UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
2443 WARRENVILLE RD. SUITE 210
LISLE, IL 60532-4352

May 10, 2016

EA-16-075
EN 51782
NMED No. 160117 (Closed)

Mr. James T. Sherer, President
Patriot Engineering and Environmental, Inc.
6330 E. 75th Street, Suite 216
Indianapolis, IN 46250

SUBJECT: NRC SPECIAL INSPECTION REPORT NO. 03037878/2016001(DNMS)
AND NOTICE OF VIOLATION – PATRIOT ENGINEERING AND
ENVIORNMENTAL, INC.

Dear Mr. Sherer:

On March 24, 2016, inspectors from the U.S. Nuclear Regulatory Commission (NRC) conducted a special inspection at your facility in Indianapolis, Indiana, with continued in-office review through April 18, 2016. The purpose of the inspection was to review the circumstances surrounding the report of a damaged portable moisture/density gauge at a temporary job site in Indianapolis, Indiana, on March 8, 2016. The in-office review included a review of the licensee's written report describing the event. Mr. Geoffrey Warren and Mr. Luis Nieves of my staff presented the findings of this inspection during a final exit meeting via telephone with Mr. Bryan King on April 18, 2016. The enclosed inspection report presents the results of the inspection (Enclosure 2).

Based on the results of this inspection, one apparent violation of NRC requirements was identified and is being considered for escalated enforcement action in accordance with the NRC Enforcement Policy. The current Enforcement Policy is included on the NRC's website at http://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html. The apparent violation concerned the licensee's failure to secure or maintain constant surveillance of a portable gauge, as required by Title 10 of the *Code of Federal Regulations* (CFR) 20.1802 and10 CFR 30.34(i).

Because the NRC has not made a final determination in this matter, the NRC is not issuing a Notice of Violation for this inspection finding at this time. The circumstances surrounding this apparent violation, the significance of the issue, and the need for lasting and effective corrective action were discussed with Mr. Richard Craft, Mr. King, and other licensee personnel at the inspection exit meeting on March 24, 2016.

Before the NRC makes its enforcement decision, we are providing you an opportunity to either: (1) respond in writing to the apparent violation addressed in this inspection report within 30 days

of the date of this letter; (2) request a Predecisional Enforcement Conference (PEC); or (3) request Alternative Dispute Resolution (ADR). **Please contact Mr. Aaron T. McCraw at 630-829-9650 within 10 days of the date of this letter to notify the NRC of your intended response.** If you choose to provide a written response, it should be clearly marked as "Response to the Apparent Violation in Inspection Report No. 03037878/2016001(DNMS); EA-16-075," and should include, for the apparent violation: (1) the reason for the apparent violation, or, if contested, the basis for disputing the apparent violation; (2) the corrective steps that have been taken and the results achieved; (3) the corrective steps that will be taken to avoid further violations; and (4) the date when full compliance was or will be achieved. In presenting your corrective actions, you should be aware that the promptness and comprehensiveness of your actions will be considered in assessing any civil penalty for the apparent violation. The guidance in NRC Information Notice 96-28, "Suggested Guidance Relating to Development and Implementation of Corrective Action," may be useful in preparing your response. You can find the information notice on the NRC's website at: http://www.nrc.gov/reading-rm/doc-collections/gen-comm/info-notices/1996/in96028.html. Your response may reference or include previously docketed correspondence, if the correspondence adequately addresses the required response. If an adequate response is not received within the time specified or an extension of time has not been granted by the NRC, the NRC will proceed with its enforcement decision or schedule a PEC.

If you choose to request a PEC, the conference will afford you the opportunity to provide your perspective on the apparent violation and any other information that you believe the NRC should take into consideration before making an enforcement decision. The topics discussed during the conference may include the following: information to determine whether a violation occurred, information to determine the significance of a violation, information related to the identification of a violation, and information related to any corrective actions taken or planned to be taken. If a PEC is held, it will be open for public observation, and the NRC will issue a press release to announce the time and date of the conference.

