November 6, 2024

HILLIS-CARNES
ENGINEERING ASSOCIATES

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U.S. Nuclear Regulatory Commission, Region I
2100 Renaissance Boulevard, Suite 100
King of Prussia, PA 19406-1415

Subject: Radioactive Materials License
License No. 19-30304-02
Docket No. 030-37035
Event No. 57390
Written Follow-up Report (30-day response letter)

Gentlemen;

This report is being submitted as a follow-up within 30 days of an accident involving a nuclear density gauge which occurred on October 18, 2024 at approximately 2:45 PM.

Our operator was transporting the gauge in the bed of his 2012 Honda Ridgeline pickup truck, leaving a project at the U.S. Customs and Border Training Facility. When turning onto Route 340 up an incline in the roadway, concrete samples which were also being transported, shifted and impacted the tailgate, causing the tailgate to open at which time the samples and the nuclear density gauge (Troxler Model No. 3430, Serial No. 27103, Cs-137 Serial No. 750-357, Am 241:Be Serial No. 47-23622)) spilled onto the roadway. The gauge was blocked and braced against the tailgate but was secured to the vehicle with only one tangible barrier which ripped the handle off the transportation case when the case shifted following the tailgate becoming unlatched. The gauge was struck by a tractor trailer traveling on Route 340.

The Cs-137 and the Am 241: Be sources were separated from the body of the gauge. However, the sources remained encapsulated.

The area was immediately cleared to a minimum distance of 30 feet. Local emergency responders were the first on the scene and surveyed the area. I was not on site but was informed that survey readings were taken, and the levels indicated the sources were not leaking. The responders placed both sources back in the transportation case and added a shielding material to reduce the radiation levels emitted from the case. The case was wrapped with multiple layers of duct tape to prevent the lid from opening and was secured with two tangible barriers for transport to our storage facility in Frederick, MD.

The NRC recommended that the gauge remain at our storage facility until they could examine it. Following the NRC's visit to our Frederick storage location on October 21st, we contacted Northeast Technical Services in Westminster. Maryland. They informed us that they could visit our facility on October 23rd to properly package and shipping the materials to their facility for leak testing and disposal. The transfer document and leak test results are attached (Appendix A).

We have tried numerous times to contact the emergency responders to try and determine if anyone came in direct contact with the sources. The gauge was just maintenance at Northeast Technical Services on October 15th and as such, the source rod was coated in grease around the source location at the end of the rod. The rod is still coated in grease which would most likely deter anyone from grasping it at the end containing the Cs-137. The Am 241:Be neutron source was still encapsulated in its lead shielding.

It has been stated that the source rod was initially located approximately 20 feet from our technician's vehicle. The source rod was moved to the vehicle by an unidentified individual. Concern was expressed to HCEA as to what the exposure may have been to the individual. It has been assumed that the source material would have been a minimum of 12 inches for the trunk area of that person. Northeast Technical Services conducted survey meter readings at 12 inches for the source rod tip at their facility with a meter reading of 150Mrem/Hr. With an estimated exposure time of 10 seconds to walk 20 feet, the exposure was calculated to be .05 Mrem. We believe this exposure calculation to be at its highest possibility. Refer to Appendix B for additional information.

The Frederick office conducted an unscheduled meeting on Thursday, 24th to discuss the event. We reiterated all company policies regarding safe and secure transportation practices and emergency responses. All cars, SUVs, and open bed pickup trucks were inspected for compliance with proper blocking, bracing, and double cable/lock barriers.

The details of the accident have been emailed to our entire staff and have been discussed with our field technicians during either toolbox sessions or technician meetings at our other office locations. The incident was reviewed, and we reiterated the necessity for 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.

If you have any questions or require additional information, please contact me at our office.

Very Truly Yours,
HILLIS-CARNES ENGINEERING ASSOCIATES, INC.

David A. Adkins
Corporate RSO

Appendix A

North East Technical Services, Inc

75 Aileron Court, Suite 4
Westminster, MD 21157
1-866-868-2382
Fax 410 751-5091

RADIOACTIVE MATERIAL TRANSFER SHEET

DEVICE BEING TRANSFERRED:

GAUGE MODEL: 3430 SERIAL NUMBER: 27103

SOURCE SERIAL NUMBERS: CS 750-357 Am 47-23622

Survey reading of gauge at destination. (In mrem) Less than 5
(Conduct survey 1 meter from shipping case)

Last Leak Test Date: 10/23/2024

TRANSFERING THE DEVICE FROM:

Company/Entity: Hillis Carnes Engineering Associates
Address: 1660 Bowman Farm Road, Suite 105
Frederick, MD 21701

Company representative: Eric Lindsey Signature Eric Lindsey

TRANSFERING THE DEVICE TO:

Company: North East Technical Services, Inc
Address: 75 Aileron Court, Suite #4
Westminster, MD 21157

Radioactive Materials License Number: MD-13-020-01
Expiration date: 6/24/2027

DATE OF TRANSFER: 10/23/2024

Company representative: Doug Sims Signature Doug Sims

North East Technical Services, Inc is licensed and insured and fully authorized to accept, transfer, sell and service portable nuclear density gauges under radioactive materials license# MD-13-020-01.

