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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, 39, 40, and 70, 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	
1. Smithsonian Institution Office of Safety, Health, and Environmental Management	In accordance with the letter dated January 20, 2012, 3. License No. 08-05938-13 is amended in its entirety to read as follows:
2. Suite 7106 MRC 514 600 Maryland Avenue, SW P.O. Box 37012 Washington, D.C. 20013-7012	4. Expiration Date: January 31, 2015 5. Docket No. 030-30945

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
A. Hydrogen 3	A. Any	A. 90 millicuries
B. Carbon 14	B. Any	B. 85 millicuries
C. Phosphorus 32	C. Any	C. 120 millicuries
D. Phosphorus 33	D. Any	D. 120 millicuries
E. Sulfur 35	E. Any	E. 120 millicuries
F. Iodine 125	F. Any	F. 125 millicuries
G. Nickel 63	G. Foils or plated sources (Agilent Technologies/HP Model 19233 and 19235; Shimadzu Scientific Instruments Model ECD-2, 3, 4, 5, 6, 7, 8, 9, 9M, 14, 14C, 17, and 2010)	G. 15 millicuries per source and 55 millicuries total
H. Cesium 137	H. Graphite blocks	H. 0.04 microcuries per source and 15 microcuries total
I. Promethium 147	I. Painted dials	I. 800 millicuries
J. Radium 226	J. Any	J. 50 microcuries
K. Radium 226	K. Sealed sources	K. 700 microcuries
L. Depleted Uranium	L. Metal	L. 11 kilograms
M. Cesium 137	M. Sealed sources (AEA Technology/QSA, Inc. Model CDCW556; Isotope Product Laboratories Model HEG-137)	M. 8 millicuries per source and 8 millicuries total

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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
N. Americium 241	N. Sealed sources (AEA Technology-QSA, Inc. Model AMNV.997 or Isotope Product Laboratories Model AM1.NO2)	N. 40 millicuries per source and 40 millicuries total
O. Iron 55	O. Sealed sources (see Condition 12)	O. 700 millicuries total
P. Cobalt 60	P. Sealed sources(see Condition 12)	P. 2 millicuries total
Q. Cadmium 109	Q. Sealed sources (see Condition 12)	Q. 12 millicuries total
R. Barium 133	R. Sealed sources(see Condition 12)	R. 2 millicuries total
S. Americium 241	S. Sealed sources(see Condition 12)	S. 17 millicuries total
T. Americium 241	T. Sealed sources (Isotope Product Laboratory Model PHI-241 or XFB-3; or Amersham Corp, Model AMC.P4 or AMC.24)	T. 14 millicuries per source and 30 millicuries total
U. Curium 244	U. Sealed sources(See Condition 12)	U. 22 millicuries total
V. Sodium 22	V. Sealed sources (see Condition 12)	V. 2 millicuries total
W. Cobalt 57	W. Sealed sources (see Condition 12)	W. 2 millicuries total

9. Authorized use:

A. - F. Research and development as defined in 10 CFR 30.4.
G. To be used for sample analysis in compatible gas chromatography devices that have been registered either with the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or with an Agreement State and have been distributed in accordance with a Commission or Agreement State specific license authorizing distribution to persons specifically authorized by a Commission or Agreement State license to receive, possess, and use the devices.
H. Component part of replica of CP-1 Fermi Pile for storage and display only.
I. Component part of replica of Lunar Rover for storage and display only.
J. and K. Storage and display only.

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L. Component part of thermoelectric generator for storage and display only.
M. and N. In Troxler Electronics Laboratories, Inc. Model No. 3450 portable gauging devices for measuring physical properties of materials.
O. - W. Calibration of the licensee's instruments.

CONDITIONS

10. A. Licensed material identified in Items 6.A. through 6.L. above may be used or stored at the licensee's facilities located at the Smithsonian Environmental Research Center, 647 Contees Wharf Road, Edgewater, Maryland, at outdoor experimental sites on Smithsonian property; the National Air and Space Museum, 601 Independence Avenue, Washington, D.C.; the National Museum of American History, 14th and Constitution Avenue, NW, Washington, D.C.; Museum Support Center, 4210 Silver Hill Road, Suitland, Maryland; the Paul E. Garber Facility, Buildings 10,15, and 24, 3904 Old Silver Hill Road, Suitland, Maryland; the Conservation and Research Center, Front Royal, Virginia; the Center for Biological Research, National Zoological Park, Washington, D.C.; and the Steven F. Udvar-Hazy Center, 14390 Air & Space Museum Parkway, Chantilly, Virginia.

B. Licensed material identified in Items 6.A. through 6.F. may be used at temporary job sites on board ships in U. S. coastal waters, at sea, and in U. S. inland waters.

C. Licensed material identified in Items 6.M. and 6.N. above may be used or stored at the licensee's facilities located at the National Air and Space Museum, 601 Independence Avenue, SW, Washington, D.C.; the Paul E. Garber Facility, Building 24, 3904 Old Silver Hill Road, Suitland, Maryland; and at temporary job sites of the licensee anywhere in the United States.

D. Licensed materials identified in Items 6.O. through 6.W. above may also be used or stored at the licensee's facilities located at: the Cambridge Discovery Park, 100 Acorn Park Drive, Cambridge, Massachusetts; Hughes Danbury Optical System/Lexington, 10 Maguire Road, Lexington, Massachusetts; National Technical Systems/Boxborough, 1146 Massachusetts Avenue, Boxborough, Massachusetts; Parker Chomerics, 77A Dragon Court, Woburn, Massachusetts; Hughes Danbury Optical Systems/Danbury, 100 Wooster Heights Road, Danbury, Connecticut; and at temporary jobsites of the licensee anywhere in the United States.

