

EXECUTIVE SUMMARY

Milone & MacBroom, Inc.
NRC Inspection Report No. 03038287/2010001

Milone & MacBroom, Inc. is a consulting firm located in the northeastern United States, providing civil engineering, planning, landscape architecture and land survey services. On May 4, 2010, a new license was issued authorizing Milone & MacBroom to possess and use two Seaman Nuclear Corporation Model No.C-300 portable gauges, each containing about 5.5 millicuries of radium-226 (Ra-226) for measuring the physical properties of materials. On November 19, 2010, the initial routine inspection was performed at the licensee's Cheshire, Connecticut facility, at which time, the licensee possessed one Ra-226 portable gauge. Based on the results of this inspection, five apparent violations of NRC requirements were identified.

The first apparent violation, which is being considered for escalated enforcement action, relates to the licensee's failure to use two independent physical controls that form tangible barriers to secure a portable gauge from unauthorized removal, at times when the portable gauge was not under the control and constant surveillance of the licensee, as required by 10 CFR 30.34(i). Specifically, the inspector identified that the building entrance was controlled at all times, providing one independent physical control, but the storage location or the storage box did not have a lock or a second independent physical control when the portable gauge was not controlled or under constant surveillance of the licensee. In addition, the licensee had not provided a second independent physical control when its portable gauge was used at temporary job sites.

This inspection also identified four other apparent violations that are not being considered for escalated enforcement. These apparent violations were for the failure to: (1) provide training for its hazardous material (hazmat) employees, that satisfied the requirements in 10 CFR 71.5 and 49 CFR Part 172; (2) post an NRC Form 3, as required by 10 CFR 19.11; (3) ensure that a portable gauge containing Ra-226 had a durable, clearly visible label that provided sufficient information to permit individuals handling or using the device, or working in the vicinity of the device, to take precautions to avoid or minimize exposures, as required by 10 CFR 20.1904(a); and, (4) possess and use, or, alternatively have access to and use of a radiation survey meter as required by License Condition 19 of NRC License No. 06-31408-01.

During the onsite inspection, the licensee committed to prompt corrective actions. By its letter dated January 18, 2011, the licensee provided a summary of appropriate corrective actions either taken or planned to address the NRC concerns.

REPORT DETAILS

I. Organization and Scope of the Program

a. Inspection Scope

The inspector reviewed the organization and scope of the radiation safety program.

b. Observations and Findings

Milone & MacBroom, Inc. (MMI) provides civil engineering, planning, landscape architecture and land survey services to the construction industry. Prior to receiving the NRC license, MMI implemented a radiation safety program for one portable gauge sufficient to meet Connecticut Department of Environmental Protection (DEP) registration requirements. Due to a recent change in regulatory authority brought about by the Energy Policy Act of 2005 and subsequent NRC regulations, licensing discrete sources of radium-226 (Ra-226) came under NRC's authority, and MMI's possession of its gauge required MMI to apply for an NRC License by November 30, 2008, in accordance with 10 CFR 30.3.

An NRC License, No. 06-31408-01, was issued on May 4, 2010, which authorized the use of two portable gauging devices for measuring physical properties of materials, each containing approximately 5.5 millicuries of Ra-226 in sealed form. At the time of the inspection, the licensee possessed one Seaman Nuclear Corporation Model No. C-300 portable gauge.

While under the Connecticut DEP registration, an individual who recently left the company had maintained the radiation safety program. When the new NRC license was issued, the Manager, Construction Services (MCS) for MMI was assigned as the Radiation Safety Officer (RSO). Although he had previous experience using the gauge and was a qualified authorized user and RSO, neither the MCS nor other MMI management had experience regarding implementation of the specific NRC regulatory requirements related to security and transportation of portable gauges. In follow up discussions, the inspector discussed with the RSO the need to provide for effective implementation of multiple program areas. Specific areas reviewed were program management, training, maintenance, security, emergency response, and audits.

c. Conclusions

No violations were identified with regard to organization and scope of the program.