North East Technical Services, Inc.
75 Aileron Ct., Suite 4
Westminster, MD 21157
Ph: 410.751.5090 Fax: 410.751.5091

North East Technical Services, Inc.
75 Aileron Ct., Suite 4
Westminster, MD 21157
ATTN:

Shipping Address: *75 Aileron Ct., Suite 4*
Westminster, MD 21157

LEAK TEST CERTIFICATE

MD Materials License # MD-13-020-01

This certifies that leak test analysis was conducted on the sample with the following information. The results shown below accurately represent the level of removeable contamination.

Gauge Model *3430* **Gauge S/N** *27103* **Leak Test Date** *10/23/2024*

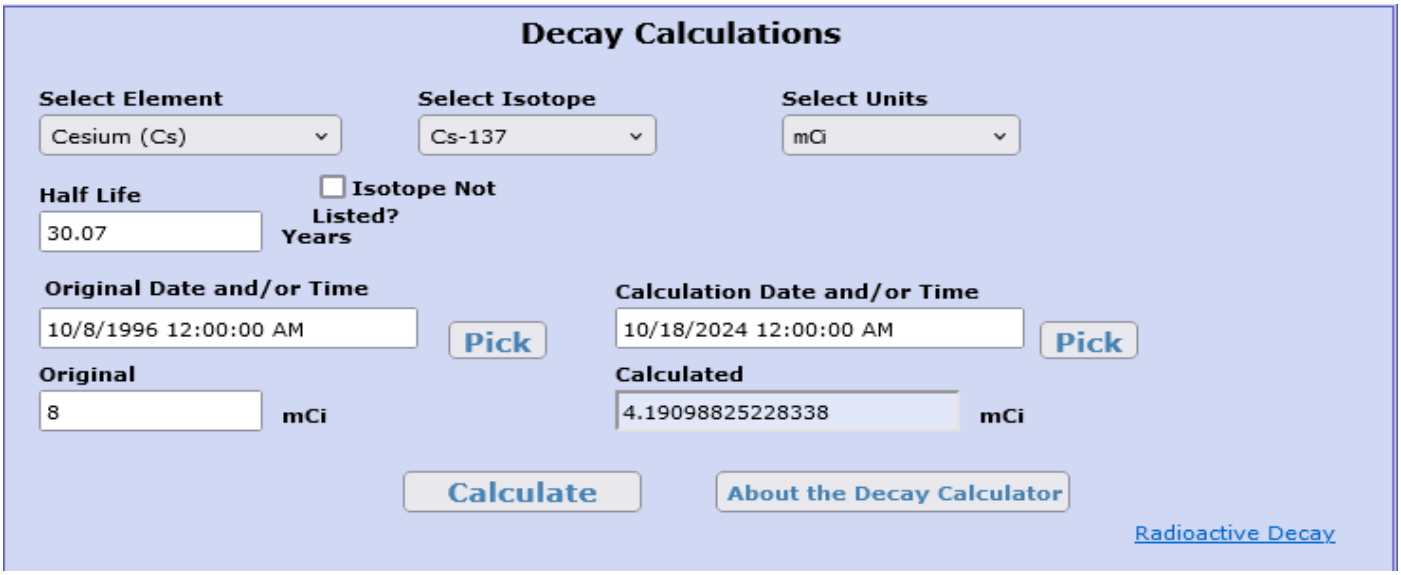
Source	Reading in microCuries
750-357	0.0000022
47-23622	0.00000

Note: 0.005 microCuries (185 Bq) or greater is considered a leaking source. The source(s) tested above may remain in use.

Reviewed by: David Sens *Date:* 10/23/2024

Appendix B

Exposure calculation



At one foot away from the source rod tip our survey meter reads 150 Mrem/Hr.

We estimate a 10 second exposure time.

Exposure is .05 Mrem

We are calculating the exposure at its highest possibility. No credit has been given for any variables that could lower exposure.