



Materials Inspection Report

1. Licensee/Location Inspected: Purdue University West Lafayette, IN 47907 Report Number(s) 2024-001	2. NRC/Regional Office Region III U. S. Nuclear Regulatory Commission 2443 Warrenville Road, Suite 210 Lisle, IL 60532-4352
---	--

3. Docket Number(s) 070-00152	4. License Number(s) SNM-142	5. Date(s) of Inspection 02/06/24; exit 04/18/24
---	--	--

LICENSEE:
 The inspection was an examination of the activities conducted under your license as they relate to radiation safety and to compliance with the Nuclear Regulatory Commission (NRC) rules and regulations and the conditions of your license. The inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector. The inspection findings are as follows:

1. Based on the inspection findings, no violations were identified.

2. Previous violation(s) closed.

3. During this inspection, certain of your activities, as described below and/or attached, were in violation of NRC requirements, and were assessed at Severity Level IV, in accordance with the NRC Enforcement Policy.

A. The violation(s), specifically described to you by the inspector as non-cited violations, are not being cited because they were self-identified, non-repetitive, corrective action was or is being taken, and the remaining criteria in the NRC Enforcement Policy were satisfied.
 (Non-cited violation(s) was/were discussed involving the following requirement(s))

B. The following violation(s) is/are being cited in accordance with NRC Enforcement Policy. This form is a NOTICE OF VIOLATION, which may be subject to posting in accordance with 10 CFR 19.11.
 (Violations and Corrective Actions)

Contrary to 10 CFR 74.13(a), Purdue University performed physical inventories of Special Nuclear Material in its possession on 03/31/20, 08/14/20, 02/01/21, and 09/30/22, and was subject to 10 CFR 74.19(c), but did not submit a Material Balance Report (MBR) within 60 calendar days of beginning the inventory. Specifically, MBRs were not submitted for the first three inventories until 04/07/21, and the fourth until 02/21/23. As corrective action, the outgoing Radiation Safety Officer (RSO) included the requirement on turnover documentation provided to the incoming RSO, who performed a subsequent inventory on 04/03/24 and submitted an MBR on 04/17/24. The licensee also committed to add a recurring task its program management software to ensure that future MBRs were submitted in a timely fashion.

Statement of Corrective Actions

I hereby state that, within 30 days, the actions described by me to the Inspector will be taken to correct the violations identified. This statement of corrective actions is made in accordance with the requirements of 10 CFR 2.201 (corrective steps already taken, corrective steps which will be taken, date when full compliance will be achieved). I understand that no further written response to NRC will be required, unless specifically requested.

TITLE	PRINTED NAME	SIGNATURE AND DATE
LICENSEE'S REPRESENTATIVE	Nathan Claus	Digitally signed by Nathan Claus Date: 2024.04.29 09:22:08 -04'00'
NRC INSPECTOR	Ryan Craffey	Digitally signed by Ryan J. Craffey Date: 2024.04.19 12:19:04 -05'00'
BRANCH CHIEF	Rhex Edwards	Digitally signed by RHEX EDWARDS Date: 2024.04.26 08:22:07 -05'00'



Materials Inspection Record

1. Licensee Name: Purdue University		2. Docket Number(s): 070-00152		3. License Number(s) SNM-142	
4. Report Number(s): 2024-001			5. Date(s) of Inspection: February 6, 2024; exit April 18, 2024		
6. Inspector(s): Ryan Craffey		7. Program Code(s): 21310	8. Priority: 5	9. Inspection Guidance Used: IP 87140	
10. Licensee Contact Name(s): Nathan Claus - RSO		11. Licensee E-mail Address: njclaus@purdue.edu		12. Licensee Telephone Number(s): 765-494-1478	
13. Inspection Type: <input checked="" type="checkbox"/> Routine <input type="checkbox"/> Announced <input type="checkbox"/> Non-Routine <input checked="" type="checkbox"/> Unannounced		14. Locations Inspected: <input type="checkbox"/> Hybrid <input checked="" type="checkbox"/> Main Office <input type="checkbox"/> Temporary Job Site <input type="checkbox"/> Field Office <input type="checkbox"/> Remote		15. Next Inspection Date (MM/DD/YYYY): 02/06/2029 <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Extended <input type="checkbox"/> Reduced <input type="checkbox"/> No change	
16. Location(s) Inspected List: Campus of Purdue University, West Lafayette, IN					
17. Scope and Observations: Purdue University was authorized by NRC License No. SNM-142 to use various kinds and quantities of special nuclear material for research and student instruction. At the time of the inspection, the University still possessed enriched uranium fuel rods for use at its Fast Breeder Blanket Facility (FBBF), which has been inactive for several decades, as well as samples of enriched uranium for thermal studies and testing of novel radiation detectors, encapsulated PuBe neutron sources, natural uranium, and various calibration and reference sources. Although authorized by this license for encapsulated sources of californium, the University has not possessed any since 2018 when those previously used at FBBF were transferred to an authorized recipient. The University actively used PuBe neutron sources, calibration and reference sources, and natural uranium in a sub-critical assembly (see also 040-02681). The RSO for the University's broad scope license (030-00696) also oversaw the SNM license. The inspector toured the University's campus in West Lafayette and visited an off-site laboratory where some samples of enriched uranium were currently stored for testing novel radiation detectors. All areas were adequately posted and all licensed material was adequately secured. The inspector performed independent beta/gamma surveys, supplemented with neutron surveys performed by the licensee, confirmed that all material possessed at the time of the last inventory was still present, and reviewed a selection of records including sealed source leak tests, personnel dosimetry reports, instrumentation calibration records, and physical inventory documentation. The inspector also reviewed the licensee's reporting to NMMSS and through this review identified a SLIV violation of 10 CFR 74.13(a) for failing to submit Material Balance Reports in a timely fashion on four occasions since the last routine inspection. The root cause appeared to be inadequate turnover between outgoing and incoming RSOs. As corrective action, the outgoing RSO included the requirement on turnover documentation provided to the incoming RSO, who performed a subsequent inventory on 04/03/24 and submitted an MBR on 04/17/24. The licensee also committed to add a recurring task its program management software (EHSA) to ensure that future MBRs were submitted in a timely fashion.					

Materials Inspection Record (Continued)

Signature and Date - Branch Chief



Digitally signed by RHEX EDWARDS
Date: 2024.04.26 08:21:16 -05'00'