



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION III  
2056 WESTINGS AVENUE, SUITE 400  
NAPERVILLE, IL 60563-2657

April 3, 2025

EA-23-121  
EAF-RIII-2023-0015  
EN 56337  
NMED No. 230049 (Closed)

Lee Seabrooke  
Associate Vice President Research,  
Integrity, and Compliance  
Saint Louis University  
1402 South Grand Blvd.  
St. Louis, MO 63104

SUBJECT: EXERCISE OF DISCRETION; NOTICE OF VIOLATION AND PROPOSED  
IMPOSITION OF CIVIL PENALTY - \$9,000; NRC ROUTINE INSPECTION  
REPORT NO. 03011789/2023001 (DRSS) – SAINT LOUIS UNIVERSITY

Dear Lee Seabrooke:

This letter refers to the U.S. Nuclear Regulatory Commission (NRC) inspection conducted on June 21-23, 2023, at your locations in St. Louis, Missouri, with continued in-office review through October 28, 2024. The purpose of the inspection was to review activities performed under your NRC license to ensure that activities were being performed in accordance with NRC requirements, and to review the circumstances surrounding the loss of a radium-223 unit dose that occurred on February 1, 2023. During the inspection five apparent violations of NRC requirements were identified. The circumstances surrounding the apparent violations, the significance of the issues, and the need for lasting and effective corrective actions were discussed with you during a final exit meeting on October 28, 2024. Inspection Report No. 03011789/2023001 (DRSS) was issued on November 25, 2024, and can be found in the NRC's Agencywide Documents Access and Management System (ADAMS) at accession number ML24306A130. ADAMS is accessible from the NRC web site at <https://www.nrc.gov/reading-rm/adams.html>.

In our November 25, 2024, letter transmitting the inspection report, we informed you that five apparent violations were being considered for escalated enforcement action, including a civil penalty. In the letter, we provided you the opportunity to address the apparent violations identified in the report by either attending a predecisional enforcement conference, engaging the NRC in Alternative Dispute Resolution (ADR) mediation, or by providing a written response before we made our final enforcement decision. In a letter dated December 19, 2024 (non-public), you provided a response to the apparent violations including corrective actions. In your letter, you also contested apparent violations involving the failure to make an immediate report as required by Title 10 of the *Code of Federal Regulations* (10 CFR) 20.2201(a), and the failure to have written procedures that include steps for determining whether a medical event occurred as required by 10 CFR 35.41(b)(5). In an email dated March 4, 2025 (non-public), you provided an additional response to the contested apparent violations including additional information that had not been previously provided to the NRC.

After a review of the information provided in your responses, the NRC has determined that violations of 10 CFR 20.2201(a) and 10 CFR 35.41(b)(5) did not occur.

Based on the information developed during the inspection and the information provided in your responses to the inspection report, dated December 19, 2024, the NRC has determined that two escalated violations of NRC requirements occurred and is proceeding with enforcement action. The violations and the circumstances surrounding them are described in detail in the subject inspection report. The violations involved the failure to secure licensed materials from unauthorized removal or access as required by 10 CFR 20.1801; and the failure to perform radiation surveys before disposing licensed material by transfer to an authorized recipient, as required by 10 CFR 20.1501(a). These failures resulted in a unit dosage of radium-223 being disposed in the normal trash.

In your response, you provided the following actions to correct and prevent recurrence of the above violations: (1) discussed with nuclear medicine technologists the importance of visually inspecting and performing radiation surveys prior to placing boxes in the hallway for disposal; (2) designated a specific area for the exclusive placement of incoming therapy dose shipments within the hot lab; (3) formalized a procedure for the disposition of empty therapy dose shipment boxes; (4) installed cameras in the hot lab as an added security and accountability measure; and (5) committed to providing annual refresher training to the nuclear medicine technologists on the updated procedure.

