

MATERIALS LICENSE

Amendment 45

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.

OFFICIAL RECORD COPY

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|--|-------------------------------------|--|--|
| Licensee Uniformed Services University of the Health Sciences Armed Forces Radiobiology Research Institute 8901 Wisconsin Avenue Bethesda, Maryland 20889-5145 | | In accordance with the letter dated December 6, 1996, 3. License Number 19-08330-02 is amended in its entirety to read as follows: 4. Expiration Date July 31, 2004 5. Docket or Reference No. 030-04545 | |
| 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 atomic number 3 through 83 except items B. through H. | A. Any | A. Not to exceed 1 curie per radionuclide and 30 curies total | |
| B. Hydrogen 3 | B. Any | B. 15 curies | |
| C. Carbon 14 | C. Any | C. 2 curies | |
| D. Strontium 90 | D. Any | D. 100 millicuries | |
| E. Molybdenum 99 | E. Any | E. 2 curies | |
| F. Technetium 99m | F. Any | F. 2 curies | |
| G. Iodine 129 | G. Any | G. 10 millicuries | |
| H. Xenon 133/133m | H. Any | H. 2 curies | |
| I. Polonium 210 | I. Any | I. 20 millicuries | |
| J. Neptunium 237 | J. Any | J. 69 millicuries | |
| K. Americium 241 | K. Any | K. 10 millicuries | |
| L. Curium 242 | L. Any | L. 10 millicuries | |
| M. Curium 244 | M. Any | M. 10 millicuries | |
| N. Cobalt 60 | N. Sealed sources | N. Not to exceed 4 curies per source and 4 curies total | |
| O. Cesium 137 | O. Sealed sources | O. Not to exceed 200 curies per source and 600 curies total | |
| P. Americium 241 | P. Foils | P. 10 millicuries | |
| Q. Californium 252 | Q. Sealed source | Q. 1.4 curies | |
| R. Uranium 233 | R. Any | R. 1 gram | |
| S. Uranium 235 | S. Any | S. 30 grams | |
| T. Uranium 238 | T. Any | T. 4 kilograms | |
| U. Uranium (depleted) | U. Any | U. 15.5 kilograms | |
| V. Plutonium 239 | V. Foils | V. 100 grams | |
| W. Plutonium | W. Any | W. 0.1 gram | |

9. Authorized use

A. through W. Research and development as defined in 10 CFR 30.4; animal studies.

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**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License Number

19-08330-02

Docket or Reference Number

030-04545

CONDITIONS

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 be used by, or under the supervision of individuals designated in writing by the licensee's Radionuclide and X-ray Safety Committee, Colonel John Sheehan, Chairperson.
B. The Radiation Safety Officer for this license is Captain Charles B. Galley, MSC.
12. In addition to the possession limits in items 6, 7 and 8 of this licensee, 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. Licensed material shall not be used in or on human beings.
14. The licensee shall not use licensed material in field applications where activity 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.
16. 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:
 - A. Waste to be disposed of in this manner shall be held for decay a minimum of ten half-lives.
 - B. 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.
 - C. A record of each such 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.
17. Radioactive waste generated shall be stored in accordance with the statements, representations, and procedures included with the waste storage plan described in the licensee's letter dated April 21, 1994.
18. The licensee shall conduct a physical inventory every six months to account for all sealed sources and devices containing licensed material received and possessed under the license.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License Number

19-08330-02

Docket or Reference Number

030-04545

Amendment No. 45

19. A. Sealed sources and detector cells containing licensed material shall be tested for leakage and/or contamination at intervals not to exceed six months or at such other intervals as are specified by the certificate of registration referred to in 10 CFR 32.210, not to exceed three years.
- 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 three months.
- C. In the absence of a certificate from a transferor indicating that a leak test has been made within six months prior to the transfer, a sealed source or detector cell received from another person shall not be put into use until tested.
- 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.
- E. Sealed sources and detector cells need not be leak tested if:
 - (i) they contain only hydrogen-3; or
 - (ii) they contain only a radioactive gas; or
 - (iii) the half-life of the isotope is 30 days or less; or
 - (iv) they contain not more than 100 microcuries of beta and/or gamma emitting material or not more than 10 microcuries of alpha emitting material; or
 - (v) they are not designed to emit alpha particles, are in storage, and are not being used. However, when they are removed from storage for use or transfer 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.
- F. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie or more of removable contamination, a report shall be filed with the U.S. Nuclear Regulatory Commission and the source or detector cell shall be removed immediately from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. The report shall be filed within five days of the date the leak test result is known with the U.S. Nuclear Regulatory Commission, Region I, ATTN: Chief, Nuclear Materials Safety Branch, 475 Allendale Road, King of Prussia, Pennsylvania 19406. The report shall specify the source or detector cell involved, the test results, and corrective action taken.
- G. The licensee is authorized to collect leak test samples for analysis by licensee. Alternatively, tests for leakage and/or contamination may be performed by persons specifically licensed by the Commission or an Agreement State to perform such services.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License Number

19-08330-02

Docket or Reference Number

030-04545

Amendment No. 45

20. 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.
21. The licensee is authorized to transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."
22. 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 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

Date

MAR 19 1997

For the U.S. Nuclear Regulatory Commission

ORIGINAL SIGNED BY:

JOHN D. KINNEMAN

By

Division of Nuclear Materials Safety
Region I
King of Prussia, Pennsylvania 19406

MAR 19 1997

Eric Kearsley, Captain, USN
Director
Uniformed Services University of
the Health Sciences
Armed Forces Radiobiology
Research Institute
8901 Wisconsin Avenue
Bethesda, MD 20889-5145

Dear Capt. Kearsley:

This refers to your license amendment request. Enclosed with this letter is the amended license. Authorizations to possession and use cobalt 60, and cesium 137 sources, that were inadvertently omitted from Amendment No. 44 are restored. We apologize for any inconvenience these omissions may have caused.

