



**UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES**

OFFICE OF THE PRESIDENT  
4301 JONES BRIDGE ROAD  
BETHESDA, MARYLAND 20814-4799  
www.usuhs.edu



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07 February 2018

Licensing Assistance Team  
U.S. Nuclear Regulatory Commission, Region I  
2100 Renaissance Boulevard, Suite 100  
King of Prussia, PA 19406-2713

SUBJECT: Amendment Request, USNRC Materials License 19-23344-01

License No. 19-23344-01  
Docket No. 03020775

Dear Sir or Madam,

The purpose of this letter is to notify the Nuclear Regulatory Commission (NRC) of a change in the locations of the Uniformed Services University of the Health Sciences (USU) facilities where licensed material may be used or stored. As of 08 November 2017, the USU facility located at 1530 East Jefferson Street, Rockville, Maryland has been released from radiological controls and is no longer authorized for radioactive materials use under the USU Radiation Safety Program. The USU Radiation Safety Committee voted to decommission the facility on 14 December 2017. The facility release memorandum dated 08 November 2017 is enclosed for your review. The USU requests amendment of USNRC License 19-23344-01 to remove the address 1530 East Jefferson Street, Rockville, Maryland from the authorized locations of use listed in Condition 10.

If you have questions, please contact Major Kimberly Alston, RSO at (301) 295-3390.

Sincerely,

Richard W. Thomas, MD, DDS  
President

Enclosure:  
As stated

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# UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES

ENVIRONMENTAL HEALTH AND OCCUPATIONAL SAFETY  
4301 JONES BRIDGE ROAD  
BETHESDA, MARYLAND 20814-4799  
www.usuhs.edu



08 November 2017

## MEMORANDUM FOR USU Radiation Safety Committee (RSC)

FROM: UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES (USU)  
OFFICE OF ENVIRONMENTAL HEALTH & OCCUPATIONAL SAFETY (EHS)  
BETHESDA, MD 20814

SUBJECT: Decommissioning Radiological Surveys and Release of the Center for Prostate Disease Research (CPDR) Building for Unrestricted Use

REFERENCES: (a) Uniformed Services University of the Health Sciences SOP EHS-R015 "De-Posting Laboratories for Radioactive Material Use (Close-Out Surveys), 10 November 2016

(b) NUREG-1757, Volume 1, Rev. 2, Consolidated Decommissioning Guidance  
— Decommissioning Process for Materials Licensees, September 2006

### 1. General Information:

- a. Radioactive Materials Use Authorization: The Radionuclide Experimental Authorization (REA) #U93-002 under the USU Nuclear Regulatory Commission (NRC) Byproduct Materials License #19-23344-01 authorized radioactive materials use for CPDR. The Principal Investigator appointed as the REA Holder was Dr. Shiv Srivastava. The location authorized under this REA changed from the 3<sup>rd</sup> Floor at USU to the Center for Prostate Disease Research located at 1530 East Jefferson Street, Rockville, Maryland on 12 Aug 1999.
- b. Radioactive Materials Usage: On 12 August 1999, the CPDR commenced using radioactive isotopes on the Ground Floor in the following laboratories: 103A, 103C, 103D, 103E, 103F, 103G, 103H, 103I, 105, 116, and 114D. A total of 42.48 millicuries (mCi) (171 orders) of Phosphorus-32 (<sup>32</sup>P), 0.5 mCi (2 orders) of Phosphorus-33 (<sup>33</sup>P), and 43.1 mCi (7 orders) of Sulfur-35 (<sup>35</sup>S) were used at CPDR from 12 August 1999 to 6 August 2015. For additional details and an inventory of radionuclide usage at CPDR, please reference Enclosure 1.

### 2. Historical Site Assessment:

- a. Radioactivity from Radionuclide Use: All three isotopes used at CPDR decay relatively quickly, with half-lives (the duration of time it takes for half of the activity to decay

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away) of 14.27 days for  $^{32}\text{P}$ , 25.35 days for  $^{33}\text{P}$ , and 87.37 days for  $^{35}\text{S}$ . The isotope with the longest half-life, Sulfur-35, was last ordered on 7 February 2007. The activity ordered was 7 mCi. When 7 mCi of  $^{35}\text{S}$  is decayed to the first day of the deposing surveys at CPDR, which was 15 February 2017, the remaining activity, is insignificant based on the ten-half lives rule. Enclosure 2 shows that the decayed quantity of activity, as of 15 February 2017, would be  $1.78 \times 10^{-12}$  mCi. No radioactivity from the authorized radionuclides used at this facility was expected to be detectable during the deposing surveys.

