

EXECUTIVE SUMMARY

E. L. Robinson Engineering Company
NRC Inspection Report No. 03035294/2010001

E. L. Robinson Engineering Company is authorized by License No. 47-25503-01 to use portable gauges to measure physical properties of materials. The licensee possesses four portable gauges which are stored at an authorized location in Cross Lanes, West Virginia, and they have five authorized gauge users.

During an inspection conducted from October 20 - 21, 2010, an apparent violation of 10 CFR 30.34(i), "Security requirements for portable gauges," was identified. Portable gauge licensees are required to use two independent physical controls that form tangible barriers to secure portable gauges from unauthorized removal, whenever portable gauges are not under the control and constant surveillance of the licensee. The inspection found that licensed portable gauges were stored in a locked building (one physical control), and each gauge was stored inside a locked container that was secured to the building with a locked cable (second physical control). However, the keys to the locks securing the cables, and the keys to the gauge container locks were stored in a lock box inside the building, and the key to the lock box was stored on top of the lock box. Although the key on top of the key lock box was not readily visible, and only a limited number of individuals were knowledgeable of the key storage location, the storage of the key in such close physical proximity to the key lock box degraded the effectiveness of the second physical control.

Before the end of the inspection, the key to the lock box was relocated to a new storage location in another locked building. In addition, on November 2, 2010, the licensee notified the NRC that the lockbox was re-located from the gauge storage building to another secure location.

REPORT DETAILS

I. Organization and Scope of the Program

a. Inspection Scope

Inspectors interviewed licensee staff to determine the current organization and the scope of the licensee's possession and use of licensed materials.

b. Observations and Findings

The licensee is authorized to possess and use portable gauge devices, containing radioactive sealed sources for moisture/density measurements. The licensee stores four portable gauges at a location in Cross Lanes, West Virginia, not far from their Charleston, West Virginia office. The gauges are used during roadway construction projects. Only two of the gauges have been used regularly during the past year. There are 5 persons authorized to use the portable gauges.

Since the last inspection in November 2009, the Radiation Safety Officer (RSO) changed. A new RSO was approved during the renewal of the license in January 2010. This individual is an authorized gauge user, and the Quality Assurance/Quality Control Manager for the Charleston, West Virginia office. The company has seven offices located in West Virginia and three other states. The Cross Lanes facility is the only permanent facility authorized for storage of the gauges in West Virginia.

c. Conclusions

The organization and scope of the program are as described in the license application. No violations were identified.

II. Management Oversight of the Program

a. Inspection Scope

Inspectors reviewed licensee annual program review records, and discussed oversight of the portable gauges with licensee representatives.

b. Observations and Findings

During the November 2009 inspection, the inspector identified that the licensee failed to perform the review of the radiation safety program content and implementation at least annually, as required by 10 CFR 20.1101(c). Inspectors reviewed records of program reviews that were performed since that time. These reviews were performed at approximately 6-month intervals, at the same time as the leak tests and physical inventories of the gauges were performed.

c. Conclusions

Corrective actions were implemented in response to the violation identified during the November 2009 inspection. This item is closed. No violations were identified during this inspection.

III. Facilities and Equipment

a. Inspection Scope

The inspectors observed the licensee's facilities and equipment at their authorized storage location in Cross Lanes, West Virginia.

b. Observations and Findings

Licensee facilities in Cross Lanes, West Virginia included an office building, warehouse and small, 8 feet long by 10 feet wide storage building. The office building is currently leased to tenants, the warehouse is used for equipment storage, and the storage building is used to store licensed portable gauges.

The inspectors toured the gauge storage building and observed that the inside of the building was posted as Radioactive Materials area and the posting was visible from the door when it was opened. A portable gauge Use Log was located inside the gauge storage building and documented that one of the four portable gauges was in-use at a temporary job site. The other three portable gauges were present in the storage building during the inspection. Each gauge case was chained or locked so that the gauge case could not be opened to remove the gauge, and each gauge case was fixed to the building with locked heavy duty cables to prevent the unauthorized removal of the cases.

The inspectors evaluated licensee compliance with the 10 CFR 30.34(i) requirement to have two physical controls that form tangible barriers to prevent unauthorized removal of licensed gauges. The inspectors observed that licensed portable gauges were stored in a locked building (one physical control), and each gauge was stored inside a locked container that was secured to the building with a locked cable (second physical control). However, the keys to the locks securing the cables, and the keys to the gauge container locks were stored in a lock box inside the building, and the key to the lock box was stored on top of the lock box. Although the key on top of the key lock box was not readily visible, and only a limited number of individuals were knowledgeable of the key storage location, the storage of the key in such close physical proximity to the key lock box degraded the effectiveness of the second physical control.

A licensee representative acknowledged the inspector finding and immediately took control of the key to the key lock box. She explained that in early October 2010, in an attempt to improve security, its key control procedure was changed in order to reduce the number of keys that authorized gauge users were required to carry. She stated that a key lock box was installed inside the gauge storage building and then placed the keys to the gauge containers and the cable locks inside the key lock box. She explained that they stored the key to the key lock box on top of the key lock box, because it was not

readily visible and only a limited number of individuals knew where the key was stored. However, she acknowledged that the security vulnerability created by storing the key to the key lock box on top of the lock box had not been fully considered.

