

SAFETY INSPECTION REPORT AND COMPLIANCE INSPECTION

<p>1. LICENSEE/LOCATION INSPECTED:</p> <p>Curators of the University of Missouri Research Reactor Center 1513 Research Park Drive Columbia, MO</p> <p>REPORT NUMBER(S) 2018001</p>	<p>2. NRC/REGIONAL OFFICE</p> <p>Region III U. S. Nuclear Regulatory Commission 2443 Warrenville Road, Suite 210 Lisle, IL 60532-4352</p>	
<p>3. DOCKET NUMBER(S)</p> <p>030-32695</p>	<p>4. LICENSE NUMBER(S)</p> <p>24-00513-39</p>	<p>5. DATE(S) OF INSPECTION</p> <p>5/17/18, with in-office review through 5/23/18</p>

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. 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, and corrective action was or is being taken, and the remaining criteria in the NRC Enforcement Policy, to exercise discretion, were satisfied.

Non-cited violation(s) were discussed involving the following requirement(s):

- 4. During this inspection, certain of your activities, as described below and/or attached, were in violation of NRC requirements and 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)

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	DATE
LICENSEE'S REPRESENTATIVE			
NRC INSPECTOR	Robert G. Gattone, Jr. & Kevin Null	<i>Robert G. Gattone, Jr.</i> <i>Kevin Null</i>	5/23/18 5/23/18
BRANCH CHIEF	Aaron T. McCraw	<i>Aaron T. McCraw</i> for ATM	5/23/18

Docket File Information

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6. INSPECTION PROCEDURES USED 87126	7. INSPECTION FOCUS AREAS All
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SUPPLEMENTAL INSPECTION INFORMATION

1. PROGRAM CODE(S) 01100	2. PRIORITY 3	3. LICENSEE CONTACT Ron Dobey, RSO	4. TELEPHONE NUMBER (573) 882-5218
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Main Office Inspection Next Inspection Date: 05/17/2023
 Field Office Inspection _____
 Temporary Job Site Inspection _____

PROGRAM SCOPE

This was an announced, routine inspection. The in-office review included information that was unavailable during the onsite inspection (i.e., information regarding an americium-241 (Am-241) sealed source pertinent to the leak test frequency). The licensee conducted research and development, calibration of licensed material sources, and constancy checks of licensed material sources. Most of the sealed sources were cesium-137 (Cs-137) and cobalt-57 (Co-57). The licensee used plated sources containing thorium, plutonium, and Am-241 for instrument calibrations and efficiency checks. There were approximately 75 employees involved with conducting principal activities under the license. There were no devices that contained sealed sources of licensed material under the license. The licensee did not conduct commercial distribution. Licensed material was not used in or on human beings, and there were no field applications where activity was released. The radioactive waste generated for this program was transferred to the non-materials, research reactor license for ultimate disposal via transfer to an authorized person.

Performance Observations

The inspectors: (1) observed an authorized person perform a daily check for a dose calibrator calibration using a Co-57 source containing 0.77 millicuries (mCi) and a Cs-137 source containing 0.203 mCi and the individual wore appropriate personal protection equipment (e.g., rubber gloves and a lab coat), and a whole body dosimeter and a direct reading dosimeter (DRD); (2) noted that a licensee survey instrument was calibrated as required; (3) reviewed selected records of Radiation Safety Committee (RSC) meeting minutes that included, in part, discussing training and experience for three individuals that were ultimately approved for new projects; (4) noted that the RSC reviewed the dosimeter badge results; (5) reviewed records showing the annual dosimeter badge results for 2017 and 2018 (through 3/31/18), and the highest annual whole body and extremity doses were 172 millirem (mrem), and 1118 mrem, respectively; (6) observed two authorized persons conduct a quarterly dose calibrator linearity test using 1.5 curies of technitium-99m (Tc-99m), and the inspectors noted that the individuals wore gloves, lab coat, a DRD, and ring dosimeters; (7) used an NRC-owned survey instrument to conduct an independent ambient exposure rate survey at selected areas in a restricted area involving the aforementioned quarterly dose calibrator linearity test using 1.5 curies of Tc-99m and there were no concerns; and (8) reviewed selected inventory and sealed source leak test records and there were no concerns.

*CW for ADJ
5/23/18*

No violations of NRC requirements were identified as a result of this inspection.