

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

INSPECTION REPORT

Inspection No. 03006580/2005001
Docket No. 03006580
License No. 45-08890-02
Licensee: Froehling and Robertson, Inc.
Address: 3015 Dumbarton Road
Richmond, VA 23228
Locations Inspected: 6181 Rockfish Gap Turnpike, Crozet, Virginia
Loew's construction site, Waynesboro, Virginia
Inspection Dates: June 1, 2005

Inspector:	/RA/ Original Signed by John Kinneman for	07/08/05
	_____ Orysia Masnyk Bailey Health Physicist	_____ date
Approved By:	/RA/	07/08/05
	_____ John D. Kinneman, Chief Materials Security and Industrial Branch Division of Nuclear Materials Safety	_____ date

EXECUTIVE SUMMARY

Froehling and Robertson, Inc.
NRC Inspection Report No. 03006580/2005001

A reactive announced safety inspection was conducted on June 1, 2005, at the Crozet, Virginia office of Froehling and Robertson, Inc., and at a temporary jobsite at the Loew's construction site in Waynesboro, Virginia. The inspection included interviews with licensee representatives and an examination of records surrounding the circumstances of an event involving a damaged gauge. The corporate Radiation Safety Officer (RSO) brought documentation and records for all the licensee's locations to facilitate review of the licensee's entire radiation safety program. The inspection included a detailed review of the licensee's procedures and practices for securing and controlling licensed material.

On May 17, 2005, one of the licensee's operators was using a Troxler Model 3411 portable gauge at a temporary job site (GEI project site) in Charlottesville, VA. After taking a field measurement, the gauge operator placed the gauge on the ground and walked approximately 20 feet away from it to observe work taking place in a trench. During this time, one tire of sheepsfoot roller rolled over the gauge. The gauge was damaged, but the sources remained shielded within the gauge. The operator roped off the area and remained with the gauge until additional staff from the Crozet, Virginia branch office arrived with a survey meter to assess the radiological conditions of the site and secure the gauge for transport back to the office. The next day the corporate RSO performed a leak test which demonstrated that there was no source leakage and returned the gauge to the manufacturer for repair.

10 CFR 20.1801 requires that the licensee secure from unauthorized removal or access licensed materials that are stored in controlled or unrestricted areas. 10 CFR 20.1802 requires that the licensee control and maintain constant surveillance of licensed material that is in a controlled or unrestricted area and that is not in storage.

The failure to maintain control over the gauge is a violation of regulatory requirements.

REPORT DETAILS

I. Organization and Scope of the Program

a. Inspection Scope

The inspector reviewed licensee records and interviewed cognizant licensee personnel at the licensee's Crozet, Virginia branch office. In addition, the corporate RSO made available all license required documentation enabling a routine inspection of the license. The inspector also visited a temporary jobsite, the Loew's construction site, in Waynesboro, Virginia.

b. Observations and Findings

The licensee is a large consulting and engineering firm with 15 branch offices, 6 of which are authorized by the NRC to possess and use licensed material in portable gauge used to perform soil moisture and density measurements. The gauges are used daily, weather permitting. For the most part, the licensee assigns gauges to specific operators.

The licensee provides initial and refresher training which includes HAZMAT training every three years. A new operator is sent out with an experienced operator for on-the-job training before being allowed to operate independently. The licensee uses dosimetry provided by ICN which is exchanged monthly. Exposures were well below regulatory limits, usually less than could be measured. The licensee possesses survey meters which are calibrated annually. The RSO demonstrated that leak tests and inventories were performed every six months. An annual review of the radiation safety program was done. Postings and labels were as required where observed at the Crozet office and at the temporary job site.

c. Conclusions

No violations or concerns were identified.

II. Review of Reported Event

a. Inspection Scope

The inspector reviewed the circumstances surrounding damage to a gauge at a temporary field site.

b. Observations and Findings

On May 17, 2005, one of the licensee's gauge operators was using a Troxler Model 3411 portable gauge containing 8.4 millicuries of cesium-137, and 40 millicuries of americium-241 at a temporary job site, the GEI project site in Charlottesville, VA to

evaluate backfill in a pipe trench. After the gauge operator performed a field density measurement, he exited the trench and placed the gauge at the corner of a fence line opposite a sediment pond behind him. He then began watching mixed fill being placed and compacted in the trench. While the operator's back was to the gauge and he was standing about 20 feet away from the gauge, a sheepsfoot roller backed up onto the bank and ran over the gauge with one tire. The source rod base remained within the gauge, but was bent and the depth gauge rod was broken. The operator roped off the area and called the Crozet RSO. Another operator was sent to the site with a survey meter. Normal readings were noted with the source still in the rod in the gauge. The lock was still on the trigger, but since the depth rod was broken, the source rod could not be extracted from the upper side of the gauge. The operator wrapped the bent source rod with duct tape to prevent the rod from coming out of the gauge during transit and the gauge was taken to a storage area. On May 18, the corporate RSO from Richmond, Virginia determined that the radioactive sources were within the gauge and were not damaged, performed a leak test, packaged the gauge and returned it to the manufacturer for repairs. The licensee reported the event to the NRC Operations Center on May 27, 2005, (NMED No. 41731).

During the inspection, the gauge operator told the inspector that he was aware of the security requirements for the gauge and that he understood that he was not to leave it unattended. He stated that he knew that it was important to keep the gauge within his direct line of sight, but that he wanted to observe the backfill operations for "just a moment."

The licensee admonished the gauge operator involved in the incident and plans to focus the next monthly safety meeting on this incident. The licensee has comprehensive operating and emergency procedures in place. The procedures require gauges to be "...kept under constant surveillance or secured against loss, unauthorized use or removal"

The inspector visited a temporary jobsite at the Loew's construction site in Waynesboro, Virginia. The gauge was not in use at the time of the visit and was properly secured in the truck. The operator articulated an adequate understanding of the correct way to use and secure the gauge. He was equipped with dosimetry and operating procedures.

c. Conclusions

The licensee demonstrated adequate implementation of and adherence to its NRC license and regulatory requirements, including those requiring the securing of gauges, with the exception of this event.

10 CFR 20.1801 requires that the licensee secure from unauthorized removal or access licensed materials that are stored in controlled or unrestricted areas. 10 CFR 20.1802 requires that the licensee control and maintain constant surveillance of licensed material that is in a controlled or unrestricted area and that is not in storage. As defined in 10 CFR 20.1003, *controlled* area means an area, outside of a restricted area but inside the site boundary, access to which can be limited by the licensee for any reason: and

unrestricted area means an area, access to which is neither limited nor controlled by the licensee.

The failure to maintain control over the gauge, as demonstrated by the fact that it was damaged by construction equipment and the operator's statements concerning his location and looking in the other direction, is a violation of regulatory requirements.

Following the event the licensee took appropriate actions to recover the gauge and to ensure that staff are aware of the requirements for securing gauges.

III. Exit Meeting

An exit meeting was conducted on June 1, 2005, to discuss the preliminary findings with the licensee's staff identified at the end of this report. The inspector reviewed the event with the licensee representatives and indicated that the loss of control over licensed material was an apparent violation of regulatory requirements. The licensee representatives stated that they understood that it was a violation. They said that they were aware of the proper methods of securing licensed material and that this was an isolated incident. They advised that this would be a topic of discussion during the next safety meetings at the various places of use authorized on the license.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

William W. Briody, Vice President, Corporate RSO

Kevin O'Brian, gauge operator

John L. Pappas, P.E., Senior Geotechnical Engineer, Crozet RSO