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**CERTIFIED MAIL**  
**RETURN RECEIPT REQUESTED**

21G-10-0069  
GOV-01-55-04  
ACF-10-0097

March 19, 2010

U.S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, DC 20555

References: 1) Docket No. 70-143; SNM License 124  
2) NRC Inspection Report No. 70-143/2009-004 and Notice of Violation,  
Dated February 12, 2010

**Subject: Reply to Notice of Violation (VIO 70-143/2009-004-01)**

Dear Sir:

Pursuant to the requirements of 10 CFR 2.201, Nuclear Fuel Services, Inc. (NFS) hereby submits the attached response to the subject violation identified in the referenced NRC inspection report. NFS regrets that the response was not submitted within the required time period, and an investigation into the reasons why the March 14, 2010 due date was missed is underway.

If you or your staff have any questions, require additional information, or wish to discuss this matter further, please contact me, or Mr. Mark Elliott, Director of Safety and Security, at (423) 743-1705. Please reference our unique document identification number (21G-10-0069) in any correspondence concerning this letter.

Sincerely,

**NUCLEAR FUEL SERVICES, INC.**

*David B. Amerine*  
David B. Amerine, President

TE07  
NMSS

copy:

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### **Restatement of Violation**

During an NRC inspection conducted from October 1, 2009, through December 31, 2009, violations of NRC requirements were identified. In accordance with the NRC Enforcement Policy, the violations are listed below:

10 CFR 70.72 (a)(2) requires, in part, that prior to implementing any change to the facility, the impact of the change on the control of licensed material shall be addressed.

Contrary to the above, a change was made to the facility to install uranium hexafluoride sublimation stations. The impacts from fluorine oxidation of components that controlled licensed material, namely the flexible hose piping which passed special nuclear material from a uranium hexafluoride cylinder to the sublimation station, were not addressed prior to implementing the change and placing the system in service. This event was self revealing following a small glove box fire on November 14, 2009, when a hose containing uranium hexafluoride was damaged by a rapid oxidation reaction with fluorine gas. The licensee's failure was of low safety significance because the accident was adequately bounded by the integrated safety analysis and the installed items relied on for safety ensured that the performance requirements were met.

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

### **The Reason for the Violation, or, if Contested, the Basis for Disputing the Violation or Severity Level**

NFS concurs that the violation took place as stated. In 1999, NFS was awarded a contract for storage of Department of Energy UF<sub>6</sub> and non-UF<sub>6</sub> solids. In 2002, a subsequent contract was awarded to perform development testing of the stored materials. The purpose of the contract was to perform sufficient testing to facilitate the development of a firm, fixed price to build, install, and operate process equipment for conversion of the materials to a more stable form. Due to the quantity of radioactive material involved, and existing license constraints, larger Type 5A/B UF<sub>6</sub> cylinders were not sampled and tested. In 2004, NFS was awarded a final contract to design, build, and operate a facility to convert the UF<sub>6</sub>.

In 2006, a process hazards analysis and preliminary design for the proposed facility was completed for NFS by a contractor. The process hazards analysis did not address fluorine as an oxidation hazard because the potential presence of fluorine in the 5A/B UF<sub>6</sub> cylinders was not recognized. Since the potential for the presence of fluorine was unknown, certain components of the process equipment, namely the flexible hose piping, was not designed for application in a strong oxidizer environment.

Subsequent to the incident that occurred on November 14, 2009, where a high pressure release from a failed process hose resulted in an oxidation event, a root cause investigation was initiated (Investigation #10219). The investigation revealed inadequacies in hazards analysis and standards, policies, and administrative controls.

### **The Corrective Steps That Have Been Taken and the Results Achieved**

Process operations for conversion of UF<sub>6</sub> and non-UF<sub>6</sub> solids were suspended on November 14, 2009. The facility was placed in a "safe stand-by" operational mode pending full investigation (Investigation #10219) of the cause of the incident and implementation of corrective actions to ensure safe operations.

In addition, two key procedures for Configuration Management (NFS-CM-004, "NFS Change Control Process", and NFS-TS-009, "Configuration Management of Process Change") have been revised and are applicable to all new projects and major changes to existing processes. These documents define the program required to maintain configuration control of processes and prevent changes to a process without appropriate technical evaluation. The evaluations defined by this program are performed to determine if the proposed new process or change to an existing process is sufficiently bounded to minimize or prevent challenges to safety bases, challenges to safety and regulatory compliance, degradation of quality, degradation of material produced by the process, and/or process anomalies. Process changes either due to new processes or changes to existing processes must be documented by an approved Technical Basis in accordance with NFS-CM-004.

These corrective steps have resulted in more thorough technical basis documents, thus improving the quality of those analyses being performed to assess the impacts of a change.

### **The Corrective Steps That Will Be Taken To Avoid Further Violations**

Refer to corrective steps taken above.

### **The Date When Full Compliance Will Be Achieved**

Full compliance was achieved on January 15, 2010, when NFS-CM-004, Revision 4, "NFS Change Control Process", and NFS-TS-009, Revision 1, "Configuration Management of Process Change" were implemented.