The NRC considers the loss of NRC-regulated material a significant safety and security concern because of the potential for unauthorized individuals to gain control of the radioactive material, which could result in an unintended exposure to a member of the public. Therefore, these violations have been categorized in accordance with the NRC Enforcement Policy as a Severity Level (SL) III problem. The current Enforcement Policy is included on the NRC's web site at <https://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html>. In accordance with Section 2.3.4 of the Enforcement Policy, the NRC is exercising discretion to propose imposition of a civil penalty of at least the base amount for the violations involving the loss of radioactive material.

Therefore, to emphasize the importance of maintaining control of radioactive material, I have been authorized, after consultation with the Director, Office of Enforcement, to issue the enclosed Notice of Violation and Proposed Imposition of Civil Penalty (Notice) in the base amount of \$9,000 for the SL III problem. In addition, issuance of this Notice constitutes escalated enforcement action that may subject you to increased inspection effort. The NRC also includes significant enforcement actions on its web site at [http://www.nrc.gov/reading\\_rm/doc\\_collections/enforcement/actions/](http://www.nrc.gov/reading_rm/doc_collections/enforcement/actions/).

You may pay the proposed civil penalty in accordance with NUREG/BR-0254, which can be found on the NRC's website at <https://www.nrc.gov/reading-rm/doc-collections/nuregs/brochures/br0254/index.html>. When using NUREG/BR-0254 to pay the civil penalty, the invoice number should be used as the "enforcement action identifier" when submitting your payment through one of the approved methods listed in the brochure. The NRC may consider a request for additional time to pay the proposed civil penalty, including the option to enter into an installment agreement, if payment of the civil penalty as a lump sum in the

required timeframe would pose a financial hardship. To request additional time to pay, you must submit a written request, with appropriate justification explaining your financial hardship, to [NRCCollections.Resource@nrc.gov](mailto:NRCCollections.Resource@nrc.gov). All requests should be submitted in sufficient time to allow the NRC the ability to review your request for additional time to pay before the 30-day payment period expires.

If you disagree with this enforcement sanction, you may deny the violation, as described in the Notice, or you may request ADR with the NRC in an attempt to resolve this issue. ADR is a general term encompassing various techniques for resolving conflicts using a neutral third party. The technique that the NRC has decided to employ is mediation. Mediation is a voluntary, informal process in which a trained neutral (the “mediator”) works with parties to help them reach resolution. If the parties agree to use ADR, they select a mutually agreeable neutral mediator who has no stake in the outcome and no power to make decisions. Mediation gives parties an opportunity to discuss issues, clear up misunderstandings, be creative, find areas of agreement, and reach a final resolution of the issues. Additional information concerning the NRC’s ADR program can be found at <http://www.nrc.gov/about-nrc/regulatory/enforcement/adr.html>.

The Institute on Conflict Resolution (ICR) at Cornell University has agreed to facilitate the NRC’s program as a neutral third party. **If you are interested in pursuing this issue through the ADR program, please contact: (1) the ICR at (877) 733-9415; and (2) Diana Betancourt-Roldan at 630-810-4373 within 10 days of the date of this letter.** You may also contact both ICR and Ms. Bentancourt-Roldan for additional information. Your submitted signed agreement to mediate using the NRC ADR program will stay the 30-day time period for payment of the civil penalties and the required written response, as identified in the enclosed Notice, until the ADR process is completed.

The NRC also identified a Severity Level IV violation involving the failure to prepare a written directive that was signed by an authorized user before administration of a therapeutic dose of radiation from byproduct material, as required by 10 CFR 35.40(a). This non-repetitive, licensee-identified and corrected violation is being treated as a Non-Cited Violation, consistent with Section 2.3.2.b of the Enforcement Policy.

