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

October 2, 2006

Docket No. 03003575 License No. 01-06571-10
Control No. 139145

Allen Elliot
Manager
National Aeronautics and Space Administration
George C. Marshall Space Flight Center
NASA, MSFC, AS10M
Huntsville, AL 35812

SUBJECT: NATIONAL AERONAUTICS AND SPACE ADMINISTRATION, LICENSE AMENDMENT, CONTROL NO. 139145

Dear Mr. Elliot:

This refers to your license amendment request. Enclosed with this letter is the amended license.

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.

An environmental assessment for this action is not required, since this action is categorically excluded under 10 CFR 51.22(c)(14).

Current NRC regulations and guidance are included on the NRC's website at www.nrc.gov; select **Nuclear Materials; Medical, Academic, and Industrial Uses of Nuclear Material;** then **Toolkit Index Page.** Or you may obtain these documents by contacting the Government Printing Office (GPO) toll-free at 1-888-293-6498. The GPO is open from 7:00 a.m. to 8:00 p.m. EST, Monday through Friday (except Federal holidays).

Thank you for your cooperation.

Sincerely,

Original signed by Stephen Hammann

Stephen Hammann
Health Physicist
Commercial and R&D Branch
Division of Nuclear Materials Safety

Enclosure:
Amendment No. 41

cc:
Philip Brown, Radiation Safety Officer

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SUNSI Review Complete: SHammann
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DATE	10/2/2006							

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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	
1. National Aeronautics and Space Administration George C. Marshall Space Flight Center	In accordance with the letter dated July 11 2006, 3. License number 01-06571-10 is amended in its entirety to read as follows:
2. NASA, MSFC, AS10M Huntsville, Alabama 35812	4. Expiration date February 29, 2016 5. Docket No. 030-03575 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. Hydrogen 3	A. Any	A. 7 millicuries
B. Manganese 54	B. Foil or plated sources (Isotope Products Laboratories Models GF-54-R or GF-54-D)	B. No single source to exceed the maximum activity specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission or an Agreement State
C. Iron 55	C. Sealed, foil, or plated sources (Isotope Products Laboratories Models AN-55 or PHI-055; Amersham Model IEC.A1)	C. No single source to exceed the maximum activity specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission or an Agreement State
D. Cobalt 60	D. Sealed, foil or plated sources (Isotope Products Laboratories Models GF-60-R, GF-60-D, or 193)	D. No single source to exceed the maximum activity specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission or an Agreement State

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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
E. Selenium 75	E. Sealed sources (Isotope Products Laboratories Model R-75)	E. No single source to exceed the maximum activity specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission or an Agreement State
F. Strontium 90	F. Sealed, foil or plated sources (Isotope Products Laboratories Model BF090; AEA Technology-QSA Inc. Model SIF.D1; Amersham/Searle Type SIC)	F. No single source to exceed the maximum activity specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission or an Agreement State
G. Cadmium 109	G. Sealed or plated sources (Isotope Products Laboratories Models PHI-109, XFB-3, XFB-5, GF-109-R, or FG-109-D)	G. No single source to exceed the maximum activity specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission or an Agreement State
H. Cesium 137	H. Sealed sources (Isotope Products Laboratories Models GF-137-R, GF-137-D, or 193)	H. No single source to exceed the maximum activity specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission or an Agreement State
I. Barium 133	I. Plated sources (Isotope Products Laboratories Model GF-133-D)	I. No single source to exceed the maximum activity specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission or an Agreement State
J. Gadolinium 153	J. Sealed sources (Amersham Model GDC.CY1)	J. No single source to exceed the maximum activity specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission or an Agreement State

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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. Americium 241	K. Sealed sources (Amersham Model AMC.2084; Monsanto Agricultural Company Model 2722-BT;Isotope Products Laboratory Model AF series)	K. No single source to exceed the maximum activity specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission or an Agreement State
L. Americium 241	L. Foils (AEA Model AMM.1001H)	L. No single source to exceed the maximum activity specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission or an Agreement State
M. Curium 244	M. Foil or plated sources (Isotope Products Laboratories Models AF-244-C or AF-210-C)	M. No single source to exceed the maximum activity specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission or an Agreement State
N. Depleted Uranium	N. Unsealed sources (powders, pellets and ceramics)	N. 27.3 kilograms
O. Nickel 63	O. Plated foils (Isotope Products Laboratory Model NER 004; Nuclear Radiation Developments, Inc. Model N-1001)	O. No single source to exceed the maximum activity specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission or an Agreement State

9. Authorized use:

A. Possession and storage only of ICN Biomedicals awaiting disposal.

B. Through N. Research and development as defined in 10 CFR 30.4.

O. To be used for sample analysis in Shimadzu Scientific Instruments Inc. Model No. ECD-14 gas chromatography devices that have been registered either with the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or with an Agreement State and have been distributed in accordance with a Commission or Agreement State specific license authorizing distribution to persons specifically authorized by a Commission or Agreement State license to receive, possess, and use the devices.

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CONDITIONS

10. Licensed material may be used or stored only at the licensee's facilities located at George C. Marshall Space Flight Center, Huntsville, Alabama.

11. Licensed material, except depleted uranium, shall be used by, or under the supervision of, Philip O. Brown, Fred A. Berry, Jr. Mark J. Christi, John M. Davis, David L. Edwards, John M. Horack, Laurel J. Karr, James H. Perkins (for gas chromatography), Brian D. Ramsey, Robert C. Richmond, J.Edwards Phillips, Gerald J. Fishman, Jeff McCracken, or David T. Hoppe. Depleted uranium shall be used by, or under the supervision of, Philip O. Brown.

12. The Radiation Safety Officer for this license is Philip O. Brown.

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.

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

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

16. A. Sealed sources shall be tested for leakage and/or contamination at intervals not to exceed six months or at 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. 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.

    D. 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.

    E. 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.

F. 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.

G. 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.

H. Records of leak test results shall be kept in units of microcuries and shall be maintained for 5 years.

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

18. 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. 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.

19. 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 U.S. Nuclear Regulatory Commission or an Agreement State to perform such services.

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

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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 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 September 28, 2005 (ML052840321)
    B. Letter dated January 4, 2006 (ML060120198)
    C. Letter dated July 11, 2006 (ML062010457)

For the U.S. Nuclear Regulatory Commission

Date October 2, 2006

By ***Original signed by Stephen Hammann***

Stephen Hammann
Commercial and R&D Branch
Division of Nuclear Materials Safety
Region I
King of Prussia, Pennsylvania 19406