NRC FORM 374

U.S. NUCLEAR REGULATORY COMMISSION

Amendment No. 34

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. SC03610 317215

Licensee	
1. Analytical Bio-Chemistry Laboratories, Inc 2. 7200 E. ABC Lane Columbia, MO 65202	In accordance with letter dated June 9, 2008, 3. License number 24-13365-01 is amended in its entirety to read as follows: 4. Expiration date July 31, 2017 5. Docket No. 030-05154 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. Any byproduct material with a physical half life equal to or less than 120 days with atomic numbers 1 through 83 inclusive	A. Any (excluding sealed sources and volatile forms of iodine-131 and iodine-129)	A. Not to exceed 5 Curies per nuclide and 100 Curies total except as listed below: phosphorus-33 10 curies sulfur-35 10 curies iodine-125 10 curies
B. Carbon-14	B. Any	B. 20 curies
C. Nickel-63	C. Foil sources (Varian No. 03-908377-00, Varian Aerograph No. 02-001972-00)	C. No single foil to exceed 8 millicuries, 80 millicuries total
D. Nickel-63	D. Foil Sources (Hewlett-Packard Model No. 19235)	D. No single foil to exceed 15 millicuries, 200 millicuries total
E. Carbon-14	E. Solid and/or liquid waste	E. 10 curies
F. Cesium-137	F. Sealed sources (registered pursuant to Section 32.210 of 10 CFR part 32 or an Agreement State)	F. No single source to exceed 30 microcuries, 1 millicurie total
G. Hydrogen-3	G. Any	G. 1.0 curie
H. Europium-154	H. Liquid or solid	H. 2 microcuries
I. Cesium-137	I. Liquid or solid	I. 300 microcuries
J. Barium-133	J. Liquid or solid	J. 750 microcuries

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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
K. Manganese-54	K. Any	K. 200 millicuries
L. Lutetium-177	L. Any	L. 500 millicuries
M. Technetium-99	M. Any	M. 30 millicuries
N. Molybdenum-99	N. Any	N. 30 curies
O. Technetium-99m	O. Any	O. 30 curies
P. Cobalt-60	P. Any	P. 1 microcurie
Q. Gadolinium-153	Q. Any	Q. 1 microcurie
R. Terbium-160	R. Any	R. 60 microcuries
S. Thulium-170	S. Any	S. 60 microcuries
T. Holmium-166m	T. Any	T. 150 microcuries

9. Authorized Use:

A., B. and G. Research and development as defined in 10 CFR 30.4 involving bio-tracer studies in animals and plants and in field studies as described in application dated July 16, 2007

C. and D. For use in gas chromatographs for sample analysis and for cleaning.

E. For possession incident to interim storage of waste in accordance with statements, representations and procedures contained in application dated July 16, 2007. Also, for possession only, as a contaminant in soil and water in Analytical Bio-Chemistry Laboratories' former site Sanitary Lagoon and its associated Leach Field.

F. To be used as calibration sources as described in application dated July 16, 2007.

H. through J. To be used as calibration sources as described in application dated July 16, 2007.

K., L., and M. For possession, use and processing incident to the synthesis of radiochemicals

N. and O. Research and development as defined in 10 CFR 30.4.

P. through T. Research and development as defined in 10 CFR 30.4 including studies in animals described in application dated July 16, 2007.

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CONDITIONS

10. Licensed material shall be used only at the licensee's facilities located at 7200 East ABC Lane, Columbia, Missouri, and 4780 Discovery Drive, Columbia, Missouri.

11. A. Licensed material shall be used by, or under the supervision of, individuals designated in writing by the Radiation Safety Committee, G. Scott Ward, Chairperson

    B. The Radiation Safety Officer for the activities authorized by this license is Sheila C. Hecht.

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

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

14. Except as otherwise specified in this license, the licensee shall have available and follow the instructions contained in the manufacturer's instruction manual for chromatography devices.

15. The licensee shall conduct a physical inventory every 6 months, or at intervals approved by the U.S. Nuclear Regulatory Commission, to account for all sources and/or devices received and possessed under the license

16. A. Sealed 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 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.

    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 no 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 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

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Commission regulations.

F. Tests for leakage and/or contamination, limited to leak test sample collection, 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.

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

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."

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

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

A. Before disposal as ordinary trash, byproduct material shall be surveyed at the container surface with the appropriate survey meter 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.

B. A record of each disposal permitted under this License Condition shall be retained for three 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

20. In accordance with letter dated October 5, 2007, the licensee will submit a decommissioning plan for Analytical Bio-Chemistry Laboratories' former Sanitary Lagoon and associated Leach Field to the NRC by November 30, 2007. Following approval of the decommissioning plan, the licensee will complete decommissioning within 24 months following NRC approval of the plan. Other than site characterization activities, the licensee will not perform any surface or sub-surface remediation activities in the Sanitary Lagoon, Leach Fields or areas immediately adjoining these areas.

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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. The 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 July 16, 2007;

B. Letters dated June 5, 2007, August 20, 2007, (with final status survey data for Buildings C and G), October 5, 2007, April 29, 2008, **June 9, 2008, August 15, 2008 and October 10, 2008; and**

C. Facsimile date September 4, 2008.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date DEC 01 2008

By

Kevin G. Null
Materials Licensing Branch
Region III