



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION III
2443 WARRENVILLE RD. SUITE 210
LISLE, IL 60532-4352

January 15, 2016

EA-15-275

Ms. Nancy A. Burchell, Radiation Safety Officer
Children's Mercy Hospital
2440 Pershing, G52
Kansas City, MO 64108-9898

**SUBJECT: NRC SPECIAL INSPECTION REPORT NO. 99990003/2015006(DNMS) AND
NOTICE OF VIOLATION – CHILDREN'S MERCY HOSPITAL**

Dear Ms. Burchell:

On December 1, 2015, an inspector from the U.S. Nuclear Regulatory Commission (NRC) conducted an in-office review of the circumstances surrounding improper disposal of one Perkin Elmer Tri Carb 2100, Serial No. 432178, liquid scintillation counter (LSC). The NRC initiated this review after Advantage Metal Recycling of Kansas City contacted the State of Missouri Department of Health which in-turn contacted the NRC Region III office on December 1, 2015, to report that the Advantage Metal Recycling found a nominal 18.8 microcurie (uCi) Barium-133 (Ba-133) source while salvaging the Perkin Elmer Tri-Carb 2100 Liquid Scintillator Counter (LSC) device. The device was traced back to Children's Mercy Hospital, Kansas City. The Children's Mercy Hospital disposed the LSC after the research laboratory was decommissioned. It was determined that the LSC originally contained an 18.8 uCi Ba-133 (calibrated, December 1, 2003) internal quenching source. By the time the source was found, the source had decayed to less than 8.51 uCi and did not present a risk to public health and safety. Mr. Zahid Sulaiman of my staff presented the findings of this review to you via telephone on December 30, 2015.

During this in-office review, the NRC staff examined activities conducted under your general license related to public health and safety. Additionally, the staff examined your compliance with the Commission's rules and regulations. The in-office review consisted of interviews with personnel and examination of information provided by you to the NRC.

Based on the results of this in-office review and the information you provided, the NRC has determined that a Severity Level IV violation of NRC requirements occurred. The violation was evaluated in accordance with the NRC Enforcement Policy. The current Enforcement Policy is included on the NRC's website at <http://www.nrc.gov/about-nrc/regulatory/enforcement/enforcepol.html>. The violation concerned the licensee's failure to properly dispose or transfer the device as required by Title 10 of the *Code of Federal Regulations* (CFR) 31.5(c)(8)(i). The violation is cited in the enclosed Notice of Violation (Notice). The NRC is citing the violation in

the Notice because the inspector identified the violation. The NRC is citing the violation at Severity Level IV (very low safety significance), because the unauthorized transfer of the decayed source did not present a hazard to public health and safety.

The inspector determined that the root cause of the violation was that the Children's Mercy Hospital was not aware that Perkin Elmer Tri Carb 2100 LSC contained a small radioactive sealed source and a lack of full understanding of NRC's requirements for generally licensed devices. This is of concern to the NRC because it increases the chance for the devices to be lost, stolen, or improperly handled which could result in adverse impacts to the health and safety of the general public. As corrective actions, the Children's Mercy Hospital took possession of the source, properly secured the source in the Nuclear Medicine hot lab, and is in process of sending the source back to the manufacturer for disposal.

The NRC has concluded that information regarding the root cause of the violation, the corrective actions planned to correct the violation and address its recurrence, and the date when full compliance was achieved is already adequately addressed on the docket in this letter. Therefore, you are not required to respond to this letter unless the description herein 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 "Rules of Practice," a copy of this letter, its enclosure, and your response, if you choose to provide one, will be made available electronically for public inspection in the NRC's Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC's website 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 publicly available without redaction.

N. Burchell

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Please feel free to contact Mr. Zahid Sulaiman of my staff if you have any questions regarding this inspection. Mr. Sulaiman can be reached at 630-829-9752.

Sincerely,

/RA Geoffrey Warren Acting for/

Aaron T. McCraw, Chief
Materials Inspection Branch
Division of Nuclear Materials Safety

Docket No. 999-90003
License No. 24-15513-01

Enclosure:
Notice of Violation

cc w/encl: State of Missouri

N. Burchell

-3-

Please feel free to contact Mr. Zahid Sulaiman of my staff if you have any questions regarding this inspection. Mr. Sulaiman can be reached at 630-829-9752.

Sincerely,

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Aaron T. McCraw, Chief
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Docket No. 999-90003
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Enclosure:
Notice of Violation

cc w/encl: State of Missouri

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|--------|--------------|--|---------------------|--|--|--|--|
| OFFICE | RIII-DNMS | | RIII-DNMS | | | | |
| NAME | ZSulaiman:cl | | AMcCraw GWarren for | | | | |
| DATE | 1/14/2016 | | 1/15/2016 | | | | |

OFFICIAL RECORD COPY

NOTICE OF VIOLATION

Children's Mercy Hospital
Kansas City, MO

License No. 24-15513-01
Docket No. 999-90003
EA-15-275

During a U.S. Nuclear Regulatory Commission (NRC) in-office review conducted on December 1, 2015, a violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

Title 10 of the *Code of Federal Regulations* (CFR) CFR 31.5(c)(8)(i) requires, in part, that any person who acquires, receives, possesses, uses or transfers byproduct material in a device pursuant to a general license shall transfer or dispose of the device containing byproduct material only by export as provided by paragraph (c)(7) of this section, by transfer to another general licensee as authorized in paragraph (c)(9) of this section, or to a person authorized to receive the device by a specific license.

Contrary to the above, on December 1, 2015, Children's Mercy Hospital failed to transfer or dispose of byproduct material in a generally licensed device by export, by transfer to another general licensee, or by transfer to a person authorized by a specific license. Specifically, on December 1, 2015, Advantage Metal Recycling, Kansas City, MO found a 8.51 uCi barium-133 (Ba-133) source while salvaging a Perkin Elmer Tri-Carb 2100 Liquid Scintillator Counter (LSC) device was traced back to Children's Mercy Hospital. Advantage Metal Recycling is not licensed to receive any byproduct materials.

This is a Severity Level IV violation (Section 6.3).

The NRC has concluded that information regarding the reason for the violation, the corrective actions planned to correct the violation and prevent recurrence, and the date when full compliance was or will be achieved is already adequately addressed on the docket in this letter. Therefore, you are not required to respond to this letter unless the description herein 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. However, you are required to submit a written statement or explanation pursuant to 10 CFR 2.201 if the description therein does not accurately reflect your corrective actions or your position. In that case, or if you choose to respond, clearly mark your response as a "Reply to a Notice of Violation, IR 99990003/2015006(DNMS)" and send it to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001 with a copy to the Regional Administrator, Region III, within 30 days of the date of the letter transmitting this Notice.

If you choose to respond, your response will be made available electronically for public inspection in the NRC's Public Document Room or from the NRC's Agencywide Documents

Enclosure

Access and Management System (ADAMS), accessible from the NRC's website 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 publicly available without redaction.

If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001. In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days of receipt.

Dated this 15th day of January, 2016.