

ENCLOSURE 6 - INSPECTION RECORD

Region: III

Inspection Report No. 2019001

License No. 13-32725-01

Docket No. 030-37878

Licensee: Patriot Engineering and Environmental, Inc.
6150 E. 75th St.
Indianapolis, IN 46250

Locations Inspected:

6150 E. 75th St., Indianapolis, IN 46250
3900 Industrial Blvd, Suite 1, Bloomington, IN 47403

Licensee Contact: Kevin Matthews, Corporate RSO

Telephone No. 317-558-5032

Program Code: 03121

Priority: 5

Type of Inspection: ☐ Initial ☒ Routine ☐ Announced
 ☐ Special ☒ Unannounced

Last Inspection Date: Mar 27 & 28, 2014 **Date of This Inspection:** April 30 &
May 1, 2019 with continued in-office review through May 17, 2019

Next Inspection Date: April 30, 2024 ☒ Normal ☐ Reduced

Summary of Findings and Actions:

- ☐ No violations cited, clear U.S. Nuclear Regulatory Commission (NRC) Form 591 or regional letter issued
- ☐ Non-cited violations (NCVs)
- ☐ Violation(s), Form 591 issued
- ☒ Violation(s), regional letter issued
- ☐ Follow-up on previous violations

Inspector: Zahid Sulaiman, Health Physicist

/RA/

Signature

Date 06/07/2019

Approved: Aaron T. McCraw, Chief, MIB

/RA/

Signature

Date 06/07/2019

PART I – LICENSE, INSPECTION, INCIDENT/EVENT AND ENFORCEMENT HISTORY

1. AMENDMENTS AND PROGRAM CHANGES SINCE LAST INSPECTION:

AMENDMENT #	DATE	SUBJECT
2	2/17/2015	New RSO and released of two facilities
3	3/31/2015	Released of a facility, changed corporate mailing address, added a new location
4	6/9/2015	Added a new location
5	5/5/2016	Released of a facility and added two new locations
6	12/4/2018	New RSO

2. INSPECTION AND ENFORCEMENT HISTORY:

IR #	DATE	TYPE	FINDINGS
2014001	3/27-3/28, 2014	Routine	SL III (10 CFR 30.34(i) & LC 17) and 5 SL IV (10 CFR 30.34(c), LC 15, LC 13.A, 10 CFR 20.1101(c), and 10 CFR 71.5(a))
2014002	4/2/2014	Reactive Inspection	Clear - Stolen Gauge
2014003	6/12-6/13, 2014	Routine, Field Office	Clear
2014003	9/3/2014	Enf. Follow-up	Clear
2014004	9/4/2014	Special Inspection	SL IV (10 CFR 30.50(b)(2))
2014004	9/4/2014	Special Inspection EA-14-162	SL III w/cp of \$3,500 (10 CFR 20.1802 & 30.34(i))
2015001	8/24/2015	Enf. Follow-up	Clear
2016001	3/24/2016	Special Inspection	SL III w/cp of \$3,500 (10 CFR 20.1802 & 30.34(i)) And SL IV (LC 21)
2016002	8/24/2016	Enf. Follow-up	Clear

3. INCIDENT/EVENT HISTORY:

No open items or events since the last routine inspection.

PART II – INSPECTION DOCUMENTATION

1. ORGANIZATION AND SCOPE OF PROGRAM:

Patriot engineering and environmental, Inc. is an engineering firm authorized to use sealed sources of radioactive material to measure the physical properties of engineering materials at various facilities in Indiana. The licensee had 6 field offices, including the main office in Indianapolis, Indiana where the portable gauges are used or stored. The licensee possesses several Troxler model 3400 series, Humboldt Scientific Model 5001, InstroTek Model 3500, and Seaman Model 75 portable gauges. The radiation safety program was managed by the corporate RSO. The licensee designated site RSOs to manage the day-to-day operations at the respective filed locations.

