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NRC FORM 374 U.S. NUCLEAR REGULATORY COMMISSION

Amendment No. 78

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 letter dated August 21, 2007
1. Department of the Army Madigan Army Medical Center 2. MCHJ-PVR (Health Physics Office) Tacoma, Washington 98431-5000	3. License number 46-02645-03 is amended in its entirety to read as follows: 4. Expiration date October 31, 2010 5. Docket No. 030-03368 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 permitted by 10 CFR 35.100	A. Any	A. As needed
B. Any byproduct material permitted by 10 CFR 35.200	B. Any	B. As needed
C. Any byproduct material permitted by 10 CFR 35.300	C. Any	C. 3.0 curies (no single container to exceed 500 millicuries)
D. Any byproduct material permitted by 10 CFR 35.400	D. Sealed sources used in manual brachytherapy permitted by 10 CFR 35.400	D. 10 curies
E. Hydrogen 3	E. Any	E. 100 millicuries
F. Calcium 45	F. Any	F. 1.0 millicurie
G. Carbon 14	G. Any	G. 10 millicuries
H. Chlorine 36	H. Any	H. 1.0 millicurie
I. Iodine 129	I. Any	I. 2 microcuries
J. Iron 55	J. Any	J. 5.0 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
K. Manganese 54	K. Any	K. 0.5 millicurie
L. Zinc 65	L. Any	L. 0.5 millicurie
M. Sulfur 35	M. Any	M. 50 millicuries
N. Phosphorus 32	N. Any	N. 50 millicuries
O. Phosphorus 33	O. Any	O. 50 millicuries
P. Cobalt 58	P. Any	P. 50 millicuries
Q. Iron 59	Q. Any	Q. 50 millicuries
R. Rubidium 81	R. Any	R. 50 millicuries
S. Strontium 89	S. Any	S. 50 millicuries
T. Yttrium 90	T. Any	T. 50 millicuries
U. Yttrium 91	U. Any	U. 50 millicuries
V. Tin 113	V. Any	V. 50 millicuries
W. Xenon 133	W. Any	W. 50 millicuries
X. Xenon 127	X. Any	X. 50 millicuries
Y. Samarium 153	Y. Any	Y. 50 millicuries
Z. Rhenium 188	Z. Any	Z. 50 millicuries
AA. Krypton 85	AA. Any	AA. 5 millicuries
BB. Iodine 125	BB. Any	BB. 50 millicuries
CC. Iodine 131	CC. Any	CC. 150 millicuries
DD. Molybdenum 99	DD. Any	DD. 3 curies

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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
EE. Technetium 99m	EE. Any	EE. 1 curie
FF. Any byproduct material with Atomic Nos. 1 through 83, inclusive	FF. Sealed sources	FF. Not to exceed 700 millicuries total
GG. Nickel 63	GG. Foils in Electron Capture Detectors	GG. 100 millicuries
HH. Depleted uranium	HH. Shielding	HH. 999 kilograms
I I. Gadolinium-153	I I. Sealed sources (North American Scientific, Inc., Model MED 3601; DuPont Merck Model NES-8412; Isotope Products Laboratories, Inc., Model A3410)	I I. 300 millicuries per housing, total possession limit 2 curies
JJ. Gadolinium-153	JJ. Sealed sources (Isotope Products Laboratories Model A3402; Dupont Model NES-8424)	JJ. 400 millicuries per housing; total possession limit 1.5 curies

9. Authorized use

A. Any uptake, dilution, and excretion study permitted by 10 CFR 35.100.

B. Any imaging and localization study permitted by 10 CFR 35.200.

C. Any use permitted by 10 CFR 35.300.

D. Any manual brachytherapy use permitted by 10 CFR 35.400.

E. through EE. Research in laboratory animals.

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A. through C., and E. through EE. Compounding and manufacturing of radiopharmaceuticals for in vivo and in vitro use, provided that such radiopharmaceuticals for in vivo use shall be subject to the Food and Drug Administration's requirements for New Drug Applications (NDA's) and Investigational New Drugs (IND's), and research in humans as approved by a Radioactive Drug Research Committee (RDRC) approved by the FDA, or prepared from reagents under the supervision of the "Authorized Nuclear Pharmacists" listed in Condition 12.B.

