



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

R1 8

March 6, 2002

Docket No. 03004545
Control No. 130902

License No. 19-08330-02

COL Robert R. Eng
Director
Safety and Health Department
Armed Forces Radiobiology Research Institute
8901 Wisconsin Avenue
Bethesda, MD 20889-5603

SUBJECT: ARMED FORCES RADIOBIOLOGY RESEARCH INSTITUTE, ISSUANCE OF
LICENSE AMENDMENT, CONTROL NO. 130902

Dear Colonel Eng:

This refers to your license amendment request. Enclosed with this letter is the amended license which covers the addition of byproduct material with atomic number 84 through 103. As we indicated in our letter dated February 14, 2002, your request for authorization to dispose of animal carcasses containing uranium as biological waste will require additional information. When you have compiled the required information, you may apply for a separate amendment at that time.

Please review the enclosed document carefully and be sure that you understand and fully implement all the conditions incorporated into the amended license. If there are any errors or questions, please notify the U.S. Nuclear Regulatory Commission, Region I Office, Licensing Assistance Team, (610) 337-5239, so that we can provide appropriate corrections and answers.

In accordance with 10 CFR 2.790, a copy of this letter will be placed in the NRC Public Document Room and will be accessible from the NRC Web site at <http://www.nrc.gov/reading-rm.html>.

Thank you for your cooperation.

Sincerely,

Original signed by John R. McGrath

John R. McGrath
Senior Health Physicist
Nuclear Materials Safety Branch 2
Division of Nuclear Materials Safety

Enclosure:
Amendment No. 51

cc:

Ce/25

R. Eng 2
Armed Forces Radiobiology Research Institute

MAJ Jcyce Kraimer, Radiation Safety Officer

DOCUMENT NAME: C:\Program Files\Adobe\Acrobat 4.0\PDF
Output\19-08330-02.130902.03062002.wpd

To receive a copy of this document, indicate in the box: "C" = Copy w/o attach/encl "E" = Copy w/ attach/encl "N" = No copy

OFFICE	DNMS/RI	N	DNMS/RI	DNMS/RI			
NAME:	JMcGrath/JRM						
DATE	3/6/2002						

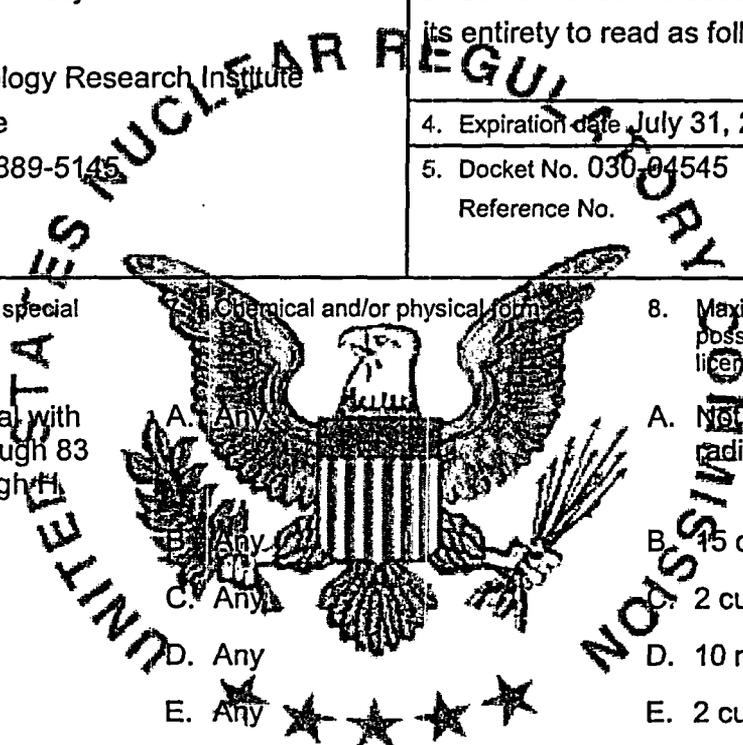
OFFICIAL RECORD COPY

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.

<p style="text-align: center;">Licensee</p> <p>1. Uniformed Services University of the Health Sciences Armed Forces Radiobiology Research Institute</p> <p>2. 8901 Wisconsin Avenue Bethesda, Maryland 20889-5145</p>	<p>In accordance with the letter dated January 22, 2002,</p> <p>3. License number 19-08330-02 is amended in its entirety to read as follows:</p> <hr/> <p>4. Expiration date July 31, 2004</p> <hr/> <p>5. Docket No. 030-04545 Reference No.</p>
---	---

