UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
612 EAST LAMAR BLVD, SUITE 400
ARLINGTON, TEXAS 76011-4125

September 26, 2008

University of Alaska Fairbanks
Environmental Health, Safety and Risk Management
ATTN: Tracey Martinson, Ph.D.
Radiation Safety Officer
P.O. Box 758145
Fairbanks, AK 99775-8145

SUBJECT: LICENSE AMENDMENT

Please find enclosed Amendment No. 50 to NRC License No. 50-02430-07. **This license amendment authorizes the new incinerator at the new Biological Research & Diagnostics (BiRD) facility located on the University of Alaska, Fairbanks campus. The documentation submitted by letter dated June 27, 2008, adequately addressed our questions regarding the incinerator and the determination of the residual radioactivity in the incinerator ash. The determination is based on the analysis of five sub-samples collected from each burn cycle. The proposed calculation is an accurate method of complying with the requirement in 10 CFR 20.1501. This methodology is considered reasonable as long as the samples collected are representative of the batch of ash being tested. In addition, your letter dated March 3, 2008 is authorized as License Condition 31.H., due to the facility drawings and diagrams of the new incinerator enclosed with the letter.**

Thank you for clarifying the other use activities being conducted at the Arctic Health Research Building. We understand that the use of radioactive materials is continuing at this facility and that you will only be decommissioning the older incinerator at this location.

This license amendment also recognizes the new Delegation of Authority for the current Radiation Safety Officer.

An environmental assessment for this action is not required, since this action is categorically excluded under 10 CFR 51.22(c)(14)(v). You should review the enclosed document carefully and be sure that you understand all license conditions. If there are any questions, please contact me at (817) 276-6552.

NRC expects licensees to conduct their programs with meticulous attention to detail and a high standard of compliance. Because of the serious consequences to employees and the public that can result from failure to comply with NRC requirements, you must conduct your radiation safety program according to the conditions of your NRC license, representations made in your license application, and NRC regulations. In particular, note that you must:

1. Operate by NRC regulations 10 CFR Part 19, "Notices, Instructions and Reports to Workers: Inspection and Investigations," 10 CFR Part 20, "Standards for Protection Against Radiation," and other applicable regulations.

2. Notify NRC in writing of any change in mailing address.

3. By 10 CFR 30.36(d) and/or license condition, notify NRC, promptly, in writing, and request termination of the license:

   a. When you decide to terminate all activities involving materials authorized under the license whether at the entire site or any separate building or outdoor area;

   b. If you decide not to acquire or possess and use authorized material; or

   c. When no principal activities under the license have been conducted for a period of 24 months.

4. Request and obtain a license amendment before you:

   a. Change Radiation Safety Officers;

   b. Order byproduct material in excess of the amount, radionuclide or form authorized on the license;

   c. Add or change the areas or address(es) of use identified in the license application or on the license, except for areas of use where byproduct material is used only in accordance with either 10 CFR 35.100 or 35.200; or

   d. Change the name or ownership of your organization.

In addition, please note that NRC Form 313 requires the applicant, by signature, to verify that the applicant understands that all statements contained in the application are true and correct to the best of the applicant's knowledge. The signatory for the application should be the licensee or certifying official rather than a consultant. Since the NRC also accepts a letter requesting amendment of an NRC license, the signatory for such a request should also be the licensee or certifying official rather than a consultant.

NRC will periodically inspect your radiation safety program. Failure to conduct your program according to NRC regulations, license conditions, and representations made in your license application and supplemental correspondence with NRC may result in enforcement action against you. This could include issuance of a notice of violation; imposition of a civil penalty; or an order suspending, modifying, or revoking your license as specified in the NRC Enforcement Policy. The NRC Enforcement Policy is available on the following internet address: http://www.nrc.gov/reading-rm/doc-collections/enforcement/.

NRC no longer publishes the NRC Rules and Regulations loose leaf supplements. However, an electronic version of the NRC's regulations is available on the NRC Web site at www.nrc.gov. Additional information regarding use of radioactive materials may be obtained on the NRC Web site at http://www.nrc.gov/materials/miau/mat-toolkits.html. This site also provides the link to the toolbox for updated information on the revised regulations for naturally-occurring and accelerator-produced radioactive materials (NARM).

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html.

Thank you for your cooperation.