FF. Reference/calibration standards.

GG. For storage only.

HH. As shielding for linear accelerators, molybdenum-99/technetium-99 generators, or in shielding blocks to be used in selected radiation therapy procedures.

I I. For use in an ADAC Laboratories Model Vantage line source housing for SPECT cameras.

JJ. For use in SMV America Model PS-96 line source housing for PET camera.

CONDITIONS

10. Licensed material shall be used or stored only at the licensee's facilities located at Madigan Army Medical Center, Tacoma, Washington.

11. A. The Radiation Safety Officer for this license is CPT Harry M. Stewart, Jr.

    B. In the absence of CPT Harry M. Stewart, Jr., the Acting Radiation Safety Officer is Danny L. Rice.

12. Licensed material listed in Item 6 above is only authorized for use by, or under the supervision of:

    A. Individuals permitted to work as an authorized user, authorized nuclear pharmacist, and/or authorized medical physicist in accordance with 10 CFR 35.13 and 35.14.

    B. Authorized Nuclear Pharmacist for this license is Jane E. Besich.

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C. The following individuals are authorized users for the material and uses indicated:

Authorized Users	Material and Use
Antonio G. Balingit, M.D.	35.100; 35.200; 35.300; Items 6.E through 6.JJ; Gd-153
Jerome Billingsley, M.D.	35.100; 35.200; 35.300; Items 6.E through 6.JJ; Gd-153
Marc Cote, D.O.	35.100; 35.200; 35.300; Items 6.E through 6.JJ; Gd-153
Michael W. Brown, M.D.	35.400
John Halligan, M.D.	35.400
Joseph P. Brooks, M.D.	35.400
Darryl Ainbinder, M.D.	35.400 (restricted to ophthalmic radiotherapy)
James Wright	Items 6.E through 6.JJ
Mary Jo DeHart	Items 6.E through 6.JJ

13. A. Sealed sources and detector cells 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 emit alpha particles shall be tested for leakage and/or contamination at intervals not to exceed 3 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 or detector cell received from another person shall not be put into use until tested and the test results received.

D. 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.

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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 or detector cell 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. 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, 611 Ryan Plaza Drive, 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.

H. Tests for leakage and/or contamination 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.

14. 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.

15. 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."

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

17. 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.

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18. 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.

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

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

21. 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

    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.

22. 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 temperatures from exceeding that specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission pursuant to 10 CFR 32.210 or equivalent regulations from an Agreement State.

    B. When in use, detector cells containing a titanium tritide foil or a scandium tritide foil shall be vented to the outside.

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23. 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. This license condition applies only to those procedures that are required to be submitted in accordance with the regulations. Additionally, this license condition does not limit the licensee's ability to make changes to the radiation protection program as provided for in 10 CFR 35.26. 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 March 20, 2000 (ML003726336)
B. Facsimile dated October 17, 2000 (ML003768951)
C. Facsimile dated October 23, 2000 (ML003768951)
D. Letter dated February 12, 2001 (ML010880414)
E. Letter dated June 1, 2001 (ML011870190)
F. Letter dated June 27, 2001 (ML012110197)
G. Facsimile dated July 30, 2001 (ML011870190)
H. Facsimile dated August 22, 2001 (ML012550100)
I. Letter dated October 19, 2001 (ML012550100)
J. Letter dated February 27, 2002 (ML020710543)

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date November 26, 2007

By */RA/*

Jacqueline D. Cook, Senior Health Physicist
Nuclear Materials Safety Branch B
Region IV
Arlington, Texas 76011