- b. 16 February 2017: Dr. Srivastava submitted a deposing request to EHS through a REA Amendment Request (USU Form 380) for 114D, 105, and 103C-I. The deposing surveys beginning with the Waste Room 114D commenced at that time.
- c. 7 July 2017: Dr. Srivastava submitted another USU Form 380 to inactivate CPDR's REA. REA inactivation requires a deposing survey of all laboratories on the REA. At that time, the Radiation Safety Division's deposing survey plans were expanded to include rooms 103A and 116.
- d. REA Inactivation Status: The USU Radiation Safety Committee (RSC) voted and approved of Dr. Srivastava's request to inactivate CPDR's REA #U93-002 at the quarterly meeting held on 2 October 2017.
- e. Liquid Scintillation Counter (LSC) Internal Source: The last remaining radioactive source at CPDR was an internal reference source, Cesium-137 ( $^{137}\text{Cs}$ ), inside of an LSC.
  - i. A description of the LSC and internal radioactive source are as follows:
    1. Manufacturer: Beckman Coulter
    2. Model: LS 6500
    3. Serial Number: 7069324
    4. Source Part Number: 598860
    5. EHS Cs-137 Source Number: HJF#14408 (same as LSC Property ID tag)
  - ii. 11 October 2017 extraction: A radiation safety technician extracted the source and lead housing from the LSC equipment, and transferred it to the USU Radioactive Waste Storage Area.
  - iii.  $^{137}\text{Cs}$  Custody: Although the source had been physically located at CPDR, the REA covering it was the Radiation Safety Officer's at USU. The source remains under the RSO's REA #U85-002 until it can be transferred to a waste contractor.
- f. Disposal of Radioactive Material Certification (in lieu of NRC Form 314): As of 11 October 2017, when the LSC source was removed from CPDR, all activities authorized by REA #U93-002 had ceased, and all radioactive materials procured and/or possessed by the REA Holder were disposed of via transfer to the Uniformed Services University Radioactive Waste Storage Area, Room G023 for disposal.

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**3. Release for Unrestricted Use (Deposting) Surveys and Results:**

- a. **Decommissioning Group and Requirements:** Using the Decision Tree in the NUREG-1757 (Ref. b) the type and quantity of radioactive material used at CPDR are classified under Group 1. Although not required, most of the Licensee Actions recommended by the NUREG 1757 were successfully completed through the deposing survey procedures performed at CPDR. Please reference Enclosure 3 for applicable excerpts from NUREG 1757.
- b. **Deposting Survey Records:** all surveys related to the decommissioning of CPDR have been consolidated into a binder titled "CPDR Room Deposting Surveys". The binder will be maintained and filed in the Radiation Safety Officer's Office, A2068.
- c. **Deposting Survey Procedures:** Each deposing survey was completed in accordance with the standard operating procedure (SOP) EHS#-R015 (Ref.a). The SOP meets the survey criteria outlined in 10 CFR 30.36(j)(2).
- d. **Instrumentation Used:**
  - i. **Handheld Survey Meters:** A Geiger Müller tube detector was used for meter readings. Meter information such as Model, Serial Number, and Calibration date varied by trip and surveyor and are listed on each deposing survey coversheet.
  - ii. **Liquid Scintillation Counter (LSC):** The swipes were analyzed using a LSC at USU. Documentation on the LSC's calibration may be found in the "CPDR Room Deposting Surveys" binder and includes: a photograph of the Manufacturer's Calibration Sticker as well as a print-out of the Self-Normalization and Calibration (SNC) generated by the LSC from both the first day of deposing surveys and after the last deposing survey.
- e. **Deposting Survey Results by Room:** Due to the size of the facility and the gradual increase in rooms scheduled for deposing, the detailed survey of the building was divided into eight separate trips. The survey results from each trip are as follows:
  - i. **Trip 1, Room 114D:** this space is the size of a large closet. 14 survey meter readings were collected; all readings were at normal background levels. 50 swipes from inside the room were collected; all swipes were below 200 dpm/100cm<sup>2</sup>. The waste containers inside room 114D were collected and surveyed at USU using 7 meter readings and a total of 53 swipes. One waste can had Tritium contamination, and needed to be decontaminated twice to be cleared for re-use. The contamination was likely from CPDR's usage when they were located on USU's Main Campus, at which time they were authorized to use Tritium.
  - ii. **Trip 2, Rooms 103E-I:** these areas are in a large room with each sectioned laboratory

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area having a bench and cabinetry on either side. 182 survey meter readings were collected; all readings were at normal background levels. 1115 swipes from inside the laboratories were collected; all swipes were below 200 dpm/100cm<sup>2</sup>.

