



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
245 PEACHTREE CENTER AVENUE, SUITE 1200  
ATLANTA, GEORGIA 30303-1257

November 4, 2010

EN 46284  
EN 46086

Mr. David B. Amerine  
President  
Nuclear Fuel Services, Inc.  
P. O. Box 337, MS 123  
Erwin, TN 37650

SUBJECT: NRC INSPECTION REPORT NO. 70-143/2010-003 AND NOTICE OF VIOLATION

Dear Mr. Amerine:

This letter refers to the inspections conducted from July 1, 2010 to September 30, 2010, at the Nuclear Fuel Services (NFS) facility in Erwin, TN. The purpose of these inspections was to determine whether activities authorized under the license were conducted safely and in accordance with NRC requirements. At the conclusion of the inspections, the findings were discussed on October 7, 2010, with those members of your staff identified in the enclosed report.

The inspections consisted of an examination of activities conducted under the license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of the license. Areas examined during the inspections are identified in the enclosed report. Within these areas, the inspections consisted of a selective examination of procedures and representative records, observations of activities in progress, and interviews with personnel.

Based on the results of these inspections, the NRC has determined that one Severity Level IV violation of NRC requirements occurred. This violation was evaluated in accordance with the NRC Enforcement Policy included on the NRC's Web site at <http://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html>.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its 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/reading-rm/adams.html>.

D. Amerine

2

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

Sincerely,

*/RA/*

Steven J. Vias, 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 No. 70-143/2010-003

cc w/encls:

Timothy Lindstrom  
Vice President, Operations  
Nuclear Fuel Services, Inc.  
Electronic Mail Distribution

Mark Elliott  
Quality, Safety, & Safeguards Director  
Nuclear Fuel Services, Inc.  
Electronic Mail Distribution

Lawrence E. Nanney  
Director, TN Dept. of Environment & Conservation  
Electronic Mail Distribution

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  
P.O. Box 169  
Unicoi, TN 37692

D. Amerine

3

Distribution w/encls:

PUBLIC

nmed@inl.gov

M. Chitty, RII

J. Diaz, RII

P. Habighorst, NMSS

J. Pelchat, RII

K. Ramsey, NMSS

G. Smith, RII

M. Tschlitz, NMSS

S. Vias, RII

\*see previous concurrence

PUBLICLY AVAILABLE

NON-PUBLICLY AVAILABLE

SENSITIVE

NON-SENSITIVE

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

SUNSI REVIEW COMPLETE

OFFICE	RII:DFFI	RII:DFFI	RII:DFFI	RII:DFFI		
SIGNATURE	Via email	Via email 10/28	Via email	JP 10/28/10		
NAME	GSmith*	MChitty*	JDiaz*	JPelchat*		
DATE	11/ /2010	11/ /2010	11/ /2010	11/ /2010		
E-MAIL COPY?	YES    NO	YES    NO	YES    NO	YES    NO	YES    NO	YES    NO

OFFICIAL RECORD COPY  
Rev4.docx

DOCUMENT NAME: G:\FFBI\REPORTS\Draft Inspection Report Folder\NFS\NFS IR 2010-003

## NOTICE OF VIOLATION

Nuclear Fuel Services, Inc.  
Erwin, Tennessee

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

During an NRC inspection conducted from July 1 to September 30, 2010, 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 Materials (SNM) 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 states in part that SNM operations and safety function activities shall be conducted in accordance with approved written procedures.

Section 4.6 of NFS-GH-43, "Safety-Related Equipment Control Program," Revision 19 requires, in part, that all functional tests be performed as written in the appropriate test form. Section 4.6.1 of this same procedure requires that each test step be checked to document that all steps were performed.

Step 4 of the functional test procedure for plant air valve 7A01 requires the verification that all BLEU Preparation Facility (BPF) high enriched uranium (HEU) operations be suspended prior to starting the functional test.

Contrary to the above, on September 17, 2010, the licensee failed to secure or suspend BPF HEU operations prior to performing the functional test on plant air valve 7A01.

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

Pursuant to the provisions of 10 CFR 2.201, NFS, Inc. is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, Region II, and a copy to the NRC Resident Inspector at NFS, Inc., 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, 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, with the basis for your denial, to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington DC 20555-0001.

Enclosure 1

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public 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 2.390(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 73.21.

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

Dated this 4th day of November, 2010

U. S. Nuclear Regulatory Commission  
Region II

Docket No.: 70-143

License No.: SNM-124

Report No.: 70-143/2010-003

Licensee: Nuclear Fuel Services, Inc.