II. Facilities, Transfer, and Control of Material

a. Inspection Scope

The inspector reviewed the licensee's facilities for storage and control of its one portable gauge. The inspector also observed the licensee's authorized user at a temporary job site, the Rentschler Field in East Hartford, Connecticut.

b. Observations and Findings

The authorized use and storage location for the MMI license is 99 Realty Drive, Cheshire, Connecticut. The license application identified that the gauge was stored in a lead-lined box in the building's mechanical room. Upon inspection of the mechanical room, it was found that the gauge storage box and the entry door to the mechanical room were unlocked. Only one physical barrier was noted, as the building entrance and exterior doors were controlled at all times. At the time of the inspection, the gauge was being used in the field. According to the RSO and from a review of utilization logs, the gauge was stored in the Connecticut office when not being used at temporary job sites. Discussion with MMI staff revealed that a second barrier was not used when the gauge was returned from the field and placed in the storage box.

The inspector identified that MMI possessed one portable gauge, but failed to maintain two independent controls to form a tangible barrier to secure its portable gauge from unauthorized removal. Specifically, the inspector identified that when the licensee's portable gauge was not under control and constant surveillance by the licensee, the licensee stored the gauge inside of an unlocked box within the building's maintenance room. This is an apparent violation of 10 CFR 30.34(i). The inspector also made observations regarding the portable gauge use at a temporary job site. Authorized users stated that during transport to and from temporary job sites, they had, at times, left the gauge unattended on the backseat of their locked vehicle without an additional security barrier.

In MMI's letter of January 18, 2011, the MCS indicated that corrective actions were taken to address MMI's failure to provide two tangible barriers for gauge storage and transport. After the inspection, the MCS stated the door to the mechanical room was kept locked at all times and access to the room restricted. The storage box was outfitted with a lock to be used while the gauge is in storage. The MCS also stated that he would control issuing keys to the lock on the storage box and that the gauge would not be used in the field until a decision was reached on options MMI was considering for transporting the gauge in vehicles.

c. Conclusions

An apparent violation was identified that is being considered for escalated enforcement action.

10 CFR 30.34(i) requires, in part, that each portable gauge licensee shall use a minimum of two independent 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.

Contrary to the above, during the period of May 4, 2010 and November 19, 2010, MMI failed to maintain two independent controls that form tangible barriers to secure their portable gauge from unauthorized removal when the gauge was not under the control and constant surveillance of the licensee. Specifically, between May 4, 2010, and November 19, 2010, Milone & MacBroom, Inc. left the gauge unattended in their office building located at 99 Realty Drive, Cheshire, Connecticut, and at times, had left an unattended gauge at temporary job sites in a locked vehicle with only one independent physical control.

III. Material Receipt and Use

a. Inspection Scope

The inspector reviewed the licensee's receipt and use of its portable gauge.

b. Observations and Findings

Prior to receiving the NRC license, MMI maintained its gauge as required by the Connecticut DEP. The gauge was calibrated and leak tested at required intervals. Authorized users received initial safety training from the manufacturer when the gauge was obtained in 1996. According to the MCS, no problems had been encountered by MMI with gauge utilization, transfer, or operation while registered with the Connecticut DEP.

Initial inspection of MMI's current program found that several areas had not been implemented to meet NRC requirements. Although no actual safety concerns were identified with regard to maintaining the program, several compliance concerns were identified by the inspector in the following areas:

1. Review of training records for authorized users found that operations and safety training had been provided by the manufacturer, but employees had not taken hazardous material training, as required by 10 CFR 71.5 and 49 CFR 172.704(c).

2. Inspection of the office area found the licensee failed to post NRC form 3, "Notice to Employees," as required by 10 CFR 19.11.
3. Upon examination at the temporary job site, the gauge operated properly but showed excessive wear on the exterior surfaces. The device was missing the label that provides source and precautionary information, as required by 10 CFR 20.1904.
4. In the license application, MMI committed to possess and use, or have access to and use, a radiation survey meter. The inspector found that MMI did not satisfy their commitment to have or gain access to a survey meter, as required by License Condition 19 to License No. 06-31408-01.