The NRC has concluded that information regarding: (1) the reason for the violations, or if contested, the basis for contesting the violations; (2) the corrective steps that have been taken and the results achieved; (3) the corrective steps that will be taken; and (4) the date when full compliance was achieved is already adequately addressed on the docket in Inspection Report No. 03011789/2023001 (DRSS), your letter dated December 19, 2024, and your email dated March 4, 2025. Therefore, you are not required to respond to this letter unless the description therein does not accurately reflect your corrective actions or your position. In that case, or if you choose to provide additional information, you should follow the instructions specified in the enclosed Notice.

In accordance with 10 CFR 2.390 of the NRC’s “Agency Rules of Practice and Procedure,” a copy of this letter, its enclosures, and your response, if you choose to provide one, will be made available electronically for public inspection in the NRC Public Document Room and from the NRC’s ADAMS, accessible from the NRC web site at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction.

If you have any questions concerning this matter, please contact Diana Betancourt-Roldan, Enforcement/Investigations Officer, at 630-810-4373 or [diana.betancourt@nrc.gov](mailto:diana.betancourt@nrc.gov).

Sincerely,



Signed by Giessner, Jack  
on 04/03/25

John B. Giessner  
Regional Administrator

Docket No. 030-11789  
License No. 24-00196-07

Enclosure: Notice of Violation and Proposed  
Imposition of Civil Penalty  
Civil Penalty Invoice No.  
EAF-RIII-2023-0015

cc w/encl: Mark Haenchen, M.S., J.D., RSO  
Dana Baum, Ph.D., RSC Chair  
Kelly Baumer, Vice President Clinical  
Operations  
State of Missouri

Letter to L. Seabrooke from J. Giessner dated April 3, 2025.

SUBJECT: EXERCISE OF DISCRETION; NOTICE OF VIOLATION AND PROPOSED IMPOSITION OF CIVIL PENALTY - \$9,000; NRC ROUTINE INSPECTION REPORT NO. 03011789/2023001 (DRSS) – SAINT LOUIS UNIVERSITY

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NAME	KLambert:bw		ETindle-Engelmann for REdwards		DCurtis		CRivera Diaz for JPeralta	
DATE	3/19/2025		3/20/2024		3/24/2025		3/25/2025	
OFFICE	OGC		RIII-EICS		RIII-ORA			
NAME	RCarpenter		JDraper for DBetancourt-Roldan		JGiessner			
DATE	3/27/2025		4/3/2025		4/3/2025			

**OFFICIAL RECORD COPY**

NOTICE OF VIOLATION  
AND  
PROPOSED IMPOSITION OF CIVIL PENALTY

Saint Louis University  
St. Louis, Missouri

Docket No. 030-11789  
License No. 24-00196-07  
EA-23-121  
EAF-RIII-2023-0015

During a U.S. Nuclear Regulatory Commission (NRC) inspection conducted on June 21-23, 2023, with continued in-office review through October 28, 2024, violations of NRC requirements were identified. In accordance with the NRC Enforcement Policy, the NRC proposes to impose a civil penalty pursuant to Section 234 of the Atomic Energy Act of 1954, as amended (Act), 42 U.S.C. 2282, and 10 CFR 2.205. The violations and associated civil penalty are set forth below:

- A. Title 10 of the *Code of Federal Regulations* (10 CFR) 20.1801 requires that the licensee secure from unauthorized removal or access licensed materials that are stored in controlled or unrestricted areas.

Contrary to the above, between February 1, 2023, and February 2, 2023, the licensee failed to secure from unauthorized removal or limit access to a unit dosage containing approximately 146 microcuries of radium-223 that was stored in a controlled area. Specifically, the failure to secure the unit dosage resulted in the dosage being disposed of in the normal hospital trash and then disposed of in a municipal waste landfill.

- B. Title 10 CFR 20.1501(a) requires, in part, that each licensee make or cause to be made surveys that may be necessary for the licensee to comply with the regulations in 10 CFR Part 20 and are reasonable under the circumstances to evaluate the magnitude and extent of radiation levels, concentrations or quantities of residual radioactivity, and the potential radiological hazards of the radiation levels and residual radioactivity detected.