You may also request ADR with the NRC in an attempt to resolve this issue. ADR is a general term encompassing various techniques for resolving conflicts using a third party neutral. The technique that the NRC has decided to employ is mediation. Mediation is a voluntary, informal process in which a trained neutral (the "mediator") works with parties to help them reach resolution. If the parties agree to use ADR, they select a mutually agreeable neutral mediator who has no stake in the outcome and no power to make decisions. Mediation gives parties an opportunity to discuss issues, clear up misunderstandings, be creative, find areas of agreement, and reach a final resolution of the issues. Additional information concerning the NRC's program can be obtained at http://www.nrc.gov/about-nrc/regulatory/enforcement/adr.html. The Institute on Conflict Resolution (ICR) at Cornell University has agreed to facilitate the NRC's program as a neutral third party. Please contact ICR at 877-733-9415 within 10 days of the date of this letter if you are interested in pursuing resolution of this issue through ADR.

Please be advised that the number and characterization of apparent violations described in the enclosed inspection report may change as a result of further NRC review. You will be advised by separate correspondence of the results of our deliberations on this matter.

In addition, based on the results of this inspection, the NRC has also determined that one Severity Level IV violation of NRC requirements occurred. The violation was evaluated in accordance with the NRC Enforcement Policy. The violation concerned the failure to follow

emergency procedures, as required by Item 10 of License Condition 21(A) of your NRC License No. 13-32725-01. This violation is cited in the enclosed Notice of Violation (Notice) (Enclosure 1). The NRC is citing this violation in the Notice because the violation was identified by the inspector.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and your response, will be made available electronically for public inspection in the NRC's Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC's website at http://www.nrc.gov/reading-rm/adams.html. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made publicly available without redaction.

Please feel free to contact Luis Nieves of my staff if you have any questions regarding this inspection. Mr. Nieves can be reached at 630-829-9571.

Sincerely,

/RA/

John B. Giessner, Director
Division of Nuclear Materials Safety

Docket No. 030-37878
License No. 13-32725-01

Enclosures:
1. Notice of Violation
2. IR 03037878/2016001(DNMS)

cc w/encls: Mr. Bryan King, Corporate
Safety Manager
State of Indiana

emergency procedures, as required by Item 10 of License Condition 21(A) of your NRC License No. 13-32725-01. This violation is cited in the enclosed Notice of Violation (Notice) (Enclosure 1). The NRC is citing this violation in the Notice because the violation was identified by the inspector.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and your response, will be made available electronically for public inspection in the NRC's Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC's website at http://www.nrc.gov/reading-rm/adams.html. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made publicly available without redaction.

Please feel free to contact Luis Nieves of my staff if you have any questions regarding this inspection. Mr. Nieves can be reached at 630-829-9571.

Sincerely,

/RA/

John B. Giessner, Director
Division of Nuclear Materials Safety

Docket No. 030-37878
License No. 13-32725-01

Enclosures:
1. Notice of Violation
2. IR 03037878/2016001(DNMS)

cc w/encls: Mr. Bryan King, Corporate
Safety Manager
State of Indiana

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See next page

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Letter to James Sherer from John Giessner, dated May 10, 2016.

SUBJECT: NRC SPECIAL INSPECTION REPORT NO. 03037878/2016001(DNMS) AND NOTICE OF VIOLATION – PATRIOT ENGINEERING AND ENVIORNMENTAL, INC.

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NOTICE OF VIOLATION

Patriot Engineering and Environmental, Inc.
Indianapolis, Indiana
EA-16-075

License No. 13-32725-01
Docket No. 030-37878

During a U.S. Nuclear Regulatory Commission (NRC) inspection conducted on March 24, 2016, with continued in-office review through April 18, 2016, one violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