11. The Radiation Safety Officer (RSO) for this license is David M. Peters.

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	Isotope	Source Model Number	Maximum Activity Per Source
12.	Fe-55	IPL Model XFB series	300 millicuries
		IPL Model NER-462	120 millicuries
		AEA Technology Model IEC.A1	270 milicuries
	Co-60	Eckert & Ziegler GF-series	2 millicuries
	Cd-109	Eckert & Ziegler GF-series	2 millicuries
		IPL Model XFB-3	5 millicuries
	Ba-133	Eckert & Ziegler GF-series	2 millicuries
	Am-241	Eckert & Ziegler GF-series	2 millicurie
		Amersham Model AMC.24	15 millicuries
	Cu-244	Eckert & Ziegler AF-244-C	2 millicuries
	Na-22	Eckert & Ziegler GF-series	2 millicuries
	Co-57	Eckert & Ziegler GF-series	2 millicuries

13. A. Licensed material shall be used by, or under the supervision of David M. Peters.

B. Licensed material listed in Items 6.A. through 6.G. may be used by, or under the supervision of Janine Brown, Steven L. Monfort, Patrick J. Neale, or David E. Wildt. Licensed material listed in Items 6.A., B., D., E., and G. may be used by, or under the supervision of, Wayne Coats, Charles L. Gallegos, Cynthia Gilmour, Liza Hamill, J. Patrick Megonigal, or Olav T. Oftedal.

C. Licensed material listed in Items 6.H. and 6.L may be used by, or under the supervision of, Roger Sherman.

D. Licensed material listed in Items 6.M. and 6.N. shall be used by, or under the supervision and in the physical presence of, Robert Craddock or individuals who have received the training described in the application dated September 5, 2002.

E. Licensed material listed in Items 6.O. through 6.W. may be used by, or under the supervision of, Almus Kenter.

14. The licensee shall not use licensed material in or on human beings.

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

16. A. Sealed sources shall be tested for leakage and/or contamination at intervals not to exceed six months or at the intervals specified in the certificate of registration issued by the U. S. Nuclear Regulatory Commission under 10 CFR 32.210 or under equivalent regulations of an Agreement State.

B. Notwithstanding Paragraph A of this Condition, sealed sources designed to primarily emit alpha particles shall be tested for leakage and/or contamination at intervals not to exceed three months.

C. 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 under equivalent regulations of 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.

D. 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.

E. 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.

F. The leak test shall be capable of detecting the presence of 0.005 microcurie (185 becquerels) of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie (185 becquerels) 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.

G. Tests for leakage and/or contamination, including leak test sample collection and analysis, shall be performed by the licensee or by other persons specifically licensed by the U. S. Nuclear Regulatory Commission or an Agreement State to perform such services.

H. Records of leak test results shall be kept in units of microcuries and shall be maintained for five years.

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

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18. The licensee shall conduct a physical inventory every six months, or at other intervals approved by the U. S. Nuclear Regulatory Commission, to account for all sources and/or devices received and possessed under the license. Records of inventories shall be maintained for five 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. Each portable nuclear gauge shall have a lock or outer locked container designed to prevent unauthorized or accidental removal of the sealed source from its shielded position. The gauge or its container must be locked when in transport or storage, or when not under the direct surveillance of an authorized user.

21. Any cleaning, maintenance, or repair of the gauges that requires detaching the source or source rod from the gauge shall be performed only by the manufacturer or by other persons specifically licensed by the U. S. Nuclear Regulatory Commission or an Agreement State to perform such services.

22. For portable gauge use:

    A. If the licensee uses unshielded sealed sources extended more than three feet below the surface, the licensee shall use surface casing that extends from the lowest depth to 12 inches above the surface and other appropriate procedures to reduce the probability of the source or probe becoming lodged below the surface. If it is not feasible to extend the casing 12 inches above the surface, the licensee shall implement procedures to ensure that the cased hole is free of obstruction before making measurements.

    B. If a sealed source or a probe containing sealed sources becomes lodged below the surface and it becomes apparent that efforts to recover the sealed source or probe may not be successful, the licensee shall notify the U. S. Nuclear Regulatory Commission and submit the report required by 10 CFR 30.50(b)(2) and (c). The licensee shall not abandon the sealed source or probe without obtaining the Commission's prior written consent.

23. The licensee is authorized to hold byproduct material with a physical half-life of less than or equal to 120 days for decay-in-storage before disposal without regard to its radioactivity if the licensee:

    A. Monitors byproduct material at the surface before disposal and determines that its radioactivity cannot be distinguished from the background radiation level with an appropriate radiation detection survey meter set on its most sensitive scale and with no interposed shielding; and

    B. Removes or obliterates all radiation labels, 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; and

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C. Maintains records of the disposal of licensed materials for three years. The record must include the date of disposal, the survey instrument used, the background radiation level, the radiation level measured at the surface of each waste container, and the name of the individual who performed the disposal.

24. The licensee is authorized to transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."

25. 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. 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. Application dated September 5, 2002 [ML022530132]
B. Application dated August 24, 2004 [ML042400539]
C. Letter dated October 14, 2004 [ML042950131]
D. Letter dated April 11, 2005 [ML051020143]
E. Letter dated April 12, 2005 [ML051300458]
F. Letter dated November 15, 2005 [ML053250183]
G. Letter dated March 29, 2006 [ML060880291]
H. Facsimile dated August 26, 2008 [ML082401115]
I. Letter dated March 19, 2010 [ML100810288]

For the U. S. Nuclear Regulatory Commission

Date May 21, 2012

By ***Original signed by Thomas K. Thompson***

Thomas K. Thompson
Commercial and R&D Branch
Division of Nuclear Materials Safety
Region I
King of Prussia, Pennsylvania 19406