U.S. NUCLEAR REGULATORY COMMISSION

Amendment No. 26

MATERIALS LICENSE

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 36, 37, 39, 40, 70 and 71, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee	In accordance with the letter dated February 19, 2020,	4. Expiration Date: December 31, 2021
1. University of Puerto Rico Rio Piedras Campus		5. Docket No.: 030-01183 Reference No.:
2. Chancellor's Office P.O. Box 23305 San Juan, PR 00931-3305	3. License number: 52-01986-04 is amended in its entirety to read as follows:	

6. Byproduct, source, and/or special nuclear material	7. Chemical and/or physical form	8. Maximum amount that licensee may possess at any one time under this license	9. Authorized use
A. Hydrogen-3	A. Any	A. 30 millicuries total	A. For research and development as defined in 10 CFR 30.4; and teaching and training of students.
B. Carbon-14	B. Any	B. 10 millicuries total	B. For research and development as defined in 10 CFR 30.4; and teaching and training of students.
C. Phosphorus-32	C. Any	C. 30 millicuries total	C. For research and development as defined in 10 CFR 30.4; and teaching and training of students.
D. Phosphorus-33	D. Any	D. 20 millicuries total	D. For research and development as defined in 10 CFR 30.4; and teaching and training of students.
E. Sulfur-35	E. Any	E. 25 millicuries total	E. For research and development as defined in 10 CFR 30.4; and teaching and training of students.

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6. Byproduct, source, and/or special nuclear material	7. Chemical and/or physical form	8. Maximum amount that licensee may possess at any one time under this license	9. Authorized use
F. Calcium-45	F. Any	F. 8.5 millicuries total	F. For research and development as defined in 10 CFR 30.4; and teaching and training of students.
G. Iodine-125	G. Any	G. 5 millicuries total	G. For research and development as defined in 10 CFR 30.4; and teaching and training of students.
H. Krypton-85	H. Sealed Sources (Isotope Products Laboratories, Model NER-8275; NER-8285; NER-8295; NER-8295, -8285, or -8275)	H. 2 millicuries per source and 2 millicuries total	H. For research and development as defined in 10 CFR 30.4 and teaching and training of students; in a TSI, Incorporated Model No. 3077 Static Charge Neutralizer for use with a TSI, incorporated Model 3080 Electrical Classifier.
I. Krypton-85	I. Sealed Sources (Isotope Products Laboratories, Model NER-8275)	I. 10 millicuries per source and 10 millicuries total	I. For research and development as defined in 10 CFR 30.4 and teaching and training of students; in a custom Aerosol Neutralizer from the Leibniz-Institute for Tropospheric Research for use with a scanning mobility particle sizer.

CONDITIONS

10. Licensed material may be used or stored only at the licensee's facilities located at University of Puerto Rico, College of Natural Resources Departments of Biology & Chemistry, Rio Piedras, Puerto Rico, 00931-3305 . Material authorized in 6.H and 6.I. also may be used at temporary job sites of the licensee anywhere in the United States where the U.S. Nuclear Regulatory Commission maintains jurisdiction for regulating the use of licensed material, including areas of exclusive Federal jurisdiction within Agreement States.

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If the jurisdiction status of a Federal facility within an Agreement State is unknown, the licensee should contact the Federal agency controlling the job site in question to determine whether the proposed job site is an area of exclusive Federal jurisdiction. Authorization for use of radioactive materials at job sites in Agreement States not under exclusive Federal jurisdiction shall be obtained from the appropriate state regulatory agency.

11. Licensed material shall only be used by, or under the supervision of,

Authorized Users	Material and Use
Carlos Gonzalez, Ph. D.	C14,CA45,H3,I125,P32,P33,S35
Jose Lasalde, Ph.D.	C14,CA45,H3,I125,P32,P33,S35
Olga Mayol-Bracero, Ph.D	KR85; Custom aerosol neutralizer
Lymari Orellana , M. S.	C14,CA45,H3,I125,KR85,KR85,P32,P33,S35
Orestes Quesada, Ph. D.	I125,P32,P33
Jorge F. Ramos	C14,CA45,H3,I125,KR85,KR85,P32,P33,S35

12. The Radiation Safety Officer (RSO) for this license is Lymari Orellana Ocasio, M. S.

13. The licensee shall not use the licensed material in or on humans.

14. The licensee shall not use licensed material in field applications where activity is released except as provided otherwise by specific condition of this license.