> License Condition No. 21, of NRC License No. 13-32725-01 requires, in part, that except as specifically provided otherwise in the license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the Application dated November 24, 2008.
>
> Item 10, page 3 of the Application dated November 24, 2008, requires, in part, that the licensee will implement and maintain the operating and emergency procedures in Appendix H of NUREG- 1556, Vol. 1, Rev. 1, "Consolidated Guidance about Material Licenses: Program-Specific Guidance about Portable Gauge Licenses."
>
> Appendix H of NUREG- 1556, Vol. 1, Rev. 1, page H-2, Emergency Procedures requires, in part, that if the source fails to return to the shielded position, or if any other emergency or unusual situation arises, to immediately secure the area and keep people at least 15 feet away from the gauge until the situation is assessed and radiation levels are known.
>
> Appendix H of NUREG- 1556, Vol. 1, Rev. 1, page H-3, Radiation Safety Officer (RSO) and Licensee Management, requires, in part, to arrange for a radiation survey to be conducted as soon as possible by a knowledgeable person using appropriate radiation detection instrumentation.
>
> Contrary to the above, on March 8, 2016, the licensee failed to immediately secure the area, conduct a radiation survey, and determine the radiation levels following an unusual situation involving a portable moisture/density gauge. Specifically, the licensee discovered that one of their portable moisture/density gauges had been damaged when it was run over by the licensee gauge user, and the licensee did not immediately secure the area and did not determine the radiation levels prior to removing the damaged gauge from the scene of the accident.

This is a Severity Level IV violation (Section 6.3).

Pursuant to the provisions of Title 10 the *Code of Federal Regulations* (CFR) 2.201, Patriot Engineering and Environmental, Inc. is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, Region III, within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply

should be clearly marked as a "Reply to a Notice of Violation" and should include: (1) the reason for the violation, or, if contested, the basis for disputing the violation or its severity level, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken, and (4) the date when full compliance was or will be achieved. Your response may reference or include previously docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an order or a Demand for Information may be issued as to why the license should not be modified, suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time.

Your response will be made available electronically for public inspection in the NRC's Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC's website at http://www.nrc.gov/reading-rm/adams.html. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made publicly available without redaction.

If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days of receipt.

Dated this 10th day of May 2016.

U.S. Nuclear Regulatory Commission
Region III

Docket No.	030-37878
License No.	13-32725-01
Report No.	03037878/2016001(DNMS)
EA No.	EA-16-075
EN No.	51782
Licensee:	Patriot Engineering and Environmental, Inc.
Facility:	6330 East 75th Street, Suite 216 Indianapolis, Indiana
Inspection Dates:	March 24, 2016, with continued in-office review through April 18, 2016
Exit Meeting Date:	April 18, 2016
Inspectors:	Luis Nieves, Health Physicist Geoffrey M. Warren, Senior Health Physicist
Approved By:	Aaron T. McCraw, Chief Materials Inspection Branch Division of Nuclear Materials Safety

EXECUTIVE SUMMARY

Patriot Engineering and Environmental, Inc.
NRC Inspection Report 03037878/2016001(DNMS)

On March 24, 2016, two inspectors from the U.S. Nuclear Regulatory Commission conducted a special inspection of Patriot Engineering and Environmental, Inc. (licensee), with continued in-office review through April 18, 2016, to review the circumstances surrounding a reportable event in which a portable moisture/density gauge was damaged on March 8, 2016. The event occurred when an authorized gauge user who was using the gauge at a temporary job site in Indianapolis, Indiana, forgot to secure the gauge and left it next to the front right tire of his truck. When he proceeded to leave the site, he ran over the gauge, causing slight damage to the gauge casing. The radioactive source (nominally 4.5 millicuries (mCi) of radium-226 (Ra-226)) remained intact and in the shielded position. On March 9, 2016, the licensee's Corporate Safety Manager reported the event to the NRC Headquarters Operations Center.

As a result of the inspection, the inspectors identified an apparent violation of Title 10 of the *Code of Federal Regulations* (CFR) 20.1802, which 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, and 10 CFR 30.34(i), which requires that each portable gauge licensee 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. The root cause of the apparent violation was individual error by the authorized gauge user. As corrective action to prevent recurrence of a similar event and to address the apparent violation, the licensee's Corporate Radiation Safety Officer (RSO) retrained the authorized gauge users at each branch office on the importance of security and handling of the gauges. The licensee has appointed a site RSO to its Indianapolis field office to conduct weekly site visits to gauge users and focus on proper use, transport, and security of portable gauges. The licensee restricted the authorized gauge user involved in the event from access to and use of the licensee's portable moisture/density gauges for 90 days.

