

Georgetown University
Office of Environmental Health and Safety

*LM-12 Preclinical Science
3900 Reservoir Road N.W.
Washington D.C. 20007*

*Radiation Safety
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July 20, 2022

Elizabeth Ullrich
Senior Health Physicist
Commercial, Industrial, R & D, and Academic Branch
Division of Radiological Safety and Security
Nuclear Regulatory Commission, Region 1
475 Allendale Road
King of Prussia, Pennsylvania 19406-1415

License No. 08-03114-05
Docket No. 03013627
Mail Control No. 630716

Dear Ms. Ullrich:

This letter is in reference to the NRC letter dated June 28, 2022 requesting clarification of certain items in our License renewal /amendment application. Each of the six (6) NRC inquiries are addressed individually below.

1) Evaluation of the need to revise Georgetown University's (GU) current DFP (NRC approval date - April 28, 2022).

The requested increase in our possession limit for byproduct materials 84 - 98 was made to accommodate future research activity for one (1) Chemistry Professor. She will be performing actinide research using the isotope Np-237. Although we request 400 microcuries as our license possession limit, the researcher's (laboratory) possession limit for the isotope will be at 170 microcuries. After a detailed evaluation of our 2021 DFP, GU has determined that the current cost estimate provides sufficient funds to support decommissioning, including the increased possession limit. Our determination is based on the following:

- The GU Radiation Safety Committee (RSC) approval for this research mandates the use of glove boxes, which have filtered exhaust (prefilters and HEPAs). The use of the Np-237 will be totally contained, and will not contact facility components (i.e., bench tops or fume hoods). The Np oxide is not volatile, so there are no airborne radioactivity concerns.
- The chemical process used for this research involves creating a crystal matrix which contains the isotope. This evolution is performed in a glove box. The matrix is solid, not friable like a powder would be. This lessens the potential for contamination events.
- The use of the Np-237 will be performed in areas which are currently posted for RAM use, and which are included in the current GU DFP, Section 3 "Number and Dimensions of Facility Components." No new GU facilities will be utilized.
- The radioactive waste costs for this research will be minimal. There will be no liquid or mixed wastes generated. The research will only utilize small amounts of material (< 5 mg per research evolution and < 250 mg total). This small amount of solid waste will be disposed via compaction / burial and will not impact the values documented in Section 12 of our current DFP.

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- The GU RSC approval for this research mandates increased Radiation Safety (RS) inspections of the lab from quarterly to monthly. These inspections will include detailed radiation and contamination surveys. In addition, the researcher must perform documented post-job surveys after each use. As stated in our current DFP, the action level requiring immediate decontamination of GU facilities remains at 100 dpm / 100cm².

2) Item 6, Materials used for off campus training of First Responders.

Georgetown University would like to request the use of **Items A through L for off campus training of First Responders at temporary job sites**. We also confirm the following use parameters for off campus training of First Responders:

- Only sealed sources will be used at temporary job sites (for all items, A through L).
- The GU RSC will approve each use of licensed material at temporary job sites through its normal procedures. RSC approval for each use will be obtained prior to the training session, and will be documented in the RSC Meeting Minutes.
- The field use of the sealed sources will include positive access controls, and the GU RS staff will implement security and control measures for the licensed material at all times.
- In addition, Georgetown University will comply with all additional requirements documented in Appendix B of our license renewal application.

3) Use of Licensed Materials in Animals, Unrestricted Release.

Georgetown University RS policy prohibits the free release of any animals which have been administered licensed material. The application for the in vivo use of radioactive materials in animals specifies that the animals must be sacrificed after the research is completed. The animals must be properly euthanized and delivered to the RS staff for proper disposal as radioactive waste.

4) Facility Release Surveys for Unrestricted Use - Section 10.7.2

Georgetown University will meet the criteria described in Table L-3 of NUREG-1556, Volume 11, Revision 1, February 2017 for all facilities (buildings and soil) released for unrestricted use. The criteria listed in Table L-3 meets the requirements for release for unrestricted use specified in Subpart E of 10 CFR 20.

5) Leak Tests of Sealed Sources - Section 10.7.3

Georgetown University confirms it will implement the Model Leak Test Program as published in Appendix M of NUREG-1556, Volume 11, Revision 1, February 2017.

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6) Calibration of Radiation Monitoring Equipment - Appendix C.

Georgetown University confirms it will maintain radiation detection instrument calibration records in accordance with Appendix H of NUREG-1556, Volume 11, Revision 1, February 2017.

If you should have additional questions, or require further clarification, please call me at (202) 687-4712 or reach me via email <djm8@georgetown.edu>. Thank you very much for your assistance with our NRC License amendment / renewal.

Sincerely,



Donald J. Mullins
Radiation Safety Officer
Georgetown University