequate oversight was provided by supervision.

During this assessment period, the inspectors observed and reviewed the licensee's continued efforts to upgrade the site criticality alarm/evacuation system. The identified upgrades, when implemented, will make the criticality system more flexible and reliable by allowing the emergency response organization to evaluate data from the system at remote locations and should reduce the number of spurious alarms. The inspectors will continue to followup on the progress of the installation of the system upgrades.

On December 3, 2007, an operations supervisor directed the discharge of waste material from Area 800 to the waste treatment tanks that did not meet certain discharge criteria. Plant procedure SOP 401, Section 8-3, "Area 800 Process Upsets," Rev. 21, step 8.2.5 required the waste to be directed to certain types of containers for further sampling if the waste did not meet certain criteria. After discussions with operations personnel, the supervisor recognized his error and promptly entered the issue into the corrective action system as PIRCS item #11823. The normal operating section of SOP 401 allows direct transfer to the waste vessels, but the upset section of the procedure requires shipment of the waste material via an alternate path if fissionable material is potentially present. Although the normal flowpath contains two separate items relied on for safety (IROFS) to prevent inadvertent criticality, the procedures are designed to prevent unnecessarily challenging these IROFS. This non-repetitive, licensee identified and corrected violation for failure to follow procedure is being treated as a non-cited violation (NCV), consistent with Section VI.A.8 of the NRC Enforcement policy (NCV 70-143/2007-009-01). The corrective actions included retraining the involved operators.

On December 6, 2007, while performing a walk-down of a system with several students, a training instructor questioned the clarity of an overflow line and generated PIRCS item #11861. As a result of this observation, the licensee began an extensive and comprehensive walk-down of the process systems and noted several process components that were not transparent. The safety related equipment (SRE) tests for these components designated as IROFS require the visual verification that these lines are clear and not clogged. As a proactive measure, the licensee began a shutdown of various process systems in order to effect repairs to the questionable vents and drains. Some systems remained shutdown into the Christmas shutdown period that lasted until the end of the year. The inspectors noted no issues with the licensee's corrective actions.

(2) Conclusions

The plant was operated safely and in accordance with the license. However, an NCV was noted during this period for failure to follow plant procedures.

b. Fire Protection (IP 88135)

(1) Inspection Scope and Observations

The inspectors reviewed fire detection and protection systems to verify that they were in accordance with the license and additional licensee commitments. The inspectors determined that fire protection and detection equipment was adequately maintained. Portable fire extinguishers were charged to the normal operating zones and no visible damage was noted. Fire hazards were minimized by appropriate housekeeping.

(2) Conclusions

Fire protection and detection equipment was adequately maintained. Fire hazards were minimized by appropriate housekeeping.

3. Radiological Controls

a. Radiation Protection (IP 88135)

(1) Inspection Scope and Observations

The inspectors reviewed radiation work permits (RWPs), radiological surveys, radiological precautions, and general work practices in the process areas and in decommissioning and construction areas to verify that work was conducted safely and in compliance with the license. During tours of the facility, the inspectors noted that radiological procedures were properly posted or readily available. The inspectors determined that equipment and devices used to confine and contain radioactive contamination and airborne radioactivity were in proper working condition and that proper personal dosimetry were issued and properly worn. Radiological controls in process and decommissioning areas were adequate. During process area tours, the inspectors noted that housekeeping was adequate and emergency egress routes were clear of debris. The inspectors observed response to off-normal events and noted the use of conservative radiological control practices to confine contamination and to prevent unnecessary personnel exposure.

On Saturday, December 8, 2007, the licensee notified the resident inspectors that, during a routine surveillance of the facility, contamination was found in one of the on-site warehouses. During the cleanup activities on December 10, 2007, the resident identified that the contamination area did not have any postings to identify the area as a controlled area. The licensee posted the area as a contamination control area and put a Special Work Permit (SWP) into effect. The SWP required that the individual cleaning the area wear two pairs of shoe covers, two pairs of gloves, and a set of sleeve protectors. While touring the area later that day, the residents noticed that the individual cleaning up the storage bins did not have on sleeve protectors as required by the SWP. The resident pointed this out to the on scene supervisor, who instructed the individual to come out of the area and don the appropriate personal protective equipment.

During a routine tour of the facility on December 19, 2007, the inspectors noticed that a normally closed door was open and walked over to the area to investigate. The inspectors found a person on the other side of the door. While discussing the reasons for the door being open, the inspectors noticed brown paper on the floor. When they asked why the paper was on the floor, licensee personnel stated that it was a clean area to allow for the transition of visitors from the low enriched uranium (LEU) side to the high enrich uranium (HEU) side and back. The inspectors questioned how the area was radiologically controlled since there was nothing which identified the area as a clean area. The licensee stated that normally the radiation technician would stay in the area and prevent anyone from entering the area, however, in this case he had to perform some additional duties in another part of the facility. The inspectors determined this practice did not meet the requirements detailed in NFS-GH-42, which requires that the establishment of entrances to controlled areas be properly posted.