In the licensee's January 18, 2011, letter, MMI addressed several issues and provided specific corrective actions that were or would be taken on each of the above concerns. Specifically, MMI committed to review their hazmat training program requirements. NRC Form-3, "Notice to Employees" was posted for employees to review, the gauge will be shipped to the manufacturer for relabeling, and a survey meter will be obtained prior to the next time the gauge is used.

c. Conclusions

Four non-escalated apparent violations were identified:

1. License Condition 18 of NRC License No. 06-31408-01 requires the licensee to conduct licensed activities in accordance with 10 CFR 71.5 regarding transportation of licensed materials.

10 CFR 71.5(a) requires, in part, that each licensee who transports licensed material outside the site of usage, as specified in the NRC license, or where transport is on public highways, or who delivers licensed material to a carrier for transport, shall comply with the applicable requirements of the Department of Transportation (DOT) regulations in 49 CFR parts 107, 171 through 180, and 390 through 397.

49 CFR 171.8 defines a hazmat employee, in part, as a person who is employed by a hazmat employer and who in the course of such employment directly affects hazardous materials transportation safety, including individuals who load, unload, or handle hazardous materials; prepare hazardous materials for transportation; are responsible for safety of transporting hazardous materials; and operate a vehicle used to transport hazardous materials. This regulation defines a hazmat employer, in part, as a person who employs or uses at least one hazmat employee on a full-time, part time, or temporary basis; and who transports hazardous materials in commerce.

49 CFR 172.704(c) requires, in part, that a hazmat employee receive initial training within 90 days after employment or a change in job function, and recurrent training at least once every three years.

Contrary to the above, MMI did not provide training for its hazmat employees which satisfied the requirements in 49 CFR Part 172 in that, on multiple occasions in 2010, MMI employees transported licensed material from the storage location in Cheshire, Connecticut, over public roads to and from temporary jobsites, without having completed the necessary training required by 49 CFR 172.704(c). Specifically, licensee records indicate that, of the employees that had transported gauges during the time period specified above, none of the employees had received HAZMAT training since 2006, a period of more than three years.

2. 10 CFR 19.11(e)(1) requires, in part, that each licensee prominently post NRC Form 3, "Notice to Employees."

Contrary to the above, as of November 19, 2010, the licensee had not posted NRC Form 3, "Notice to Employees."

3. 10 CFR 20.1904(a) requires licensees to ensure that each container of licensed material bears a durable, clearly visible label bearing the radiation symbol and the words "CAUTION, RADIOACTIVE MATERIAL," or "DANGER, RADIOACTIVE MATERIAL." The label must also provide sufficient information (such as the radionuclide(s) present, an estimate of the quantity of radioactivity, the date for which the activity is estimated, etc.) to permit individuals handling or using the containers, or working in the vicinity of the containers, to take precautions to avoid or minimize exposures.

Contrary to the above, on November 19, 2010, a container of Ra-226 possessed by MMI did not bear a durable, clearly visible label that provided sufficient information to permit individuals handling or using the containers, or working in the vicinity of the containers, to take precautions to avoid or minimize exposures.

4. Condition 19 of NRC License No. 06-31408-01 requires, in part, that the licensee conduct its program in accordance with statements, representation, and procedures contained in the application dated April 22, 2010.

Item 10.3 of the license application dated April 22, 2010 required that the licensee will either possess and use, or have access to and use, a radiation survey meter that meets the Criteria in the section entitled "Radiation Safety Program – Instruments," in NUREG 1556, Vol. 1, Rev.1, dated November 2001.

Contrary to the above, as of November 19, 2010, the licensee had not possessed or had access to use, a radiation survey meter.

IV. Exit Meeting

The Manager, Construction Services (RSO) was contacted by telephone on December 2, 2010, and January 12, 2011, to discuss the preliminary findings of the inspection. He acknowledged the findings and apparent violations, and by letter dated January 18, 2011, confirmed MMI's commitment to take appropriate corrective actions on the apparent violations. A final exit meeting was conducted by telephone on January 20, 2011, at which time the corrective actions were further discussed regarding the five apparent violations, and the licensee committed to not use the gauge until all the specified corrective actions were completed.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

#Thomas Balskus, Manager, Construction Services and RSO
Rob Luft, authorized user

Participated in the preliminary and final exit meetings.