Facility: Erwin Facility

Location: Erwin, TN 37650

Dates: July 1, 2010 – September 30, 2010

Inspectors: G. Smith, Senior Resident Inspector  
M. Chitty, Resident Inspector  
J. Díaz-Vélez, Fuel Facility Inspector

Approved by: S. J. Vias, Chief  
Fuel Facility Inspection Branch 1  
Division of Fuel Facility Inspection

Enclosure 2

## **EXECUTIVE SUMMARY**

Nuclear Fuel Services, Inc.  
NRC Integrated Inspection Report 70-143/2010-003  
July 1 – September 30, 2010

Inspections were conducted by the resident and regional inspectors during normal and off normal shifts in the areas of safety operations, radiological controls, and facility support. The inspectors performed a selective examination of licensee activities which was accomplished by direct observation of safety-significant activities and equipment, tours of the facility, interviews and discussions with licensee personnel, independent verification of safety system status and limiting operation conditions, corrective actions, and a review of facility records.

### **Safety Operations**

- The inspectors noted one violation regarding the failure to suspend high enriched uranium operations prior to testing a safety-related component. (Paragraph 2.a)
- Criticality controls were followed throughout the facility. (Paragraph 2.b)
- Fire Protection equipment and barriers were adequately maintained. (Paragraph 2.c)

### **Radiological Controls**

- The licensee adequately implemented the radiation protection program consistent with the license and regulations. The licensee's lack of a system to share operational experience was identified as an Inspector Followup Item. (Paragraph 3)

### **Facility Support**

- Adverse conditions were adequately identified and evaluated. (Paragraph 4)

Attachment  
Supplemental Information

## **REPORT DETAILS**

### **1. Summary of Plant Status**

The facility began the period with the Navy fuel manufacturing facility (FMF), Uranium (U)-Oxide, U-Metal, Solvent Extraction (SX), and the down-blending (DB) lines located in the Blended Low Enriched Uranium (BLEU) Preparation Facility (BPF) operating. U-Aluminum and all systems located in the commercial development line (Building 301) remained shutdown pursuant to a confirmatory action letter (CAL) issued on January 7, 2010. Following completion of the third restart readiness assessment which focused on the Uranium-Aluminum (U-Al) Process Line and Building 301 Column Dissolvers (NRC Inspection Report 70-143/2010-008), restart of these operations was authorized by NRC letter on July 6. All the lines mentioned above continued in some form of operation until the end of the period. All remaining systems located in the commercial development line (Building 301) remained in a shutdown condition pursuant to the CAL.

### **2. Safety Operations**

#### **a. Plant Operations (88135)**

#### **(1) Inspection Scope and Observations**

##### **Operating Area Observations**

The inspectors performed daily tours of the plant operating areas and determined that equipment and systems were operated safely and in compliance with the license. Daily operational meetings and turnover meetings were observed throughout the period where production status and operational issues were discussed. 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 focused on plant operations, safety related equipment (valves, sensors, instrumentation, in-line monitors, scales, etc) and items relied on for safety (IROFS).

The daily tours included walk-downs of the BPF, FMF, storage areas, vaults, and the waste treatment facility. The inspectors verified that there was adequate staffing and that operators were attentive to their duties as well as the status of various alarms and annunciators. The activities observed by inspectors during normal and upset conditions were performed in compliance with procedures and station limits. The inspectors noted that safety controls were in place and were being controlled. The inspectors verified the adequacy of communications between supervisors and operators in the operating areas. The inspectors walked down sections of the standard operating procedures and verified that IROFS were identified and operable in each of the areas. The inspectors reviewed log books, lockout tag-out records, and Letters of Authorization (temporary modifications) to obtain information concerning operating trends and activities. The inspectors verified the licensee actively pursued corrective actions for conditions requiring temporary modifications and that compensatory measures were prescribed as required.