After discussing this issue with the RSO, the RSO moved the storage location of the lock box key to a location in the warehouse building. The warehouse is routinely maintained locked and secured. On November 2, 2010, the RSO notified the inspector by telephone that the lock box was re-located from the gauge storage building to the warehouse.

c. Conclusions

One apparent violation of 10 CFR 30.34(i) was identified. During the period from approximately October 1 to October 20, 2010, E.L. Robinson Engineering Company failed to use a minimum of two independent physical controls that form tangible barriers to secure portable gauges from unauthorized removal, whenever the portable gauges were not under the control and constant surveillance of the licensee. Specifically, portable gauges were stored in a locked building (one physical control), and the gauges were secured inside locked containers that were secured to the inside of the building with heavy duty cable and locks (second physical control). However, the keys to the cable locks were readily accessible in that they were stored in a key lock box and the key to the key lock box was stored on top of the key lock box. The key storage method utilized by the licensee degraded the effectiveness of the second physical control employed to prevent unauthorized removal of the gauges.

IV. Material Receipt, Use, Transfer, and Control

a. Inspection Scope

The inspectors reviewed the use and control of licensed materials through interviews with licensee staff and review of records.

b. Observations and Findings

Currently, the licensee maintains an information binder for each gauge, containing the use log, most recent leak test, calibration certificate, shipping paper, operating procedures, emergency procedures, and other relevant information. Inspectors observed that the binder for each gauge was located on top of the gauge while in the storage room. For the gauge that was in use that day, the use log was in the storage building and was correctly filled out by the authorized user. The licensee representative stated that the binder with the remaining documents stayed with the gauge. Both the RSO and the staff member who was present during the inspection on October 20 were aware that one gauge was in use that day, the identity of the authorized user and the location of use.

Use logs for other gauges in storage during the inspection contained all required information and were properly filled out. Documents in the information binder appeared to contain appropriate information.

Although one portable gauge was in use during the inspection, at a location approximately 6 hours from the licensee's storage location, the inspectors were unable to reach the temporary job site prior to completion of licensed activities on either day of the inspection. Therefore, observations of control and use of the material at a temporary job site, and transportation of the material, were not included in this inspection.

The inspectors also observed that the licensee maintains a calibrated portable survey instrument for use in emergencies.

c. Conclusions

No violations were identified.

V. Training of Workers

a. Inspection Scope

The inspectors reviewed licensee records of training.

b. Observations and Findings

All persons identified as authorized users by the licensee representative present during the inspection had been trained as described in the license application. Certificates of training were maintained with licensee records. Certificates indicated that training included use of the gauges and transportation of the gauges.

c. Conclusions

No violations were identified.

VI. Radiation Protection

a. Inspection Scope

Inspectors reviewed licensee dosimetry records and discussed the results with the RSO.

b. Observations and Findings

The licensee provides film dosimeters to measure external dose to all authorized users of the gauges. Dosimeters are exchanged at quarterly intervals. The dosimetry provider is NVLAP-approved, according to dosimetry records. One authorized user had a measurable dose of 55 millirem during the second quarter of 2010. The RSO discussed this with the individual, and learned that the film dosimeter had been left on the dashboard of a vehicle during that quarter, and may have caused the unusual reported dose. Although the individual had used a portable gauge during that period, the individual was not using it differently than in other periods of time. The licensee did not request that the dosimetry provider alter the dose record.

c. Conclusions

No violations were identified.

VII. Posting and Labeling

a. Inspection Scope

Inspectors observed postings and labeling at the licensee's facilities.

b. Observations and Findings

The storage building was appropriately posted with a "Caution, Radioactive Material" sign readily visible inside the building as soon as the door was opened. Other required postings such as the Form NRC-3 were also available. Gauge containers in storage were appropriately labeled for transportation of the material.

c. Conclusions

No violations were identified.

VIII. Exit Meeting

The inspectors discussed the findings of the inspection with the RSO during a telephone call on October 21, 2010.

The inspectors informed the RSO that 10 CFR 30.34(i) requires that each portable gauge licensee shall use a minimum of two independent physical controls that form tangible barriers to secure portable gauges from unauthorized removal, whenever portable gauges are not under the control and constant surveillance of the licensee, and that contrary to this requirement, from approximately October 1-20, 2010, E.L. Robinson Company failed to use a minimum of two independent physical controls that form tangible barriers to secure portable gauges from unauthorized removal, whenever the portable gauges were not under the control and constant surveillance of the licensee. Specifically, portable gauges were stored in a locked building (one physical control), and the gauges were secured inside locked containers that were secured to the inside of the building with heavy duty cable and locks (second physical control). However, the keys to the cable locks were readily accessible in that they were stored in a key lock box and the key to the key lock box was stored on top of the key lock box. The key storage method utilized by the licensee negated the effectiveness of the second tangible barrier.

The RSO acknowledged the inspection findings and stated the following:

- 1) The degraded 10 CFR 30.34(i) security barrier resulted from an attempt to improve security by reducing the number of keys that staff members are required

to carry, and that the security vulnerability created by storing the key to the key lock box in close proximity to the key lock box was not fully considered;

- 2) This security vulnerability was not likely to be exploited because the key to the key lock box was not readily visible, and only a limited number of individuals were knowledgeable of where the key to the key lock box was stored; and
- 3) Corrective actions have been taken including designating a new storage location for the key to the lock box, and relocating the key lock box to a new location in another locked building.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

Tim Cart, engineer, authorized user
Heather Shaffer, RSO (by telephone)