Title 10 CFR 20.2001(a)(1) requires that a licensee dispose of licensed material by transfer to an authorized recipient as provided in § 20.2006 or in the regulations in parts 30, 40, 60, 61, 63, 70, and 72 of this chapter.

Contrary to the above, between February 1, 2023, and February 2, 2023, the licensee did not make surveys to assure compliance with 10 CFR 20.2001(a) to dispose of licensed material by transfer to an authorized recipient. Specifically, the licensee did not perform an adequate survey of the shipping package and the hot lab non-radioactive waste container before disposing of a unit dosage, containing 146 microcuries of radium-223, as normal, non-radioactive waste.

This is a Severity Level III problem (Enforcement Policy Section 2.3.4).  
Civil Penalty - \$9,000 (EA-23-121) (EAF-RIII-2023-0015)

The NRC has concluded that information regarding the reason for the violations, the corrective actions taken and planned to correct the violations and prevent recurrence and the date when full compliance was achieved is already adequately addressed on the docket in Inspection

Enclosure

Report No. 03011789/2023001(DRSS), the Licensee's letter December 19, 2024, and the Licensee's email dated March 4, 2025. However, if the description therein does not accurately reflect your position or your corrective actions, you are required to submit a written statement or explanation pursuant to 10 CFR 2.201 within 30 days of the date of the letter transmitting this Notice of Violation. In that case, or if you choose to respond, clearly mark your response as a "Reply to a Notice of Violation, EA-23-121" and send it to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, One White Flint North, 11555 Rockville Pike, Rockville, MD 20852-2738, with a copy to the Regional Administrator, U.S., Nuclear Regulatory Commission, Region III, 2056 Westings Avenue, Naperville, IL 60563 and the Document Control Desk, Washington, DC 20555-0001.

The Licensee may pay the civil penalty proposed above, or the cumulative amount of the civil penalties if more than one civil penalty is proposed by submitting the payment in accordance with NUREG/BR-0254, which can be found on the NRC's website at <https://www.nrc.gov/reading-rm/doc-collections/nuregs/brochures/br0254/index.html>.

The Licensee may protest the imposition of the civil penalty in whole or in part, by a written answer addressed to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, within 30 days of the date of this Notice. Should the Licensee fail to answer within 30 days of the date of this Notice, the NRC will issue an order imposing the civil penalty. Should the Licensee elect to file an answer in accordance with 10 CFR 2.205 protesting the civil penalty, in whole or in part, such answer should be clearly marked as an "Answer to a Notice of Violation" and may: (1) deny the violations listed in this Notice, in whole or in part; (2) demonstrate extenuating circumstances; (3) show error in this Notice; or (4) show other reasons why the penalty should not be imposed. In addition to protesting the civil penalty in whole or in part, such answer may request remission or mitigation of the penalty.

In requesting mitigation of the proposed penalty, the response should address the factors addressed in Section 2.3.4 of the Enforcement Policy. Any written answer addressing these factors pursuant to 10 CFR 2.205 should be set forth separately from the statement or explanation provided pursuant to 10 CFR 2.201 but may incorporate parts of the 10 CFR 2.201 reply by specific reference (e.g., citing page and paragraph numbers) to avoid repetition. The attention of the Licensee is directed to the other provisions of 10 CFR 2.205 regarding the procedure for imposing (a) civil penalty.

Upon failure to pay any civil penalty which subsequently has been determined in accordance with the applicable provisions of 10 CFR 2.205 to be due, this matter may be referred to the Attorney General, and the penalty, unless compromised, remitted, or mitigated, may be collected by civil action pursuant to Section 234c of the Act, 42 U.S.C. 2282c.

The responses noted above, i.e., Reply to Notice of Violation, Statement as to payment of civil penalty, and Answer to a Notice of Violation, should be addressed to: Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, One White Flint North, 11555 Rockville Pike, Rockville, MD 20852-2738, with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region III, 2056 Westings Avenue, Naperville IL 60563 and the Document Control Center, Washington, DC 20555-0001.

