



**NUCLEAR FUEL SERVICES, INC.**

*a subsidiary of The Babcock & Wilcox Company*

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RETURN RECEIPT REQUESTED**

21G-12-0022  
GOV-01-55-04  
ACF-12-0044

February 8, 2012

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

**Subject: 30-Day Written Notification of Event (NRC Event No. 47578)**

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

Gentlemen:

On January 9, 2012, at approximately 1432 hours (EST), Nuclear Fuel Services, Inc. (NFS) made a telephone notification to the Nuclear Regulatory Commission (NRC) Operations Center of an event for which 10CFR70, Appendix A, paragraph (c) requires a notification. This letter provides the 30-day written notification of that event.

If you or your staff have any questions, require additional information, or wish to discuss this matter further, please contact me, or Mr. Randy Shackelford, Nuclear Safety and Licensing Manager, at (423) 743-2504. Please reference our unique document identification number (21G-12-0022) in any correspondence concerning this letter.

Sincerely,

**NUCLEAR FUEL SERVICES, INC.**

Mark P. Elliott, Director  
Quality, Safety, and Safeguards

SEB/pj

Attachment: 30-Day Notification of Reportable Event

IE72  
MHSS

Copy:

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**Attachment**

***30-Day Notification of Reportable Event***

(3 pages to follow)

### **30-Day Notification of Reportable Event**

**1. The date, time, and exact location of the event**

The issue was identified on January 9, 2012, at approximately 1150 hours (EST) when vapors were observed to be present in the Bulk Chemical Storage Area. The report of the event to the Nuclear Regulatory Commission (NRC) Operations Center was made on January 9, 2012, at approximately 1432 hours (EST). The location of the event is the Nuclear Fuel Services, Inc. (NFS) site (Bulk Chemical Storage Area), located in the town of Erwin, Unicoi County, Tennessee.

**2. Radiological or chemical hazards involved, including isotopes, quantities, and chemical and physical form of any material released**

There were no radiological hazards associated with the event. Approximately 750 gallons of nitric acid leaked into a dike at the NFS Outside Bulk Chemical Storage Area. The chemical hazards involved with the event include those associated with liquid nitric acid, nitric acid vapor, and other nitrogen compound vapors. There were no NRC licensed materials and no hazardous chemicals produced from licensed material associated with the event. No radiological or chemical materials were released from the NFS site. Meteorological conditions were such that the vapors remained onsite, and were dissipated by light rain.

**3. Actual or potential health and safety consequences to the workers, the public, and the environment, including relevant chemical and radiation data for actual personnel exposures to radiation or radioactive materials or hazardous chemicals produced from licensed materials (e.g., level of radiation exposure, concentration of chemicals, and duration of exposure)**

There were no actual safety consequences to the workers, the public, or the environment associated with the event. There were also no personnel exposures to radiation, radioactive materials, or hazardous chemicals produced from licensed materials. Two individuals were evaluated by onsite medical for potential exposure to nitric acid vapor and released with no injuries. The potential health and safety consequences to the workers, the public, or the environment from a nitric acid release, if unmitigated, could include human injury and/or environmental contamination.

Air sampling for nitric acid vapors was conducted throughout the event at locations adjacent to the incident and other strategically chosen areas of the plant. Monitoring results indicated only the presence of fumes and no hazardous concentrations of nitric acid vapors.

The release was contained in the dike; however, as a precautionary measure, storm water discharge points were immediately closed and sampled. The results of the samples indicated no decrease in pH.

The incident had no offsite impact. The event did not meet the criteria of an Alert or Site Area Classification in accordance with the NFS Emergency Plan. The release was not reportable under CERCLA or EPCRA in accordance with 40 CFR.

**4. The sequence of occurrences leading to the event, including degradation or failure of structures, systems, equipment, components, and activities of personnel relied on to prevent potential accidents or mitigate their consequences**

The nitric acid tank dike located outside in the Bulk Chemical Storage Area was being prepared for refurbishment. The Nitric Acid Tank had been drained to prepare for this work. To provide nitric acid to the NFS facilities, a nitric acid tanker was procured. New piping, valves, and flow totalizer were installed in the nitric acid dike to support temporary service from the nitric acid tanker to the NFS facilities. The temporary service installation had been completed on January 4, 2012.

On January 9, 2012, upon first use of the equipment, the transfer was monitored for leaks during the first 15 minutes of the transfer. No leaks were observed. However, within the first hour of service, nitric acid was observed leaking into the dike. When the leak was observed, NFS dispatched responders to the scene and activated the Emergency Response Organization (ERO).

**5. The probable cause of the event, including all factors that contributed to the event and the manufacturer and model number (if applicable) of any equipment that failed or malfunctioned**

The investigation revealed that the installed in-line flow totalizer was not compatible with nitric acid and failed after approximately one (1) hour of service, leaking approximately 750 gallons of nitric acid into the containment dike. Equipment in the HEU and Production Facilities did not fail or malfunction.

6. **Corrective actions taken or planned to prevent occurrence of similar or identical events in the future and the results of any evaluations or assessments**

The issue was entered into NFS' Problem Identification, Resolution, and Correction System (PIRCS) as Problem Identification No. P32815. Investigation No. 13929, with identification of associated corrective actions, is in progress.

7. **If the event involved an area or equipment with an approved Integrated Safety Analysis, whether the event was identified and evaluated in the Integrated Safety Analysis**

The event was not associated with an area having an approved Integrated Safety Analysis (ISA); and, the event was not specifically identified and evaluated in the ISA. An ISA is not required for the Bulk Chemical Storage Area.

8. **The extent of exposure of individuals to radiation or radioactive materials**

No individuals were exposed to radiation or radioactive materials as a result of this event.