UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
2443 WARRENVILLE RD. SUITE 210
LISLE, IL 60532-4352
November 4, 2014

EA-14-162
EN 50377
NMED No. 140452 (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. 03037878/2014004(DNMS) AND NOTICE OF VIOLATION – PATRIOT ENGINEERING AND ENVIRONMENTAL, INC.

Dear Mr. Sherer:

On September 4, 2014, an inspector from the U.S. Nuclear Regulatory Commission (NRC) conducted a special inspection at your facility located in Indianapolis, Indiana, with continued in-office review through November 3, 2014. 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 August 15, 2014. The in-office review included an interview with the authorized gauge user who was not available during the onsite inspection and a review of the licensee's written report describing the event. 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. Bryan King of your staff at the inspection exit meetings on October 17, 2014, and November 3, 2014.

Before the NRC makes its enforcement decision, we are providing you an opportunity to: (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. 03037878/2014004(DNMS); EA-14-162," 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 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. The NRC will issue a press release to announce the time and date of the conference. The NRC normally tries to schedule a PEC within 30 days of the date of this letter.

In lieu of a PEC, 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 the apparent violation 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 licensee's failure to

notify the NRC within 24 hours after the discovery of the damaged gauge, as required by 10 CFR 30.50(b)(2). This violation is cited in the enclosed Notice of Violation (Notice) (Enclosure 1). The NRC is citing the violation in the Notice because the violation was identified by the inspector.

You are required to provide a written response to this violation and should follow the instructions specified in the enclosed Notice when preparing your response. 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 website at: http://www.nrc.gov/reading-rm/doc-collections/gen-comm/info-notices/1996/in96028.html. The NRC will use your response, in part, to determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, 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 Mr. Edward Kulzer of my staff if you have any questions regarding this inspection. Mr. Kulzer can be reached at 630-829-9875.

Sincerely,

/RA/

Patrick L. Louden, Director
Division of Nuclear Materials Safety

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

Enclosures:
1. Notice of Violation
2. Inspection Report No. 03037878/2014004(DNMS)

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

notify the NRC within 24 hours after the discovery of the damaged gauge, as required by 10 CFR 30.50(b)(2). This violation is cited in the enclosed Notice of Violation (Notice) (Enclosure 1). The NRC is citing the violation in the Notice because the violation was identified by the inspector.

You are required to provide a written response to this violation and should follow the instructions specified in the enclosed Notice when preparing your response. 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 website at: http://www.nrc.gov/reading-rm/doc-collections/gen-comm/info-notices/1996/in96028.html. The NRC will use your response, in part, to determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

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Please feel free to contact Mr. Edward Kulzer of my staff if you have any questions regarding this inspection. Mr. Kulzer can be reached at 630-829-9875.

Sincerely,

/RA/

Patrick L. Louden, Director
Division of Nuclear Materials Safety

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

Enclosures:
1. Notice of Violation
2. Inspection Report No. 03037878/2014004(DNMS)

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

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OFFICIAL RECORD COPY

Letter to James T. Sherer, from Patrick L. Louden dated November 4, 2014

SUBJECT: NRC SPECIAL INSPECTION REPORT NO. 03037878/2014004(DNMS) AND NOTICE OF VIOLATION – PATRIOT ENGINEERING AND ENVIRONMENTAL, INC.

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NOTICE OF VIOLATION

Patriot Engineering and Environmental, Inc.
Indianapolis, Indiana

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

During a U.S. Nuclear Regulatory Commission (NRC) inspection conducted on September 4, 2014, with continued in-office review through November 3, 2014, one violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

> Title 10 of the *Code of Federal Regulations* (CFR) 30.50(b)(2) requires, in part, that each licensee notify the NRC within 24 hours after the discovery of an event involving licensed material in which equipment is disabled or fails to function as designed.
>
> Contrary to the above, as of August 16, 2014, the licensee failed to notify the NRC within 24 hours after the discovery of an event involving licensed material in which equipment was disabled or failed to function as designed. Specifically, the licensee discovered that one of their portable moisture/density gauges had been damaged when it was run over by construction equipment and became disabled on August 15, 2014; however, the licensee did not notify the NRC of the event until August 18, 2014 – a period greater than 24 hours.

This is a Severity Level IV violation (Section 6.12).

Pursuant to the provisions of 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 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 Public Document Room or from the NRC Agencywide Documents Access and Management System (ADAMS), accessible from the NRC's website at http://www.nrc.gov/reading-rm/adams.html. Therefore, to the extent possible, the response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction.

Enclosure

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 4th day of November 2014.