<p>6. Byproduct, source, and/or special nuclear material</p> <p>A. Any byproduct material with atomic number 3 through 83 except items B. through H.</p> <p>B. Hydrogen 3</p> <p>C. Carbon 14</p> <p>D. Strontium 90</p> <p>E. Molybdenum 99</p> <p>F. Technetium 99m</p> <p>G. Iodine 129</p> <p>H. Xenon 133/133m</p> <p>I. Cobalt 60</p> <p>J. Cesium 137</p> <p>K. Any byproduct material with atomic number 84 through 103</p> <p>L. Americium 241</p> <p>M. Californium 252</p>	<p>Chemical and/or physical form</p> <p>A. Any</p> <p>B. Any</p> <p>C. Any</p> <p>D. Any</p> <p>E. Any</p> <p>F. Any</p> <p>G. Any</p> <p>H. Any</p> <p>I. Sealed sources</p> <p>J. Sealed sources</p> <p>K. Any</p> <p>L. Foils</p> <p>M. Sealed source</p>	<p>8. Maximum amount that licensee may possess at any one time under this license</p> <p>A. Not to exceed 1 curie per radionuclide and 30 curies total</p> <p>B. 15 curies</p> <p>C. 2 curies</p> <p>D. 10 millicuries</p> <p>E. 2 curies</p> <p>F. 2 curies</p> <p>G. 10 millicuries</p> <p>H. 2 curies</p> <p>I. 4 curies per source and 4 curies total</p> <p>J. 200 curies per source and 600 curies total</p> <p>K. Not to exceed 1 curie per radionuclide and 30 curies total</p> <p>L. 10 millicuries</p> <p>M. 1.4 curies</p>
---	--	---



**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License Number
19-08330-02

Docket or Reference Number
030-04545

Amendment No. 51

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. Uranium 233	N. Any	N. 1 gram
O. Uranium 235	O. Any	O. 30 grams
P. Uranium 238	P. Any	P. 4 kilograms
Q. Uranium (depleted)	Q. Any	Q. 15.5 kilograms
R. Plutonium 239	R. Foils	R. 100 grams
S. Plutonium	S. Any	S. 0.1 gram
T. Cobalt 60	T. Sealed Sources (J.L. Shepherd & Associates Model 7810).	T. 120 curies per source and 20 curies total

9. Authorized use:

- A. through S. Research and development as defined in 10 CFR 30.4, animal studies.
 T. In J.L. Shepherd & Associates Model 81 Series Panoramic Irradiator for research and development as defined in 10 CFR 30.4, and for the irradiation of material except explosives, flammables, or corrosives.

10. Licensed material may be used only at the licensee's facilities, Armed Forces Radiobiology Research Institute, 8901 Wisconsin Avenue, Bethesda, Maryland.
11. A. Licensed material shall only be used by, or under the supervision of, individuals designated, in writing, by the licensee's Radionuclide and X-ray Safety Committee.
- B. The Radiation Safety Officer for this license is Major Joyce Kraimer.
12. In addition to the possession limits in item 8 of this license, the licensee shall further limit the possession of unsealed byproduct material of half-life greater than 120 days to quantities less than those that require licensees to submit a decommissioning funding plan as specified in 10 CFR 30.35(a).
13. The licensee shall not use licensed material in or on human beings.
14. The licensee shall not use licensed material in field applications where it 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 materials shall not be used for human consumption.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**License Number
19-08330-02Docket or Reference Number
030-04545

Amendment No. 51

16. The licensee shall not acquire licensed material in a sealed source or device unless the source or device has been registered with the U.S. Nuclear Regulatory Commission pursuant to 10 CFR 32.210 or equivalent regulations of an Agreement State.
17. 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. 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 3 months.
- C. Each sealed source fabricated by the licensee shall be inspected and tested for construction defects, leakage, and contamination prior to any use or transfer as a sealed source.
- D. 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.
- E. 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.
- F. 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.
- G. 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.
- H. 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.
18. Sealed sources or detector cells containing licensed material shall not be opened or sources removed from source holders by the licensee.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**License Number
19-08330-02Docket or Reference Number
030-04545

Amendment No. 51

19. The licensee shall conduct a physical inventory every six months, or at other interval approved by the U.S. Nuclear Regulatory Commission, to account for all sealed sources and/or devices received and possessed under the license.
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:
- Waste to be disposed of in this manner shall be held for decay a minimum of 10 half-lives.
 - 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.
 - 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.
21. Radioactive waste possessed under this license shall be stored in accordance with the statements, representations, and procedures included with the licensee's waste storage plan described in the letter dated April 21, 1994.
22. The licensee is authorized to transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."
23. Notwithstanding the requirements of License Condition 24, the licensee is authorized to make program changes and changes to procedures specifically identified in the application dated August 26, 1991, which were previously approved by the U.S. Nuclear Regulatory Commission and incorporated into the license without prior Commission approval as long as:
- The proposed revision is documented, reviewed, and approved by the licensee's Radionuclide and X-ray Safety Committee in accordance with established procedures prior to implementation.
 - The revised program is in accordance with regulatory requirements, will not change the license conditions, and will not decrease the effectiveness of the Radiation Safety Program.
 - The licensee's staff is trained in the revised procedures prior to implementation.
 - The licensee's audit program evaluates the effectiveness of the change and its implementation.
24. 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

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**License Number
19-08330-02Docket or Reference Number
030-04545

Amendment No. 51

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 August 26, 1991
- B. Letter dated January 31, 1994
- C. Letter dated April 21, 1994
- D. Letter dated July 8, 1994
- E. Letter dated August 5, 1994
- F. Letter dated September 6, 1996
- G. Letter dated June 11, 2001



For the U.S. Nuclear Regulatory Commission

Date March 6, 2002

By

Original signed by John R. McGrath

John R. McGrath
Nuclear Materials Safety Branch 2
Division of Nuclear Materials Safety
Region I
King of Prussia, Pennsylvania 19406