NRC FORM 592M
(10-04-2022)

U.S. NUCLEAR REGULATORY COMMISSION

Materials Inspection Record

1. Licensee Name:	2. Docket Number(s):	3. License Number(s)
University of Evansville	030-00707, 070-01045	13-09810-01, SNM-995

4. Report Number(s):	5. Date(s) of Inspection:
2023-001	12/13/23; in-office review through 07/11/24; exit 07/18/24

6. Inspector(s):	7. Program Code(s):	8. Priority:	9. Inspection Guidance Used:
Ryan Craffey	03620, 22120	5	IP 87140, 87141

10. Licensee Contact Name(s):	11. Licensee E-mail Address:	12. Licensee Telephone Number(s):
John Stamm, PhD - RSO Mark Davis, PhD - Future RSO	js384@evansville.edu md7@evansville.edu	812-488-2671 812-488-6423

13. Inspection Type:	14. Locations Inspected:	15. Next Inspection Date (MM/DD/YYYY):
☐ Initial	☐ Hybrid	
☑ Routine	☑ Main Office	12/13/2028
☐ Announced	☐ Field Office	☑ Normal
☐ Non-Routine	☐ Temporary Job Site	☐ Extended
☑ Unannounced	☐ Remote	☐ Reduced
		☐ No change

16. Location(s) Inspected List:

Koch Center for Engineering and Science - 1800 Lincoln Avenue, Evansville, IN

17. Scope and Observations:

The University of Evansville, a private university in Evansville, Indiana, was authorized by NRC License No. 13-09810-01 and SNM-995 to use sealed sources of byproduct material and special nuclear material, respectively, for laboratory experiments and student instruction. At the time of the inspection, one AU (the RSO) used these sources every spring for a laboratory class in the Physics Department. The University also possessed a variety of historical check and reference sources and a Ni-63 ECD in secure storage, all pending disposal.

The inspector toured the Koch Center for Engineering and Science in Evansville. All areas were adequately posted, as confirmed by independent surveys, and all licensed material was adequately secured. The inspector discussed the use of licensed material with the AU and observed demonstrations of leak test collection and analysis, performed annually prior to use (the material remained in secure storage otherwise). The inspector also reviewed a selection of records including leak test results and physical inventory records.

While reviewing the licensee's inventory of sources, the inspector found several small sources from the 1960's to be labeled with the words "radium," "Ra-226," or "RaDEF" (the historical name given to a mixture of Pb-210, Bi-210, and Po-210). During the period of in-office review, the licensee accounted for all historical sources in its possession, and the inspector confirmed that the licensee possessed a neutron reference source nominally containing 100 microcuries of Pb-210, Bi-210 and Po-210 in a beryllium matrix, as well as two survey meter check sources containing 2-3 mg each of radium-226. These represented non-exempt quantities of byproduct material, but had not previously been authorized on the University's byproduct material license. This was noted as a SLIV violation of 10 CFR 30.3(a) and 30.3(c)(2), respectively. Since the RSO was unaware that discrete sources of Ra-226 were added to the definition of byproduct material in 2005, and the other criteria in Enforcement Manual (Part II Section 3.9.2.A) were met, the NRC exercised discretion not to cite the violation of 10 CFR 30.3(c)(2).

The root cause of both violations was a lack of full understanding of licensing requirements. The use of historical names for Pb-210, Bi-210, and Po-210 was noted as a contributing factor to the violation of 10 CFR 30.3(a)

Materials Inspection Record (Continued)

As corrective action, on April 5, 2024, the University submitted a request to add the previously unauthorized sources to its byproduct material license. Region III MLB approved the request on June 27, 2024 with the issuance of Amendment No. 22. A written response to the report will nevertheless be required to confirm the licensee's (specifically - the future RSO's) understanding that these sources are subject to all conditions of the byproduct materials license, including periodic leak tests and physical inventories.

During the previous routine inspection in 2018, the licensee was issued two SLIV violations for failing to perform leak tests and physical inventories as required by Conditions 12.D and 16 of its byproduct material license, respectively. The inspector reviewed the licensee's corrective actions and confirmed that it had performed physical inventories every six months since then, and although the ECD in storage (the subject of the LC 12.D violation) was not required to be leak tested again until 2028, the licensee was still aware of the requirement and still planned to test it then or prior to disposal, whichever came first. As such, the NRC considers both violations closed.

Signature and Date - Branch Chief

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