The inspectors also identified a Severity Level IV violation for the failure to follow emergency procedures, as required by Item 10 of License Condition (LC) 21 of NRC License No. 13-32725-01. The licensee's emergency procedures require them to immediately secure the area and conduct a survey to determine the radiation level if an unusual situation arises. The event occurred and was evident as of March 8, 2016; however, the licensee did not immediately secure the area or conduct a survey to determine the radiation level. The cause of this violation was that licensee employees were not familiar with the licensee's emergency procedure, and when they could not reach the Corporate RSO for guidance, they did not secure the area of the incident or determine the radiation level prior to removing the gauge from the scene of the accident. As corrective action to prevent recurrence of similar event, the Corporate RSO retrained all employees in all the branches on the appropriate response to an emergency or unusual situation. The licensee intended to acquire more survey meters to have them accessible to the employees at all the branches, and in case they cannot readily get a survey meter, instructed them to call 911 and ask for their assistance in getting a survey meter to the scene.

REPORT DETAILS

1 Program Overview and Inspection History

The licensee is authorized under NRC Materials License No. 13-32725-01 to use licensed material for measuring physical properties of materials with nuclear gauging devices. Licensed material is authorized to be used anywhere in the United States in areas of NRC jurisdiction. The licensee uses the gauges on a daily basis for construction engineering projects throughout Indiana. The licensee uses a variety of portable density gauges including the following: InstroTek Model 3500; Humboldt Scientific Model 5001; Seaman Model C-75; and Troxler Model 3430 portable gauges, containing sources of cesium-137 (Cs-137) and americium-241/beryllium (Am-241/Be); and Seaman Models C-200 and C-300, containing Ra-226, for measuring physical properties of construction materials.

On August 24, 2015, the NRC conducted an escalated enforcement follow-up inspection. The inspector for that inspection did not identify any violations and closed the violations from the previous inspection. The previous inspection was a reactive inspection conducted on September 4, 2014, with continued in-office review through November 3, 2014, in response to a reportable event in which a portable gauge was run over by construction equipment at a temporary jobsite. That inspection resulted in the NRC issuing a Notice of Violation for a Severity Level III violation for the licensee's failure to secure or maintain constant surveillance of a portable gauge. The NRC issued a Civil Penalty because the licensee had other recent escalated enforcement action for failure to use a minimum of two, independent physical controls that that formed tangible barriers to secure portable gauges from unauthorized removal whenever the portable gauges were not under the control and constant surveillance of the licensee.

2 Sequence of Events

2.1 Inspection Scope

On March 24, 2016 with continued in-office review through April 18, 2016, the inspectors conducted a special inspection to review the facts and circumstances surrounding the license's report of a portable gauge that was run over on March 8, 2016. The special inspection consisted of interviews of licensee staff, a review of the sequence of events, and a review of the actions taken to investigate the incident that involved the licensee running over a portable moisture/density gauge.

2.2 Observations and Findings

On March 8, 2016, the licensee was performing soils testing using a portable moisture/density gauge at a temporary jobsite in Indianapolis, Indiana. The portable gauge involved was a Seaman Model C-200 portable moisture/density gauge containing a nominal 4.5-mCi Ra-226 sealed source. After finishing a test, the authorized gauge user left the gauge unattended next to the front tire on the driver side of his pickup truck to attend to his cell phone. The authorized gauge user forgot that the gauge was still next to the truck and proceeded to leave the job site, running over the gauge in the process.

The authorized gauge user's leaving the gauge unattended is an apparent violation of 10 CFR 20.1802, which 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, and 10 CFR 30.34(i), which requires that each portable gauge licensee 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. The root cause of the event and associated apparent violation was individual error by the authorized gauge user, who left the gauge unattended while attending to his cellphone.

As corrective action to prevent recurrence of a similar event and to address the apparent violation of 10 CFR 20.1802 and 10 CFR 30.34(i), the licensee: (1) had the Corporate RSO retrain all authorized gauge users at each branch office on the importance of security and handling of the gauges; (2) appointed a site RSO to its Indianapolis field office to conduct weekly site visits that will serve as a field audit of the gauge users and focus on proper use, transport, and security of portable gauges; and (3) restricted the authorized gauge user involved in the event from access to and use of the licensee's portable moisture/density gauges for 90 days.