On July 31, the inspectors observed the restart of the U-AI system following a restart assessment on July 6. This restart also included the initial operation of the size reduction station which sections High Enriched Uranium (HEU) test reactor fuel into smaller elements such that they can then be placed into the caustic dissolvers. The inspectors evaluated the licensee's performance in regards to management decision-making, communications, and procedural compliance. The inspectors noted that NFS took a slow and measured approach to the start-up evolution. On September 27, during a change-out of a centrifuge bowl, an operator noted a significant amount of dried material that had plated out on the inside of the centrifuge housing surrounding the centrifuge bowl. Following a review by NFS management using NFS' "unusual condition" evaluation process, NFS determined this to be an unusual condition and reported the condition to the NRC Headquarters Operations Officer (HOO) as Event Notification (EN) 46284. The buildup of material was deemed an unanalyzed condition and reported pursuant to 10 CFR 70, Appendix A, Section (b)(1). NFS' immediate corrective actions included a suspension of operations in the U-AI area, a non-destructive assay (NDA) material scan of the bowl housing, and the formation of an engineering evaluation team to analyze the condition of the U-AI system and develop long term corrective actions. Initial results of the NDA scan revealed the maximum amount of Special Nuclear Material (SNM) holdup was approximately 46 grams which was considered a normal value of SNM for the U-AI centrifuge housing. The evaluation is ongoing and as of the end of the inspection period, the U-AI system remained in a shutdown condition. EN 46284 will be tracked as Licensee Event Report (LER) 70-143/2010-003-01. This item will remain open.

During the first two weeks of September, NFS performed laboratory testing and analyses of eight Uranium-Hexafluoride ( $UF_6$ ) hoke tubes. This process involved moving the shipping the drums containing the hoke tubes from an internal storage area to the lab, removal of the tubes from the shipping containers, and performing the required tests and analyses. The resident inspectors observed movement of the shipping drums, opening of the shipping containers, and the sampling of the atmospheres of both the inner and outer shipping containers as they were opened. The inspectors noted that the personnel opening the drums, taking atmosphere samples, and removing the tubes were wearing Personal Protective Equipment (PPE) appropriate for the tasks involved. The inspectors also observed the testing and analysis of the tubes. This included external contamination surveys, weight measurements at various stages, pressure measurements, venting, valve removal, content removal, analysis, and time measurements. The inspectors noted that although the calculated pressures of the eight tubes ranged from 13 psig to 263 psig, the pressures, as measured, ranged from sub-atmospheric to just over 15 psig. The lower than anticipated pressures represented a significant reduction in the in risk potential associated with these cylinders. The actual pressures were expected to be lower due to conservatism built into the initial calculations. The inspectors observed that the laboratory personnel involved followed HEU-12-05-01, "Test Plan:  $UF_6$  Dissolution from Hoke Tube Cylinders," and that plant radiological and chemical safety procedures were followed. The inspectors noted that a representative from the industrial/chemical safety staff who was also present to monitor the work placed a hold on the activity after personnel taking initial atmospheric readings reported that the readings of their first sample, pulled from the inter-container space on

the first drum, were unclear. When the activity was restarted the inspectors noted that additional samples taken from the inner and outer drums of all the containers involved yielded no positive readings.

On September 17, while touring the Solvent Extraction (SX) area in building 333, the inspectors became aware of a failure of an IROFS that necessitated the shutdown of the SX area. The IROFS in question was a plant air valve that had just failed an SRE test. This air valve supplied air to the entire building 333 complex. The inspectors discussed the issue with plant supervision and noted that only SX needed to be shut down as the remaining HEU processes, namely U-Oxide and U-Al, were already shut down for previous operational reasons. The inspectors followed up on the issue and noted that step 4 of the safety-related equipment (SRE) test for the plant air valve (7A01) required a complete shutdown of all HEU processes prior to initiation of the SRE test. The inspectors discussed this issue with supervision and concluded that this was indeed a failure to follow plant procedures. The failure to follow procedures was attributed to ineffective communication between plant supervisors.

The plant air IROFS is a mitigating component of an analyzed accident sequence where plant air is lost and HEU backs up into the plant air system and ultimately migrates to an unfavorable geometry, such as a plant air receiver. However, although the plant air valve was inoperable, the remaining IROFS in the system ensured that the criticality scenario remained highly unlikely and the performance requirements of 10 CFR 70.61 continued to be met.

The failure to shutdown down SX in accordance with plant procedures was deemed to be more than minor because it dealt with the failure to shutdown systems containing HEU prior to SRE testing. Given a different testing scenario, failure to secure HEU operations during SRE testing may have resulted in more significant consequences. For this reason, this failure to follow plant procedures was considered more than a minor violation (VIO) of NRC requirements, VIO 70-143/2010-003-02. (Failure to Follow Plant Procedures During SRE Tests)

### Plant Tours

The inspectors performed periodic tours of out-lying facility areas during the inspection period and determined that equipment and systems were operated safely and in compliance with the license. The focus of these tours centered around the evaluation of potential missile hazards and missile protection features, combustible material storage and fire loading, hazardous chemical storage, storage of compressed gas containers, potential degradation of plant security features, and potential fire hazards. During these tours, the inspectors also verified that required notices to workers were appropriately and conspicuously posted in accordance with 10 CFR 19.11.