U.S. Nuclear Regulatory Commission
Region III

Docket No.	030-37878
License No.	13-32725-01
Report No.	03037878/2014004(DNMS)
EA No.	EA-14-162
Licensee:	Patriot Engineering and Environmental, Inc.
Facility:	6330 East 75th Street, Suite 216 Indianapolis, Indiana 46250
Inspection Dates:	September 4, 2014, with continued in-office review through November 3, 2014
Exit Meeting Dates:	October 17, 2014 November 3, 2014
Inspector:	Edward Kulzer, Health Physicist Materials Inspection Branch
Approved By:	Aaron T. McCraw, Chief Materials Inspection Branch Division of Nuclear Materials Safety

EXECUTIVE SUMMARY

Patriot Engineering and Environmental, Inc.
NRC Inspection Report 03037878/2014004(DNMS)

This special inspection of Patriot Engineering and Environmental, Inc. (the Licensee) was performed on September 4, 2014, with continued in-office review through November 3, 2014, to review the circumstances surrounding an incident in which a portable moisture/density gauge was driven over on August 15, 2014. The field technician who was using the gauge at a temporary job site in Indianapolis, Indiana, had walked away from the gauge, and it was driven over by a bulldozer. The radioactive sources (nominally 8 millicuries (mCi) of cesium-137 (Cs-137) and 40 mCi of americium-241/beryllium (Am-241/Be)) remained intact and in their shielded positions. On August 18, 2014, the licensee's Corporate Safety Manager contacted the U.S. Nuclear Regulatory Commission's (NRC) Headquarters Operations Center to report the incident.

The inspector identified an apparent violation of Title 10 of the *Code of Federal Regulations* (CFR) 20.1802 and 10 CFR 30.34(i) concerning the technician's failure to either secure or maintain constant surveillance of the gauge in order to prevent unauthorized access or removal of licensed material. The root cause of the violation was individual error by the technician, who walked away from the gauge to record the measurements taken.

As corrective action to prevent recurrence of a similar event and to address the apparent violation, the licensee's Corporate Safety Manager retrained the authorized gauge users at each branch office on the importance of security and handling of the gauges. The licensee updated its Radiation Safety Program with a more stringent policy and responsibilities regarding these gauges. The licensee removed access to the licensee's portable moisture/density gauges from the employee involved in this incident.

The inspector also identified a Severity Level IV violation for the licensee's failure to report the damaged gauge to the damaged gauge to the NRC within 24 hours after discovery, as required by 10 CFR 30.50(b)(2). The event occurred and was evident as of August 15, 2014; however, the licensee did not notify the NRC of the event until August 18, 2014 – a period greater than 24 hours.

The licensee restored compliance when it notified the NRC of the event on August 18, 2014. The cause of the reporting violation was that the Corporate Safety Manager was not fully aware of all of the applicable regulatory reporting requirements, as this was his first event of such nature, and was following the instruction and guidance provided by the manufacturer. As a long-term corrective action, the Corporate Safety Manager committed to familiarizing himself with all of the applicable regulatory reporting requirements for portable moisture/density gauges.

REPORT DETAILS

1 Program Overview and Recent 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 the Indiana area. 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 Cs-137 and Am-241/Be; and Seaman Models C-200 and C-300, containing radium-226 (Ra-226), for measuring physical properties of construction materials.

The NRC conducted routine inspections at the licensee's facilities in Indianapolis, Indiana; Fort Wayne, Indiana; Lafayette, Indiana; Evansville, Indiana; and at a temporary jobsite in southern Indiana on March 27, 2014; March 28, 2014; March 28, 2014; June 12, 2014; and June 13, 2014, respectively. During the inspections of the Indianapolis and Fort Wayne locations, the NRC identified and cited a Severity Level III violation for the licensee's failure to use a minimum of two independent physical controls 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. Specifically, the licensee stored seven portable gauges containing Ra-226 and two portable gauges each containing Cs-137 and Am-241/Be in the warehouse section of its Fort Wayne location, and the gauges were only secured from unauthorized removal by one physical control: the locked building exterior door. Additionally, individuals at the licensee's Fort Wayne and Indianapolis locations stated that on multiple occasions since 2009 they had left portable gauges containing Ra-226 on open, flat-bed pickup trucks that were not under their control or constant surveillance, and had only secured the gauges from unauthorized removal by one physical control: a chain securing the gauge transportation case to the vehicle. This violation was closed during an escalated enforcement followup inspection on September 3, 2014, at the Fort Wayne and Indianapolis locations. No violations were identified at the other locations inspected.

On April 2, 2014, the NRC conducted a special inspection in response to the report of the theft of a portable moisture/density gauge that occurred on April 1, 2014, in Indianapolis. The NRC determined that the gauge was appropriately secured when it was stolen, and as a result, the NRC did not identify any violations during this inspection.

