NRC FORM 374

U.S. NUCLEAR REGULATORY COMMISSION

Amendment No. 46

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. SC 03620 573561

Licensee	In accordance with letter dated **May 11, 2010,**
1. National Aeronautics & Space Administration John H. Glenn Research Center at Lewis Field 2. 21000 Brookpark Road Cleveland, OH 44135	3. License number 34-00507-16 is amended in its entirety to read as follows: 4. Expiration date October 31, 2014 5. Docket No. 030-05626 Reference No.

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. Cesium-137	A. Sealed sources (NBS or Isotope Products, Inc.)	A. Two sources not to exceed 15 microcuries each for a total of 30 microcuries
B. Any byproduct material with atomic number 3 - 83 inclusive	B. Activated materials and components	B. Not to exceed 200 millicuries per isotope
C. Strontium-90	C. Sealed source (Isotope Products, Inc.)	C. One source not to exceed 1 microcurie
D. Americium-241	D. Plated Foil (Isotope Products Laboratories Model AFR Series)	D. One source not to exceed 100 microcuries
E. Polonium-210	E. Sealed solid metal foil (NRD, Inc. Model P-001)	E. Six sources not to exceed 800 microcuries each for a total of 4.8 millicuries
F. Americium-241	F. Foil sources (Manufactured by AEA Technologies, Inc. and Nycomed Amersham Plc Model AMM.1001H)	F. Twenty sources not to exceed 1 microcurie each for a total of 20 microcuries
G. Americium-241	G. Foil sources (AEA Technologies, Inc. Model AMM)	G. Five sources not to exceed 1 millicurie each for a total of 5 millicuries
H. Curium-244	H. Sealed source (A/S Model CLCL or IP Model XFB series)	H. One source not to exceed 30 millicuries

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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
I. Americium-241	I. Sealed source (A/S Model AMM, AMC.D2 or AMC.D3, IP Model GFS or XFB series or DuPont Model NET- 478C)	I. One source not to exceed 5 millicuries
J. Americium-241	J. Sealed source (A/S Model AMM, AMC.D2 or AMC.D3, IP Model GFS or XFB series or DuPont Model NET- 478C)	J. One source not to exceed 30 microcuries
K. Promethium-145	K. Sealed source (NEN X-2 X-Ray Reference Source	K. One source not to exceed 1 microcurie

9. Authorized Use:

A. and C through J. For research and development as described in 10 CFR 30.4,

B. For research and development as described in 10 CFR 30.4. Possession incident to the radiological characterization surveys of a shut-down cyclotron. Includes collection and analysis of samples and interference removal of activated equipment and infrastructure associated with the licensee's cyclotron facility.

K. Possession and storage only with intent to dispose.

CONDITIONS

10. Licensed material may be used and stored at John H. Glenn Research Center at Lewis Field, 21000 Brookpark Road, Cleveland, Ohio. **Licensed materials may be stored, used, tested and analyzed at Plum Brook Station, 6100 Columbus Avenue, Sandusky, Ohio.**

11. **Licensed material shall be used by, or under the supervision of Christopher Blasio.**

12. The Radiation Safety Officer for this license is Christopher Blasio.

13. In addition to the possession limits in Item 8, the licensee shall further restrict the possession of licensed material to quantities below the minimum limit specified in 10 CFR 30.35(d) for establishing decommissioning financial assurance.

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14. A. Sealed sources, detector cells, and foil sources 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 under equivalent regulations of an Agreement State.

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 U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or under equivalent regulations of an Agreement State, prior to transfer, a sealed source, detector cell or foil source received from another person shall not be put into use until tested and the test results received.

C. Sealed sources need not be leak 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 leak 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 or detector cell 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 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.

F. Tests for leakage and/or contamination shall be performed by the licensee or by other persons specifically licensed by the Commission or an Agreement State to perform such services.

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

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

16. The licensee shall conduct a physical inventory every 6 months to account for all sources and/or devices received and possessed under the license . Records of inventories shall be maintained for 5 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.

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

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18. 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 Commission or an Agreement State to perform such services.

19. 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 June 29, 2004; and

B. Letters dated August 13, 1999, February 7, 2001, January 8, 2004, February 12, 2004, October 29, 2004, November 10, 2004, February 4, 2005, April 15, 2005 and September 9, 2004, December 15, 2004, May 23, 2005, May 25, 2005, June 8, 2006, April 20, 2007, June 7, 2007, January 23, 2008, May 28, 2008, October 28, 2008, March 6, 2009, **September 17, 2010, September 30,2010, October 20, 2010 and Procedure CP-7, Revision 1, Radiation Work Permits).**

C. Facsimiles dated March 21, 2005 and March 25, 2008.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date NOV 0 4 2010

By _____
George M. McCann
Materials Control, ISFSI, and Decommissioning
Branch, Region III