### Plan-of-the-Day-Meetings.

The inspectors attended various plan-of-the-day meetings throughout the inspection period in order to determine the overall status of the plant. The inspectors evaluated the adequacy of the licensee's response to significant plant issues as well as their approach to solving various plant problems.

### Safety-Significant System Walk-down

During the inspection period, the inspectors performed two walk-downs of safety significant systems involved with the processing of SNM. As part of the walk-downs, inspectors verified the as-built configuration matched approved plant drawings. The inspectors interviewed operators in order to ensure that plant personnel were familiar with the assumptions and controls associated with these systems as well as the IROFS and IROFS instrumentation for maintaining plant safety. The inspectors also verified that these assumptions and controls were properly implemented in the field. The inspectors reviewed the related Integrated Safety Analysis (ISA) to verify the system's ability to perform its functions could not be affected by outstanding design issues, temporary modifications, operator workarounds, adverse conditions, or other system-related issues. The inspectors also verified that there were no conditions that would degrade plant performance, the operability of IROFS, safety-related devices, or other support systems essential to safety system performance. Examined systems included:

- Area 100
- U-AI System

To determine the correct system alignment, the inspectors reviewed the procedures, drawings, related ISAs, and 10 CFR 70.61. During the walk-downs, the inspectors verified the following:

- criticality safety hazards and controls were maintained;
- chemical safety hazards and controls were maintained;
- the configuration of metal and glass columns was maintained in accordance with Nuclear Criticality Safety Evaluations;
- valves were correctly positioned and did not exhibit leakage that would impact the function of any given valve;
- electrical power was available as required;
- major system components were correctly labeled, lubricated, cooled, ventilated, etc.;
- hangers and supports were correctly installed and functional;
- tagging clearances were appropriate with breakers and valves correctly positioned and locked as required by the lockout/tagout program;
- cabinets, cable trays, and conduits were correctly installed and functional;
- visible cabling appeared to be in good material condition;
- essential support systems were operational; and,
- ancillary equipment or debris did not interfere with system performance.

### (2) Conclusions

The inspectors noted one violation regarding procedural compliance during testing of an IROFS.

b. Criticality Safety (88135)

(1) Inspection Scope and Observations

During daily production area tours, the inspectors verified various criticality controls to be in place, that personnel followed criticality station limit cards, and that containers were adequately controlled to minimize potential criticality hazards. The inspectors sampled a number of criticality-related IROFS for operability and for adequate identification in the field as well as on drawings. The inspectors noted that operators were knowledgeable of the requirements associated with IROFS.

(2) Conclusions

No findings of significance were identified.

c. Fire Protection

Routine Fire Inspection (IP 88135)

(1) Inspection Scope and Observations

During daily plant tours, the inspectors verified that transient combustibles were being adequately controlled and minimized and that fire barriers located between fire areas were being properly maintained.

During the inspection period, the inspectors conducted a fire safety tour of building 307. The inspectors verified adequate control of combustible material. The inspectors walked down various fire suppression components and systems that supplied building 307 and verified these systems were properly aligned and operational. The inspectors verified that various aspects of the fire protection/prevention strategies conformed to the applicable nuclear criticality safety evaluation.

(2) Conclusions

No findings of significance were identified.

**3. Radiological Controls**

Radiation Protection (88135)

(1) Inspection Scope and Observations

During tours of the production areas, the inspectors verified workers complied with health physics procedures. The inspectors noted that plant workers properly wore dosimetry, used protective clothing in accordance with applicable Radiological Work Permits (RWPs), and properly frisked upon exiting the controlled area. The inspectors noted that radiation area postings complied with plant procedures and included radiation

maps with up-to-date radiation exposure rates levels. The inspectors monitored the operation of radiation protection instruments and reviewed the calibration due dates of those instruments. Radiation work permits were adequately developed and implemented in order to ensure personnel exposure was maintained as low as reasonably achievable (ALARA).

On July 6, the inspectors performed a detailed review of a standard Safety Work Permit (SWP) #10-09-012. This SWP included radiological requirements detailed under the RWP section. The work associated with the SWP was to replace pump A201 in the FMF under work request #144461. The inspectors verified that craft personnel complied with the prescribed controls and precautions. The inspectors noted that the RWP contained adequate requirements concerning the radiation exposure rates, respiratory equipment, dosimetry, contamination levels, special tools and equipment, airborne radioactivity, and containment devices. The area was effectively controlled by health physics personnel. The SWP was prominently posted for employees' review and observation. Workers entering the SWP area signed onto the SWP, verifying their knowledge of the entry requirements.