In both cases, the licensee's failure to follow plant operating procedures was identified as a violation of NRC requirements. This failure is a repetitive, NRC-identified issue and is being identified as a violation (VIO 70-143/2007-009-02).

(2) Conclusions

Radiological control practices met regulatory requirements, with the exception of the violation for failure to follow procedures.

4. Facility Support

a. Engineering Support (IP 88025 and IP 88135)

(1) Inspection Scope and Observations

The inspectors reviewed and discussed with the licensee the implementation of the Tollgate process for the BPF U-Metal Project. The inspectors also reviewed relevant design documentation related to the project and related procedures. The Tollgate process was designed to improve communication with customers and stakeholders, improve formal design peer review, reduce redesign/rework, clear the transition through the different project execution phases, and integrate the different safety disciplines into the design process.

During the review, the inspectors noted that the licensee did not complete an Engineering - Project Tollgate Approval Form at each tollgate meeting and did not file the forms in the engineering design file for the BPF U-Metal Project. Section 4.0 of procedure ENG-EPS-A-001, "Engineering Practices and Standards," requires that an Engineering - Project Tollgate Approval Form be completed at each tollgate meeting and filed in the engineering design file. The failure to complete and file the forms resulted in poor implementation of the Tollgate process and lead to design deficiencies that impacted the process operation. This issue was identified as a violation of NRC requirements (VIO 70-143/2007-009-03). Upon identification of the issue, licensee management communicated their expectation to their staff that the Tollgate process was to be properly implemented.

(2) Conclusions

A violation was identified for the failure to implement the Tollgate process for the BPF U-Metal Project.

b. Maintenance/Support (IP 88135)

(1) Inspection Scope and Observations

The inspectors performed an assessment of the maintenance and surveillance activities performed during the Christmas shutdown period from December 24 to December 31. The activities included the replacement of various vents and drains, locker room upgrade and the implementation of a programmable logic controller (PLC)-based

criticality monitoring system. The inspectors verified that IROFS and other safety controls were in place and available to perform their safety function when needed. These assessments included work control documents, permits, and other required controls.

(2) Conclusions

The inspectors determined that the licensee adequately performed maintenance and sufficiently documented any identified adverse condition.

5. Transportation (IP 86741)

(1) Inspection Scope and Observations

The inspectors discussed with the licensee and reviewed procedures for the preparation and classification of packages for shipment. The inspectors also reviewed selected shipping and radiation survey records for fissile and waste shipments. The inspectors noted that reviewed procedures and shipping papers were consistent with applicable regulations. The inspectors also noted that the licensee performed radiation surveys, and container inspections, and selected the proper marking and labeling for the packages in accordance with the regulations.

The inspectors verified that the licensee maintained current certificates of compliance (CoC) on file and properly implemented the CoC's for the ES-3100 and OP-TU-21 shipping containers used to transport fissile material. The inspectors discussed with the licensee the leak testing performed on these shipping containers and reviewed selected leak test records. No safety problems were identified.

The inspectors discussed with licensee staff the requirements for the receipt of radioactive material packages and noted that they were knowledgeable of requirements and procedures of unloading vehicles and receiving radioactive material packages. The inspectors observed activities related to the receipt of fissile material packages and did not identify safety issues.

The inspectors verified that management controls for the packaging and transporting of radioactive materials were being implemented in accordance with the quality assurance and audit program. The inspectors reviewed quality assurance audits for the shipping of Class A and C waste and for the operations of the ES-3100 shipping packages. The inspectors did not identify any problem.

(2) Conclusions

The activities associated with the packaging, classification, shipments and receipt of radioactive materials were performed in accordance with the current procedures and regulations.

6. 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 January 3, 2008. No dissenting comments were received from the licensee.

ATTACHMENT

1. PERSONS CONTACTED

Partial List of Licensee's Persons Contacted

T. Lindstrom, General Manager
M. Moore, Vice President, Safety & Regulatory
J. Pugh, Director Operational Support
R. Bond, Senior Project Director, HEU Operations
T. Coates, Engineering Section Manager
B. McKeehan, Transportation and Waste Manager
G. Athon, Vice President, Applied Technology/Principle Scientist
S. Sanders, Training Manager
D. Gardner, Licensing Specialist

2. INSPECTION PROCEDURES USED

IP 86740	Inspection of Transportation Activities
IP 88030	Radiation Protection
IP 88055	Fire Protection
IP 88135	Resident Inspectors Program for Category 1 Fuel Cycle Facilities

3. LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Item Number	Status	Type	Description
70-143/2007-009-01	Open	NCV	Failure to Follow Plant Procedures (Paragraph 2.a.(1))
70-143/2007-009-02	Open	VIO	Failure to Follow Radiological Procedures (Paragraph 3.a.(1))
70-143/2007-009-03	Open	VIO	Failure to Implement the Tollgate Process for the BPF U-Metal Project (Paragraph 4.a.(1))