2. SCOPE OF INSPECTION:

Inspection Procedure(s) Used: 87124

Focus Areas Evaluated: All

The inspector toured the Indianapolis and Bloomington, Indiana facilities. The inspector observed the security of the licensed materials. The portable gauges were adequately secured with two independent physical barriers while in storage at the licensee's facility or during transportation. At the time of this inspection, the gauges were not in use. The inspector interviewed the licensee's staff to discuss the use, maintenance, and oversight of licensed material, and found that the staff was knowledgeable of radiation protection principles and licensee procedures. The inspector reviewed a selection of records, including documentation of inventories, leak tests, utilization log, training records, and program audits.

3. INDEPENDENT AND CONFIRMATORY MEASUREMENTS:

Using a Ludlum Model 2402 GM survey meter calibrated on April 24, 2018 and a ThermoFisher RadEyeG energy-compensated GM detector calibrated on July 30, 2018, the inspector conducted independent surveys within each area inspected. At the Indianapolis, Indiana facility, the inspector conducted a survey of office space next to the portable gauge storage area and found the readings to be 0.1 millirem (mrem)/hour at the desk and 0.5 mrem/hour at the wall next to the storage area. The office space was occupied by a full-time staff who does not have radiation safety training, is a member of public, and was continuously occupied the office space approximately 20 hours/week with a total of less than 1000 hours in a year. The licensee failed to show compliance with the annual dose limit for individual member of public by demonstrating that if an individual were continuously present in an unrestricted area, the dose from external sources would not exceed 2 mrem in an hour and 50 mrem in a year. The inspector found that the individual received the external dose in excess of 50 mrem in a year, a violation of 10 CFR 20.1302(b)(2)(ii). Furthermore, these readings were consistent with the licensee's survey instrument reading.

4. VIOLATIONS, NCVs, AND OTHER SAFETY ISSUES:

During a review of the licensee's sealed sources leak test report, the inspector identified that a portable gauge, Troxler Model 3440, serial number 20490 last leak test was performed on March 21, 2017, and per the utilization log, the gauge was last used on April 4, 2019. License Condition No. 13 A. of the license states, in part, that the licensee shall conduct sealed sources leak test at intervals not to exceed the intervals specified in the certificate of registration issued by the NRC under 10 CFR 32.210 or by an Agreement State. The licensee's failure to conduct the leak test of a Troxler Model 3440, portable gauge at an interval not to exceed 12 months as specified in the certificate of registration, is a Severity Level IV violation of this License Condition.

Title 10 of the *Code of Federal Regulations* (CFR) 20.1302(b)(2)(ii) in part, requires that licensee shall show compliance with the annual dose limit for individual member of public by demonstrating that if an individual were continuously present in an unrestricted area, the dose from external sources would not exceed 2 mrem in an hour and 50 mrem in a year.

The licensee failed to demonstrate that if an individual member of public were continuously present in an unrestricted area, the dose from external sources would not exceed 50 mrem in a year. The office space next to the portable gauge storage area was occupied by a full-time staff who does not have radiation safety training and is a member of public, continuously occupied the office space approximately 20 hours/week with a total of less than 1000 hours in a year. The inspector performed the radiation survey and did the calculation and found that the individual received the external dose in excess of 50 mrem in a year, a violation of 10 CFR 20.1302(b)(2)(ii).

The inspector determined that the root cause of the violations was a lack of full understanding of the conditions of the license, and the NRC requirements. As corrective actions to restore compliance and to prevent recurrence, the licensee installed the lead lining sheet inside the gauge storage closet and moved the individual office space to new location, away from the portable storage closet. Also, the licensee immediately performed the leak test of the portable gauge and developed sealed source leak test tracking procedure.

5. PERSONNEL CONTACTED:

#* Charles D. Scheuermann – Division Manager, CME
#* Kevin Matthews – Corporate Radiation Safety Officer
#* Kyle Bauer – Corporate Safety Manager
Zachary Ethington – Branch Manager, Bloomington, IN
Shawn Hawk – Site Radiation Safety Officer - Bloomington, IN

* Attended Final exit meeting on May 17, 2019.