(2) Conclusions

No findings of significance were identified.

Radiation Protection (IP 88030)

(1) Inspection Scope and Observations

The inspectors reviewed NFS-GH-908, Revision 5, Radiation Protection (RP) Program (21T-07-0610) to identify the basic elements of the RP program, including the different organizations that participate in the program, their relationships and responsibilities. The inspectors reviewed the licensee's evaluation of the Radiation Safety Program for 2009 (21T-09-0156), including supporting documents. The inspectors noted that the licensee reviewed the RP program for content and implementation. The inspectors also reviewed the licensee's Respiratory Protection Audit for 2009 (21T-09-1260). The inspectors interviewed Health Physics and Radiological Protection staff to determine their involvement in the RP program.

The inspectors reviewed several RP procedures to determine if procedures were reviewed periodically, approved by the required individuals, and were adequate for the scope of activities intended. The inspectors noted that RP procedures (1) were reviewed and updated when necessary, (2) were approved by the proper individuals, and (3) contained reasonable level of detail for the operations involved.

During various tours of the operating areas, the inspectors verified worker compliance with RP/health physics procedures and practices. The inspectors observed that plant workers (1) wore dosimetry properly, (2) used protective clothing in accordance with applicable RWPs, and (3) performed proper entries and exits of areas controlled for radiological purposes.

The inspectors performed a detailed review of Special Safety Work Permit (SSWP) #13869, which was developed for the removal of building 333 roofing material and placing waste generated in recommended waste containers. This SSWP included radiological control requirements detailed under the Radiation Safety section. The inspectors observed that the roofing contractor's personnel complied with the prescribed radiological safety controls and precautions. The inspectors noted that the SSWP contained radiological controls commensurate with the scope of the work to be performed. The inspectors further noted that the SSWP was prominently posted for employee review and observation. Workers entering the SSWP area signed the SSWP, verifying their knowledge of the entry requirements. The inspectors observed the radiological protection staff performing in-process removable contamination surveys. The inspectors also observed the RP staff processing the survey samples and reviewed the results of the survey. The inspectors observed licensee RP staff performing routine removable contamination surveys. The inspectors also reviewed SSWPs #13912, #13903, #13846, #13835, and #13894. For SSWPs requiring workers to wear respiratory protection, the inspectors verified that a random selection of workers was properly fit tested and trained (or re-trained) for the use of respirators.

For SSWPs observed during this inspection, the inspectors examined instruments used for current calibration stickers and reviewed instrument calibration records. The inspectors also reviewed the calibration of bioassay instrumentation, specifically the Kinetic Phosphorescence Analysis (KPA) unit and the lung counter unit. The inspectors interviewed licensee personnel responsible for performing daily checks and measurements with both instruments and observed the performance of measurements. The inspectors noted that both instruments were maintained in good operating conditions. The inspectors also noted that standards used for the calibration of the KPA unit were traceable to national standards.

The inspectors reviewed personnel exposure data for calendar years (CYs) 2009 and 2010 (January to June) to verify that exposures were maintained ALARA and within the limits of 10 CFR 20.1201. The doses were found well below the regulatory limits requiring monitoring. The inspectors held discussions with the Health Physics staff regarding the integration of the dose monitoring program (e.g., external exposures, internal exposures, bioassays, area air sampling, breathing zone air sampling, and the respiratory protection program), to determine if the exposure control program was adequately implemented.

The inspectors noted that the licensee is currently monitoring the dose to two declared pregnant women. The inspectors noted that the doses to the embryo-fetuses are maintained well below regulatory limits in 10 CFR 20.1208.

The inspector also reviewed dose records for the individual with the highest internal exposure in 2010 (January to June data only), and determined that the exposure to the individual resulted from two doses assigned from lapel air samples taken while performing an SSWP #10-33-025, "Repair/replace valves, pumps, filters, unplug lines, etc., and Perform SRE/IROFS Test on enclosure overflows." The inspectors reviewed the SSWP and determined that the licensee's development of the SSWP was adequate and included good radiological control practices, however, the lapel air samples resulted in dose investigations. Dose investigations were performed to ensure doses were

maintained ALARA. After the dose investigations, the licensee modified the SSWP to require respiratory protection. From the investigation, the licensee learned that the reason for unexpected airborne contamination resulted from equipment that had dried up during extended shutdown.