2 Events Surrounding the Damaged Portable Gauge

2.1 Inspection Scope

On September 4, 2014 with continued in-office review through November 3, 2014, the inspector conducted a special inspection which included a review of events surrounding the license's report of the incident that occurred on August 15, 2014, interviews of licensee staff, and a review of the actions taken to investigate the incident that involved a bulldozer running over a portable moisture/density gauge.

2.2 Observations and Findings

On August 15, 2014, the licensee was performing soils testing using a portable moisture/density gauge at a temporary jobsite in Indianapolis, Indiana. After finishing a test, the authorized gauge user walked away from the gauge and returned to his vehicle approximately 10 feet away to record the measurements taken. The authorized gauge user left the gauge unattended with the sources in their shielded positions. During the time while the authorized gauge user was away from the gauge, a bulldozer drove over the gauge.

Immediately after the incident, the authorized gauge user secured access around the area and notified his field supervisor to report the situation. The portable gauge involved was a Seaman Model C-75 portable moisture/density gauge containing nominal 8-mCi Cs-137 and 40-mCi Am-241/Be sealed sources. The field supervisor contacted the gauge manufacturer, Seaman Nuclear Corporation. Under the manufacturer's direction, the area was assessed and surveyed using a calibrated radiation detection instrument. The gauge itself was also surveyed using the same instrument to determine the location and integrity of the Cs-137 source. After consultation with the gauge manufacturer, licensee determined that the Cs-137 source was in the shielded position with the shielding mechanism intact and met the requirements for shipping. The Am-241/Be source is contained in a central part of the gauge and was not suspected to have sustained any damage. The damaged gauge was packaged per the manufacturer's instructions and returned to the licensee's facility where the licensee performed a leak test on both of the sources. The leak test samples were sent overnight to an authorized leak test service company, who notified the licensee that the sealed sources were not leaking.

The technician's leaving the gauge unattended is 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 event and associated apparent violation was individual error by the technician, who left the gauge unattended while recording the measurements taken.

As corrective action to prevent recurrence of a similar event and to address the apparent violation, the licensee's Corporate Safety Manager retrained the authorized gauge users at each branch office on the importance of security and handling of the gauges. The licensee updated its Radiation Safety Program with a more stringent policy and responsibilities regarding these gauges. The licensee removed access to the licensee's portable moisture/density gauges from the employee involved in this incident.

2.3 Conclusions

The inspector identified an apparent violation of 10 CFR 20.1802 and 10 CFR 30.34(i) concerning the failure to either secure or maintain constant surveillance of the gauge in order to prevent unauthorized access or removal of licensed material.

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 4:30 p.m. on Friday, August 15, 2014. The Corporate Safety Manager was notified but was not in the immediate area. The Corporate Safety Manager reported the event to the NRC Headquarters Operations Center on the following Monday (August 18, 2014) after he returned to the office and was able to collect all of the required information to make a thorough initial notification.

Title 10 CFR 30.50(b)(2) requires, in part, that each licensee notify the NRC within 24 hours after the discovery of an event involving licensed material in which equipment is disabled or fails to function as designed. The licensee's notification to the NRC Headquarters Operations Center on August 18, 2014, was more than 24 hours after the discovery of the event, which occurred on August 15, 2014. This constitutes a violation of 10 CFR 30.50(b)(2).

The licensee restored compliance when it notified the NRC of the event on August 18, 2014. The cause of the reporting violation was that the Corporate Safety Manager was not fully aware of all of the applicable regulatory reporting requirements, as this was his first event of such nature, and was following the instruction and guidance provided by the manufacturer. As a long-term corrective action, the Corporate Safety Manager committed to familiarizing himself with all of the applicable regulatory reporting requirements for portable moisture/density gauges.

The licensee provided the required 30-day report dated August 28, 2014. A copy of the licensee's initial written report can be found in the NRC's Agencywide Documents Access and Management System (ADAMS) under Accession Number ML14269A088.

3.3 Conclusions

The inspector identified a Severity Level IV violation of 10 CFR 30.50(b)(2) for the licensee's failure to make a timely notification to the NRC of a damaged gauge.

4 Exit Meeting Summary

The inspector presented the inspection findings via telephone on October 17, 2014, and November 3, 2014. The licensee did not identify any documents or processes reviewed by the inspector as proprietary. The licensee acknowledged the findings presented.

LIST OF PERSONNEL CONTACTED

Bryan L. King, Corporate Safety Manager

Participated in the telephonic exit meetings on October 17, 2014, and November 3, 2014.

INSPECTION PROCEDURES USED

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