15. Experimental animals, or the products from experimental animals, that have been administered licensed material shall not be used for human or animal consumption.

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16. A. Sealed sources and detector cells shall be tested for leakage and/or contamination at intervals not to exceed the intervals specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or by an Agreement State. In the absence of a registration certificate, sealed sources shall be tested for leakage and/or contamination at intervals not to exceed 6 months, or at such other intervals as specified.

B. In the absence of a certificate from a transferor indicating that a leak test has been made within the intervals specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or by an Agreement State, prior to the transfer, a sealed source received from another person shall not be put into use until tested and the test results received.

C. Sealed sources need not be tested if they contain only hydrogen-3; or they contain only a radioactive gas; or the half-life of the isotope is 30 days or less; or they contain not more than 100 microcuries of beta- and/or gamma-emitting material or not more than 10 microcuries of alpha-emitting material.

D. Sealed sources need not be tested if they are in storage and are not being used. However, when they are removed from storage for use or transferred to another person, and have not been tested within the required leak test interval, they shall be tested before use or transfer. No sealed source shall be stored for a period of more than 10 years without being tested for leakage and/or contamination.

E. The leak test shall be capable of detecting the presence of 185 becquerels (0.005 microcuries) of radioactive material on the test sample. If the test reveals the presence of 185 becquerels (0.005 microcuries) or more of removable contamination, a report shall be filed with the U.S. Nuclear Regulatory Commission in accordance with 10 CFR 30.50(c)(2), and the source shall be removed immediately from service and decontaminated, repaired, or disposed of in accordance with Commission regulations.

F. Analysis of leak test samples and/or contamination shall be performed by persons specifically licensed by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services. The licensee is authorized to collect leak test samples but not perform the analysis.

G. Records of leak test results shall be kept in units of becquerels (microcuries) and shall be maintained for 3 years.

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17. Sealed sources or detector cells containing licensed material shall not be opened or the sources removed from the detector cell by the licensee.

18. The licensee shall conduct a physical inventory every 6 months, or at other intervals approved by the U.S. Nuclear Regulatory Commission, to account for all sealed sources and/or devices received and possessed under the license. Records of inventories shall be maintained for 3 years from the date of each inventory, and shall include the radionuclides, quantities, manufacturer's name and model numbers, and the date of the inventory.

19. Maintenance, repair, cleaning, replacement, and disposal of foils contained in detector cells shall be performed only by the device manufacturer or other persons specifically authorized by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services.

20. The licensee is authorized to hold radioactive material with a physical half-life of less than or equal to 120 days for decay-in-storage before disposal in ordinary trash provided:

    A. Before disposal as ordinary trash, the waste shall be surveyed at the container surface with the appropriate survey instrument set on its most sensitive scale and with no interposed shielding to determine that its radioactivity cannot be distinguished from background. All radiation labels shall be removed or obliterated, except for radiation labels on materials that are within containers and that will be managed as biomedical waste after they have been released from the licensee.

    B. A record of each such disposal permitted under this license condition shall be retained for 3 years. The record must include the date of disposal, the date on which the byproduct material was placed in storage, the radionuclides disposed, the survey instrument used, the background dose rate, the dose rate measured at the surface of each waste container, and the name of the individual who performed the disposal.

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21. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below. This license condition applies only to those procedures that are required to be submitted in accordance with the regulations. The U.S. Nuclear Regulatory Commission's regulations shall govern unless the statements, representations, and procedures in the licensee's application and correspondence are more restrictive than the regulations.

A. Letter dated October 25, 2004 (ML043030433)
B. Letter dated April 3, 2006 (ML061020592)
C. Letter dated June 29, 2010 (ML101940073)
D. Letter dated July 7, 2011 (ML112020441)
E. Facsimile dated July 21, 2011 (ML112360529)
F. Facsimile dated August 4, 2011 (ML112170382)
G. Facsimile dated August 11, 2011 (ML112230851)
H. Facsimile dated August 24, 2011 (ML112360514)
I. Application dated June 3, 2011 (ML111570424)
J. Letter dated November 10, 2011 (ML113190434)
K. Letter dated September 3, 2019 (ML19330G013)

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date: May 1, 2020

By: Elizabeth Ullrich Digitally signed by Elizabeth Ullrich Date: 2020.05.01 13:29:13 -04'00'

Elizabeth Ullrich
Region 1