The inspectors interviewed the Health Physics staff about the means used by the licensee to ensure that operational experience of events like this get captured and applied in future planning of SSWPs to keep doses ALARA. The inspectors determined that the licensee had no means to share this operational experience nor does the licensee enter issues like this in the plant's corrective action program. The Health Physics staff indicated that events like this (dose investigations) were not entered in the corrective action program because they were the result of routine investigations triggered by a standard operating procedure. The inspectors noted that the licensee was in the early stages of developing a site wide program to share operational experience in a formal manner. The inspectors identified the licensee's lack of a system to share operational experience as an Inspector Follow-up Item (IFI) to be reviewed at a future inspection because the item could have impact in future ALARA planning if not corrected. IFI-70-143/2010-003-03.

(2) Conclusions

No findings of significance were identified. One IFI that could have impact in future ALARA planning was identified. (IFI-70-143/2010-003-03)

4. **Facility Support**

Management Organization and Controls (IP 88135)

(1) Inspection Scope and Observations

The inspectors reviewed the plant's corrective action program to ensure that items adverse to safety were being identified and tracked to closure. To aid in the identification of repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed frequent screenings of items entered into the corrective action program (CAP).

(2) Conclusions

No findings of significance were identified.

5. **Event Follow-up**

(1) Inspection Scope and Observations

The inspectors reviewed the 30 day written EN 46086 which involved a degradation of the public address (PA) system. On July 12, an electrical fault in the fire alarm system disabled the portion of the public address system that activates the fire alarm, criticality alarm, take-cover alarm, and the CO<sub>2</sub> discharge alarm. The licensee instituted

compensatory measures for the loss of alarm capability which included a SNM stop movement order, additional fire patrols, a restriction of hot work activities, and an evacuation of non-essential personnel from production areas. This event was reported to the NRC HOO on July 12. The event was reported pursuant to 10 CFR 70.50 (b)(2) where equipment fails to function as designed when the equipment is required to prevent exposure to radiation exceeding regulatory limits. Since the PA system is part of the criticality alarm system (CAS), the CAS was inoperable due to the degraded PA system. The issue was entered into the CAP program as item #25564. The PA system was repaired, tested, and returned to service on July 13. On July 15, the licensee made an updated report to the HOO and noted that, after completing a detailed follow-up investigation, the recently reported PA system failure did not impact the CAS. Thus the original justification for the EN was no longer valid and ultimately the event did not meet reportability requirements. The EN was not retracted, but updated to include the findings from NFS' investigation. The inspectors monitored NFS' actions, reviewed the conduct of NFS' investigation, and reviewed NFS' 30 day written response dated August 10. The inspectors had no further questions. LER 70-143/2010-003-04 is considered closed.

(2) Conclusions

No findings of significance were identified. EN 46086 was properly reported to the NRC HOO in accordance with applicable regulations.

6. Exit Meeting

The inspection scope and results were presented to members of the licensee's staff at various meetings throughout the inspection period and were summarized on October 7, with the licensee's management. No dissenting comments were received from the licensee. Proprietary information was discussed but not included in the report.



## ATTACHMENT

### 1. Key Points of Contact

<u>Name</u>	<u>Title</u>
David Amerine	President
Ron Dailey	Engineering Director
Gary Darter	Program Management Director
Rik Droke	Senior Regulatory Advisor
Mark Elliott	Quality, Safety, & Safeguards Director
Kenneth Engle	Work Management Section Manager
Tim Lindstrom	Vice President Operations
Marie Moore	Environmental Protection & Industrial Safety Section Manager
John Nagy	Assurance Director
Randy Shackelford	Nuclear Safety & Licensing Section Manager
Michael Tester	Radiation Protection Unit Manager
Jennifer Wheeler	Licensing & ISA Manager

### 2. List of Items Opened, Closed, and Discussed

#### Opened

70-143/2010-003-01	LER	EN 46284: Unanalyzed Buildup of Material In U-AI Centrifuge Housing
70-143/2010-003-02	VIO	Failure to Follow Plant Procedures During SRE Testing
70-143/2010-003-03	IFI	Lack of Radiation Protection Operating Experience System

#### Opened & Closed

70-143/2010-003-04	LER	EN 46086: Degradation of the PA System
--------------------	-----	--

#### Closed

None

### 3. List of Inspection Procedures Used

88135	Resident Inspection Program For Category I Fuel Cycle Facilities
88030	Radiation Protection