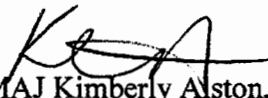
- iii. Trip 3, Room 103 Common Areas and Hallways: this survey encompasses all of the "miscellaneous" 103 areas including: one hallway from the main door to the space, another hallway that connects 103E-I and is lined with Refrigerators/Freezers, and a small alcove for a computer station and printer, which is connected to the hallway from the main door and across from Room 103A. 36 survey meter readings were collected; all readings were at normal background levels. 203 swipes were collected; all swipes were below 200 dpm/100cm<sup>2</sup>.
- iv. Trip 4, Room 105: this laboratory serves as CPDR's pre-Polymerase Chain Reaction (PCR) room. 42 survey meter readings were collected; all readings were at normal background levels. 200 swipes were collected; all swipes were below 200 dpm/100cm<sup>2</sup>.
- v. Trip 5, Room 103C&D: these two laboratories are separate from 103E-I and located along the Southern end of the building. They are connected in the middle by a set of benches. 80 survey meter readings were collected; all readings were at normal background levels. 493 swipes were collected; all swipes were below 200 dpm/100cm<sup>2</sup>.
- vi. Trip 6, Room 103A: this laboratory was dedicated to the use of radioactive materials, and had the highest concentration of radioactive warning labeled equipment, waste bins, and work areas. 50 survey meter readings were collected; all readings were at normal background levels. 364 swipes were collected; all swipes were below 200 dpm/100cm<sup>2</sup>.
- vii. Trip 7, Room 116: this space is CPDR's dark room. 45 survey meter readings were collected; all readings were at normal background levels. 200 swipes were collected; all swipes were below 200 dpm/100cm<sup>2</sup>.
- viii. Trip 8, Hallways and Drains: historically, the non-posted areas, including the hallways at CPDR, were surveyed on a quarterly basis. The survey from this trip serves as justification for discontinuing the monitoring of those unrestricted areas. 29 survey meter readings were collected; all readings were at normal background levels. 200 paper swipes were collected. One swipe had 158 dpm/100cm<sup>2</sup> and another swipe had 452 dpm/100cm<sup>2</sup> in the Tritium channel. The swipes were re-ran, on two separate occasions, and the elevated readings were not repeated. The initial readings were a false positive. All other swipes were below 200 dpm/100cm<sup>2</sup>. In addition, 8 long-stem cotton swabs (Q-tips) were used to swipe the interior of the sink drain pipes. One swab was collected from each sink drain pipe and all 8 swipe results were less than 200 dpm/100cm<sup>2</sup>.

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- f. Overall Deposting Survey Totals: 485 survey meter readings were collected; all readings were indistinguishable from normal background levels. 2878 swipes were collected; 99.93% of the swipes were below the 200 dpm/100cm<sup>2</sup> limit. 2 swipes were above the 200 dpm/100cm<sup>2</sup> limit. The remediation of those swipes included decontaminating a waste bin and re-analyzing a swipe. Eight drain pipes were swiped and found to be below 200 dpm/100cm<sup>2</sup>.

**4. Final Summary and Point of Contact:**

- a. Summary: Based on the final status of all radiological surveys conducted, the building meets the guidelines for release to unrestricted (general) public use.
- b. Follow-Up Actions: The CPDR Director shall be notified of the decommissioning summary through separate correspondence following the review and approval of this Memorandum at the next RSC meeting on 14 December 2017.
- c. Point of Contact: Any questions or concerns may be directed to the undersigned or the Radiation Safety Division staff at 301-295-3390 or 301-295-9443.

  
MAJ Kimberly Alston, MS, MPH  
Deputy Director, Environmental Health & Occupational  
Safety (EHS)  
Radiation Safety Officer  
Uniformed Services University of the Health Sciences



**ACKNOWLEDGEMENT - RECEIPT OF CORRESPONDENCE**

<b>Name and Address of Applicant and/or Licensee</b>  MAJOR Kimberly Alston Radiation Safety Officer Uniformed Services University of the Health Sciences 4301 Jones Bridge Road Bethesda, Maryland 20814-4712	<b>Date</b> March 28, 2018
	<b>License Number(s)</b> 19-23344-01
	<b>Mail Control Number(s)</b> 602732
	<b>Licensing and/or Technical Reviewer or Branch</b> Commercial, Industrial, R&D, and Academic Branch

This is to acknowledge receipt of your:  Letter and/or  Application Dated: 07 February 2018

The initial processing, which included an administrative review, has been performed.  
 Amendment  Termination  New License  Renewal

There were no administrative omissions identified during our initial review.

This is to acknowledge receipt of your application for renewal of the material(s) license identified above. Your application is deemed timely filed, and accordingly, the license will not expire until final action has been taken by this office.

Your application for a new NRC license did not include your taxpayer identification number. Please complete and submit NRC Form 531, Request for Taxpayer Identification Number, located at the following link: <http://www.nrc.gov/reading-rm/doc-collections/forms/nrc531.pdf>  
 Follow the instructions on the form for submission.

The following administrative omissions have been identified:

Your application has been assigned the above listed MAIL CONTROL NUMBER. When calling to inquire about this action, please refer to this control number. Your application has been forwarded to a technical reviewer. Please note that the technical review, which is normally completed within 180 days for a renewal application (90 days for all other requests), may identify additional omissions or require additional information. If you have any questions concerning the processing of your application, our contact information is listed below:

**Region I**  
**U. S. Nuclear Regulatory Commission**  
**Division of Nuclear Materials Safety**  
**2100 Renaissance Boulevard, Suite 100**  
**King of Prussia, PA 19406-2713**  
**(610) 337-5260, (610) 337-5313,**  
**(610) 337-5398, (610) 337-5239**