Sincerely,

Rachel S. Browder

Rachel S. Browder, Health Physicist
Nuclear Materials Safety Branch B

Docket: 030-01179
License: 50-02430-07
Control: 471859; 471940

Enclosure: As stated

U.S. NUCLEAR REGULATORY COMMISSION

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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	In accordance with letters dated June 27, 2008, July 30, 2008
1. University of Alaska Fairbanks Environmental Health, Safety, and Risk Management 2. 1000 University Avenue, Room 155 P.O. Box 758145 Fairbanks, Alaska 99775-8145	3. License number 50-02430-07 is amended in its entirety to read as follows: 4. Expiration date March 31, 2010 5. Docket No. 030-01179 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. As specified in 10 CFR 33.100, Schedule A (Type B Broad Scope)	A. Any	A. See Condition 12
B. Cobalt-60	B. Sealed source (ICN Chemical and Radioisotope Division)	B. 100 microcuries total.
C. Hydrogen-3	C. Foils contained in electron capture detectors	C. 200 microcuries total.
D. Nickel-63	D. Foils contained in electron capture detectors	D. 120 microcuries total.
E. Cesium-137	E. Sealed source (Mount Sorpris Model GC375)	E. 5 millicuries total.
F. Americium-241	F. Sealed source (Mount Sorpris Model NN976)	F. 1 curie total.
G. Americium-241	G. Sealed source (Campbell Pacific Nuclear CPN-131)	G. 50 millicuries total.
H. Cesium-137	H. Sealed source (Campbell Pacific Nuclear CPN-131)	H. 10 millicuries total.
I. Cesium-137	I. Sealed source (Isotope Products Laboratories Model HEG-137-30)	I. 60 millicuries total. Not to exceed 30 millicuries per source

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9. Authorized Use:

A. Research and development as defined in 10 CFR 30.4. In vitro and in vivo studies in plants and animals

B. For calibration of the licensee's survey instruments.

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

E. and F. For storage only.

G. and H. For storage only.

I. For calibration of the licensee's survey instruments and for physics laboratory demonstrations.

CONDITIONS

10. A. Licensed material shall be used only at the licensee's facilities located at:

1. University of Alaska, Fairbanks Campus, Fairbanks, Alaska
2. University of Alaska, Seward Marine Center, 201 Railway Avenue, Seward, Alaska
3. Alaska Sealife Center, 301 Railway Avenue, Seward, Alaska
4. Large Animal Research Station, Mile 1, Yankovich Road, Fairbanks, Alaska
5. Toolik Lake Field Station, North Slope Borough, Alaska

B. Licensed material described in Items C., D., G., and H., may also be used anywhere in the State of Alaska and at temporary job sites of the licensee where the U.S. Nuclear Regulatory Commission maintain jurisdiction for regulating the use of licensed material under the following conditions:

1. Specific approval is given by the University of Alaska Fairbanks Radiation Safety Officer.

2. The licensee obtains written permission to use radioactive materials at the proposed site from the appropriate authorities (or persons) who maintain administrative control over the property.

C. Hydrogen-3 and carbon-14 may be used at the Large Animal Research Station, Fairbanks, Alaska, as described in the application dated August 26, 1999, for studies of metabolism and body processes of reindeer/caribou (Rangifer tarandus) and muskoxen (Ovibos moschatus).

D. Carbon-14 may be used at the Toolik Lake Field Station, North Slope Borough, Alaska, in accordance with letters dated June 27, 2000, April 16, 2001, and December 1, 2001.

E. Licensed material described in Items A. and D. may be used aboard the R/V Alpha Helix, home port at the University of Alaska, Seward Marine Center, Seward, Alaska.

F. Hydrogen-3 may be used on St. Paul Island and Bogoslof Island, Alaska, in accordance with the letter dated March 21, 2005.

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G. The incinerator for hydrogen-3 and carbon-14 located at the Arctic Health Research Building as described in Appendix F to letter dated March 10, 2000, has been taken out of service pending dismantlement and decommissioning of the incinerator.

11. A. Licensed materials shall only be used by, or under the supervision of, individuals designated in writing by the Radiation Safety Officer.