If you choose to respond, your response will be made available electronically for public inspection in the NRC Public Document Room and from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC web site at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not

include any personal privacy, proprietary, or classified information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request that such material is withheld from public disclosure, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information).

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days of receipt.

Dated this 3rd day of April 2025.





Saint Louis University  
1402 SOUTH GRAND BOULEVARD  
RADIATION SAFETY OFFICE  
ST. LOUIS, MO 63104



04/03/2025

**Address/Customer Information**

Saint Louis University  
1402 SOUTH GRAND BOULEVARD  
RADIATION SAFETY OFFICE  
ST. LOUIS, MO 63104

**Customer Codes**

Account Code: L00000983/1

**Bill Information**

Bill Number: EAF-RIII-2023-0015  
Amount Due: \$9,000.00  
Due Date: 05/03/2025

**Contact Us**

Phone Number: 301-415-7554  
Fax Number: 301-415-4135  
Email Address: Fees.Resource@nrc.gov

**Remit Payment Online at:**

www.pay.gov  
(see NUREG/BR-0254,  
Payment Methods brochure for  
other electronic payment options)

**Bill Summary**

Initial Charges	\$9,000.00
Discount	0.00
Surcharge	0.00
Interest Charges	0.00
Penalty Charges	0.00
Admin Charges	0.00
Bill Amount	\$9,000.00
Collected	0.00
Applied Credit	0.00
Adjustments	0.00
Amount Due	\$9,000.00

**Credit Summary**

Applied Credit	\$0.00
Unapplied Credit	0.00
Credit Total	\$0.00

**Comments:**

For questions, contact the NRC Financial Services and Operations Branch at (301) 415-7554 or by email at Fees.Resource@nrc.gov. For NRC debt collection procedures, including interest and penalty provisions, see 31 U.S.C. 3717, 4 CFR 101-105 and 10 CFR 15.

If this invoice is related to an Order Imposing a Civil Penalty,

Saint Louis University is required to pay the Civil Penalty within 30 days of the Order date. If payment is in response to a Notice of Violation and Proposed Imposition of a Civil Penalty, please follow the instructions in the Notice. The NRC may consider a request for additional time to pay the Civil Penalty, including the option to enter into an installment agreement, if appropriate. All requests for additional time to pay an invoice must be submitted in writing, with appropriate justification, to NRCCollections.Resource@nrc.gov, and should be submitted sufficiently ahead of time to allow the NRC time to review the request for additional time to pay within the 30-day payment period. This Invoice is related to the Civil Penalty proposed or imposed under EAF-RIII-2023-0015 issued to Saint Louis University. Please include this reference number on your payment method (see attached Payments Methods Brochure).

Please see the NUREG/BR-0254, Payment Methods brochure for instructions on how to make domestic and international payments. EFFECTIVE OCTOBER 1, 2024, THE NRC WILL ONLY ACCEPT ELECTRONIC PAYMENT METHODS. PAPER METHODS OF PAYMENT, INCLUDING CHECKS, WILL NO LONGER BE ACCEPTED. Please refer to the terms and conditions brochure for information on interest, penalties, and administrative fees associated with delinquent payments. Please reference the invoice number on the remittance.

**Customer Information**

L00000983/1  
Saint Louis University  
1402 SOUTH GRAND BOULEVARD  
RADIATION SAFETY OFFICE  
ST. LOUIS, MO 63104

**Change of Address:**

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**Phone:**

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**Remit Payment Online at:**

www.pay.gov  
(see NUREG/BR-0254,  
Payment Methods brochure for  
other electronic payment options)

**This Payment References the following Bill:**

EAF-RIII-2023-0015

**Outstanding Amount Due:**

\$9,000.00

**Amount Enclosed:**

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