

Labcorp Early Development Laboratories Inc.
655 Fairfield Ct.
Ann Arbor, MI 48108

June 20, 2022

USNRC, Region III
2443 Warrenville, Road, Suite 210,
Lisle, IL 60532-4352
Via email to: RidsRgn3MailCenter.Resource@nrc.gov

RE: Leaking Cs-137 Reference Vial

Dear Sir or Madam,

As required by condition 13 D of our license number 21-32816-01, I am providing this letter to formally notify you that a leaking sealed radioactive source has been discovered in our Radiation Lab at 800 Technology Drive, Ann Arbor, MI 48108. The following report is given as required by the license and 10 CFR 30.50(c)(2):

- (i) Description of the event, including the probable cause and the manufacturer and model number (if applicable) of any equipment that failed or malfunctioned;
- (ii) The exact location of the event;
- (iii) The isotopes, quantities, and chemical and physical form of the licensed material involved

Prior to an on-site routine audit on June 16, 2022, I was informed that the licensee's dose calibrator was not functioning normally. While investigating to determine the cause, I identified contamination on the dose calibrator's protective plastic sleeve. I wipe tested the Cs-137 E vial, and found it to have removable contamination of 6916 counts per minute (0.0106 μ Ci), which is in excess of the 0.005 μ Ci reporting limit given in the license.

The wipe test energy spectrum showed a clear peak at the Cs-137 gamma energy of \sim 662 keV, implying that the E vial itself was the cause, not that the E Vial was contaminated with another isotope. The E Vial is the only Cs-137 source typically used with the dose calibrator. The well counter's Cs-137 calibration rod and the survey meters' Cs-137 test disks (all exempt sources) were unlikely to have spread contamination to the dose calibrator.

Below is a description of the failed source:

Radionuclide: Cs-137

Manufacturer: Eckert & Ziegler

Initial Calibration Activity: 0.2018 mCi

Calibration Date: January 1, 2012

Description: E Vial

Model Number: RV-137-200U

Serial Number: 1551-38-17

Current Activity: 0.1587 mCi (as of 6/16/2022)

(iv) Date and time of the event

The leaking source was discovered at approximately 1 PM EDT on June 16, 2022. The exact date and time when the source started leaking is not known.

(v) Corrective actions taken or planned and the results of any evaluations or assessments

After discovering the leak, I placed the source was back into its shielded container and sealed it with tape. Other than the plastic protective sleeve, no other contaminated items were identified, though the wipes I used for testing and my gloves became contaminated. I placed these into shielded hot waste storage container in the hot lab. Area surveys and wipe tests performed in the location where the source was located showed no signs of further contamination with Cs-137. The shielded container was also not found to be contaminated. As such, the leaking source has been fully contained and is currently secure in our source cave.

Sarah Krueger, the only currently active Authorized User, is the only Labcorp staff member who handles the vial source. She reported that she was not aware of the vial being dropped or damaged in any way. She does use hemostats to carry the source rather than her hands, but I did not see any scratch marks on the source indicating that it had been damaged in that way. I can only assume that the vial physically degraded, which is uncommon, though my colleagues at West Physics have encountered it on a few occasions. Despite this, I will recommend to her that they not handle sources with bare metal tools anymore. I will ask them to use their hands, or tongs with plastic or Teflon-coated tips.

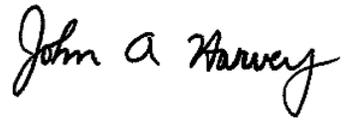
If Eckert & Ziegler will not accept the source as a return, Labcorp will obtain quotes from various hazardous waste disposal companies in our region. Once the source has been properly disposed of, we will notify you again and provide relevant documentation.

(vi) The extent of exposure of individuals to radiation or to radioactive materials without identification of individuals by name

Labcorp employees using radioactive material are instructed to survey themselves before leaving the radiation lab. According to their records, none of them identified contamination during these surveys. I will review their next Landauer Luxel badge reports for any elevated exposures and submit any unusual results to NRC, however, I believe that the possibility of significant exposure to personnel is unlikely, and significant exposure to members of the public is unlikelier still.

Please contact me at 734-678-7309 or john.harvey@westphysics.com if you require further information on this incident.

Sincerely,

A handwritten signature in black ink that reads "John A. Harvey". The signature is written in a cursive style with a large initial "J" and a distinct "A".

John Harvey, Ph.D., DABR, CHP
Radiation Safety Officer, Labcorp Early Development Laboratories Inc.
Chief Medical & Health Physicist, West Physics