Immediately after recognizing that he had run over the gauge, the authorized gauge user called the licensee's office for guidance on responding to the unusual situation. The Corporate RSO could not be reached, and in his absence, the Lab Manager instructed the gauge user to remove the gauge from underneath the vehicle and take pictures of the gauge to assess its condition. After the Lab Manager received the picture and assessed the situation, he instructed the gauge user to secure the gauge in the truck and bring it to the office. Prior to removing the damaged gauge from the job site, the licensee did not assess the situation by determining the radiation levels using a calibrated radiation detection instrument. The licensee surveyed the damaged gauge using a radiation detection instrument to determine the location and integrity of the Ra-226 source after returning the gauge to the office. The licensee also performed a leak test after returning the gauge to the office to ensure that the Ra-226 source was not damaged during the incident. The leak test results were negative, indicating that the source was still intact.

The licensee's failure to immediately secure the area and conduct a survey to determine the radiation levels as soon as possible after the incident on March 8, 2016, is a violation of LC 21. The licensee's application dated November 24, 2008, Item 10, requires the licensee to have an emergency procedure in accordance with Appendix H of NUREG-1556, Vol.1, Rev. 1, "Consolidated Guidance about material Licenses: Program-Specific guidance about Portable Gauge Licenses". This document states that, in the event of an emergency or an unusual situation, the licensee will immediately secure the area and determine the radiation levels. The cause of this violation was that licensee employees were not familiar with the licensee's emergency procedure, and when they could not reach the RSO for guidance, they did not secure the area of the incident or conduct a survey to determine the radiation level prior to removing the gauge from the scene of the accident.

As corrective action to prevent recurrence of a similar violation, the licensee: (1) had the Corporate RSO retrain all employees in all the licensee's branch offices to know how to respond to an emergency or unusual situation; (2) intended to acquire additional survey

meters to have them accessible to the employees at all the branches; and (3) instructed all employees that in case they cannot get a licensee survey meter to call 911 and ask for their assistance in getting a survey meter to determine the radiation levels and appropriately secure the area.

2.3 Conclusions

The inspectors identified an apparent violation of 10 CFR 20.1802, which 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, and 10 CFR 30.34(i), which requires that each portable gauge licensee 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. The inspectors also identified a violation of LC 21 for the failure to immediately secure the area and conduct a survey to determine the radiation levels following an unusual event.

3 Reporting the Event

3.1 Inspection Scope

The inspector reviewed the reporting of the event for the damaged gauge by interviewing the licensee's staff and evaluating the required 30-day written report documenting the incident.

3.2 Observations and Findings

The incident occurred at approximately 5:00 p.m. on Tuesday, March 8, 2016. The Corporate RSO reported the event to the NRC Headquarters Operations Center on Wednesday, March 9, 2016, at 3:10 p.m., after he returned to the office and was able to collect all of the required information to make the initial notification. The licensee provided the required 30-day report dated April 8, 2016. A copy of the licensee's initial written report can be found in the NRC's Agency wide Documents Access and Management System (ADAMS) under Accession Number ML16109A352.

3.3 Conclusions

The inspectors determined that the licensee made all of the notifications and reports within the required timeframes. The inspectors determined that the licensee's telephone and written reports included all of the required information.

4 Exit Meeting Summary

The NRC inspectors presented the preliminary inspection findings following the onsite portion of the inspection on March 24, 2016, and the final inspection findings via telephone on April 18, 2016. The licensee did not identify any documents or processes reviewed by the inspectors as proprietary. The licensee acknowledged the findings presented.

LIST OF PERSONNEL CONTACTED

Richard Craft, Principal Engineer
#^ Bryan L. King, Corporate Safety Manager
Charlie Scheuermann, Branch Manager

Attended onsite exit meeting on March 24, 2016
^ Participated in telephonic exit on April 18, 2016

INSPECTION PROCEDURES (IP) USED

IP 87103: Materials Licensees Involved in an Incident or Bankruptcy Filing
IP 87124: Fixed and Portable Gauge Programs