



1205 banner hill road ■ erwin, tn 37650 ■ phone 423.743.9141
www.nuclearfuelservices.com

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21G-16-0217
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December 22, 2016

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

Subject: 30-Day Written Notification of Event (NRC Event No. 52404)

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

Gentlemen:

On December 1, 2016 at approximately 1505 hours (ET), Nuclear Fuel Services, Inc. (NFS) made a telephone notification to the Nuclear Regulatory Commission (NRC) Operations Center of an event for which 10 CFR 70.50(b)(2) 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 at (423) 743-1705, or Mr. Randy Shackelford, Nuclear Safety and Licensing Manager, at (423) 743-2504. Please reference our unique document identification number (21G-16-0217) in any correspondence concerning this letter.

Sincerely,

NUCLEAR FUEL SERVICES, INC.

A handwritten signature in black ink, appearing to read 'Richard J. Freudenberger', written in a cursive style.

Richard J. Freudenberger, Director
Safety and Safeguards

RKR/lah

Attachment: 30-Day Notification of Reportable Event

IE72
NMSS

Copy:

Regional Administrator
U.S. Nuclear Regulatory Commission, Region II
245 Peachtree Center Avenue NE, Suite 1200
Atlanta, GA 30303-1257

Mr. Marvin Sykes
Chief, Projects Branch I
Division of Fuel Facility Inspection
U.S. Nuclear Regulatory Commission, Region II
245 Peachtree Center Avenue NE, Suite 1200
Atlanta, GA 30303-1257

Mr. Leonard Pitts
Senior Fuel Facility Inspector
U.S. Nuclear Regulatory Commission, Region II
245 Peachtree Center Avenue NE, Suite 1200
Atlanta, GA 30303-1257

Mr. Kevin M. Ramsey
Senior Project Manager
Fuel Manufacturing Branch
Division of Fuel Cycle Safety and Safeguards
Office of Nuclear Material Safety, Safeguards, and Environmental Review
U. S. Nuclear Regulatory Commission
Two White Flint North
11555 Rockville Pike
Rockville, MD 20852-2738

Mr. Charles Stancil
Senior Resident Inspector
U. S. Nuclear Regulatory Commission

Attachment

30-Day Notification of Reportable Event

(2 pages to follow)

30-Day Notification of Reportable Event**1. The date, time, and exact location of the event**

Event Date/Time: December 1, 2016, at approximately 1014 hours (ET). Event Location: Nuclear Fuel Services, Inc. (NFS), Erwin, TN, Building 305-1; First floor offices and lunchroom.

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

Not Applicable.

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 health or safety consequences. The potential consequence was that in the unlikely event of a nuclear criticality accident, evacuation could have been delayed for personnel in the affected areas with a resultant increase in postulated dose. Fire Alarm and Public Address (PA) system responses could have similarly been delayed.

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

At approximately 1014 hours (ET), on December 1, 2016, the speakers for a portion of the bottom floor of Building 305 offices and lunch room areas were inadvertently disabled during a scheduled activity to remove obsolete equipment. Specifically, a previously unidentified but crucial terminal board was removed from the speaker circuit which disabled a portion of the speakers in that zone. Special Nuclear Material (SNM) is not processed, handled, or stored within the areas where the speaker system was disabled; however, these areas require evacuation in the unlikely event of a nuclear criticality accident as described in the NFS Emergency Plan.

As designed to respond to a circuit fault, the Fire Alarm Control Panel immediately indicated a trouble signal when the speaker circuit was disabled. Once notified of the trouble signal, plant personnel initiated a series of troubleshooting and compensatory actions including restricting access to the affected areas to essential personnel only and establishing radio communications between personnel continuously monitoring the alarm panel and those essential personnel in the affected area performing repairs.

The speaker system was repaired by restoring the interrupted circuit, which additionally cleared the speaker zone trouble signal. On December 1, 2016, at

approximately 1159 hours (ET), full compliance was demonstrated by successfully performing a speaker system test in the affected areas and normal access was restored.

NFS notified the NRC Resident Inspector on December 1, 2016.

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 probable cause of the event was human performance errors.

The speaker circuit for the affected area covered by this speaker zone included inputs from the Criticality Accident Alarm System, Fire Alarm and PA system and an unused, obsolete Muzak system. The Muzak system connection into the speaker circuit was an undocumented legacy system scheduled for removal. In October 2016, NFS performed testing to evaluate controls and methodology to use when removing this system and correctly concluded that electrical power to Muzak could be safely removed. However, this test, subsequent walk down of the work area by the work crew, and standard work practices failed to identify the needed terminal board that provided the physical interface between portions of the circuit. Subsequently, when the evolution was performed on December 1, 2016, the terminal board was removed from the circuit resulting in the loss of speakers for the affected areas.

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**

An event critique was performed and lessons learned were fed back to the work crew performing the maintenance. Specific lessons learned included establishing the expectation to check voltage and resistance and performing an end-to-end walkdown prior to removal of abandoned components or wiring. Further similar work was restricted until it was proven safe to proceed.

The event was documented in the NFS correction action program and is being evaluated to identify whether additional vulnerabilities exist and to drive additional longer term corrective actions to ensure proper removal of abandoned equipment.

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**

Not Applicable.

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

No exposures occurred.