B. The Radiation Safety Officer for this license is Tracey Martinson, Ph.D.

12. For Item 8.A, if only one radionuclide is possessed, the possession limit is the quantity specified for that radionuclide in 10 CFR 33.100, Schedule A, Column 1. If two or more radionuclides are possessed, the possession limit is determined as follows: For each radionuclide, determine the ratio of the quantity possessed to the applicable quantity specified in 10 CFR 33.100, Schedule A, Column 1, for that radionuclide. The sum of the ratios for all radionuclides possessed under the license shall not exceed unity.

13. This license does not authorize disposal of licensed material at sea.

14. 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 microcuries (185 becquerels) of radioactive material on the test sample. If the test reveals the presence of 0.005 microcuries (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. The report shall be filed within 5 days of the date the leak test result is known with the U.S. Nuclear Regulatory Commission, Region IV, 612 E. Lamar Blvd., Suite 400, Arlington, Texas 76011, ATTN: Director, Division of Nuclear Materials Safety. The report shall specify the source involved, the test results, and corrective action taken.

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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.

15. 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.

16. A. Detector cells containing a titanium tritide foil or a scandium tritide foil shall only be used in conjunction with a properly operating temperature control mechanism which prevents the foil temperature from exceeding that specified in the certificate of registration referred to in 10 CFR 32.210.

B. When in use, detector cells containing a titanium tritide foil or a scandium tritide foil shall be vented to the outside, unless the cells are used in a mobile laboratory situation in the field.

17. Licensed material shall not be used in or on human beings.

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

19. This license does not authorize commercial distribution of licensed material.

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

21. 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."

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

23. The licensee shall not acquire licensed material in a sealed source or device that contains a sealed source unless the source or device has been registered with the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or with an Agreement State.

24. The licensee shall conduct a physical inventory every 6 months to account for all sealed sources and/or devices received and possessed under the license.

25. In addition to the possession limits in item 8, the licensee shall further restrict the possession of unsealed byproduct materials to quantities less than 10^4 of the applicable limits in Appendix B of 10 CFR Part 30, as specified in 10 CFR 30.35(d).

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26. 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. 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

    C. Maintains records of the disposal of licensed materials for 3 years. The record must include the date of the 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.

27. Radioactive waste generated shall be stored in accordance with the statements, representation, and procedures included with the waste storage plan described in the licensee's application dated August 26, 1999, and letter dated March 10, 2000.

28. Each portable nuclear gauge shall have a lock or outer locked container designed to prevent unauthorized or accidental removal of the sealed source from it shielded position. The gauge or its container must be locked when in transport, storage, or when not under the direct surveillance of an authorized user.

29. Upon completion of each carbon-14 field study identified in License Condition 10.D., the licensee shall notify the NRC Region IV office identified in 10 CFR 30.6 and submit a copy of the baseline and final decommissioning surveys of the affected subplots.

30. Pursuant to 10 CFR 20.1302(c) and 10 CFR 20.2002, the licensee is authorized to dispose of licensed material by incineration, provided the gaseous effluent from incineration does not exceed the limits specified for air in Appendix B, Table II, 10 CFR Part 20.

31. Pursuant to 10 CFR 20.2002, the licensee may dispose of incinerator ash containing radioactive materials with Atomic Nos. 1-83, except as identified below, as ordinary waste in a landfill, provided that the concentration of radionuclides (in microcuries per gram of ash) at the time of disposal are no greater than the values of Table II, Column 2, 10 CFR Part 20, Appendix B. For hydrogen-3, carbon-14, aluminum-26, cholorine-36, silver-108m, niobium-94, iodine-129, technetium-99, and thalium-204, the concentration can be no greater than one-tenth of the value in Table II, Column 2, 10 CFR Part 20, Appendix B. If more than one radionuclide is present in the ash, then the sum of fractions rule applies.

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32. 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 Commissions'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 August 26, 1999
B. Letter dated March 10, 2000
C. Letter dated April 18, 2000
D. Letter dated June 27, 2000
E. Letter dated April 16, 2001
F. Letter dated December 1, 2001
G. Letter dated March 21, 2005
H. Letter dated March 3, 2008 (ML081020146)
I. Letter dated June 27, 2008 (ML082170174)
J. Letter dated July 30, 2008 (ML082421001)

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date: September 26, 2008

By: Rachel S. Browder

Rachel S. Browder, Health Physicist
Nuclear Materials Safety Branch B
Region IV
Arlington, Texas