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) 337-5093 or 5239, so that we can provide appropriate corrections and answers.

Thank you for your cooperation.

Sincerely,

**ORIGINAL SIGNED BY:
JOHN D. KINNEMAN**

John D. Kinneman, Chief
Nuclear Materials Safety Branch 2
Division of Nuclear Materials Safety

License No. 19-08330-02
Docket No. 030-04545
Control No. 124046

Enclosure:
Amendment No. 45

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E. Kearsley
Uniformed Services University

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DOCUMENT NAME: R:\WPS\MLTR\L1908330.02

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

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| OFFICE | DNMS/RI | <input checked="" type="checkbox"/> N | DNMS/RI | <input checked="" type="checkbox"/> N | | | |
| NAME | SLodhi | | Johneman | | | | |
| DATE | 02/12/97 | | 02/12/97 | | 02/ /97 | | 02/ /97 |

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ARMED FORCES RADIOBIOLOGY RESEARCH INSTITUTE

8901 WISCONSIN AVENUE
BETHESDA, MARYLAND 20889-5603

605.02

26 February 1997

030-04545

Mr. Sattar Lodhi
USNRC Region I, Mail Control 124045
475 Allendale Road
King of Prussia, PA 19406

ref: License 19-08330-02, Amend.#44
Docket 030-04545

Dear Mr. Lodhi,

Item 6T of the above referenced license authorizes possession of 160 grams of Plutonium-239 in the form of a PuBe sealed source.

Please amend the referenced license to delete item 6T from the list of authorized materials.

We have transferred possession and ownership of the PuBe source, Serial No. MRPuBe 255, to the U.S. Department of Energy (DOE) through the Los Alamos National Laboratory PuBe Recovery Program.

If there are questions regarding this request, please contact David McKown at (301) 295-1285.

Thank you for your prompt attention to this matter.

for Curtis Pearson Col USAF

E. KEARSLEY
CAPT, MSC, USN
Director

124046

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ARMED FORCES RADIOBIOLOGY RESEARCH INSTITUTE

8901 WISCONSIN AVENUE
BETHESDA, MARYLAND 20889-5603

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605.02
29 January 1997

Mr. Sattar Lodhi
USNRC Region I, Mail Control 124046
475 Allendale Road
King of Prussia, PA 19406

Dear Mr. Lodhi,

Please refer to your recent telephone conversation with Mr. David McKown of AFRRI, regarding the inadvertent omission of Cobalt-60 and Cesium-137 sealed sources from the list of authorized materials specified in amendment No. 44 of our byproduct material license 19-08330-02, Docket 030-04545. We did not request the deletion of these sources.

We request that our license be amended to retain Cobalt-60 and Cesium-137 sealed sources with the same possession limits previously authorized (ref. Amendment No. 43, items 6b, 7b, 8b, and 6c, 7c, 8c, respectively). For consistency, the Cobalt-60 possession limit of 4 curies previously authorized in item 8b may be stated as not to exceed 4 curies per source and 4 curies total.

Additionally, we request that condition 11.A of our license be amended to designate Colonel Curtis W. Pearson as Chairman of the Radionuclide and X-ray Safety Committee. His resume is attached for your review. Col. Pearson is a senior member of the Director's Office staff and has extensive experience in medical program administration. In accordance with item #7.3 of our license renewal application dated January 31, 1994, the Director's representative may also serve as Chairman.

If there are questions regarding this request, please contact David McKown at (301) 295-1285.

Thank you for your prompt attention to this matter.

Attachment:
as stated

E. KEARSLEY
CAPT, MSC, USN
Director

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124046
JAN 10 1997

CURRICULUM VITAE

Curtis W. Pearson
Colonel, USAF, MSC

Current Position: Deputy Director for Administration
Armed Forces Radiobiology Research Institute (AFRRI)
Bethesda, MD 20889-5603

Academic Training:

1969 BBA, Pacific Lutheran University, Tacoma, WA
1970 MBA, University of Oregon, Eugene, OR

Military Training:

1967 - 1969 Air Force ROTC, University of Puget Sound, Tacoma, WA
1970 Health Services Administration, Technical Training Course, Sheppard AFB, TX
1974 Squadron Officer's School, Maxwell AFB, AL
1979 Air Command and Staff College (via correspondence), Elmendorf AFB, AK
1982 Combat Casualty Care Course, FT Sam Houston, TX
1984 Air War College (via seminar) Sheppard AFB, TX
1986 National Security Management (via correspondence), Kunsan AB, Republic of Korea
1996 Medical Effects of Ionizing Radiation, Bethesda, MD

Professional Experience:

1971-1973 Medical Supply Officer and Resource Management Officer,
USAF Hospital, Grand Forks AFB, ND
1973-1977 Patient Affairs Officer and Resource Management Officer,
USAF Regional Hospital, Fairchild AFB, WA

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|--------------|---|
| 1977-1980 | Assistant Administrator, Hospital Services and Assistant Administrator, Patient Affairs, USAF Hospital Elmendorf AFB, AK |
| 1980-1984 | Instructor, Health Services Administration and Chief, Automated Source Data Collection Branch, USAF School of Healthcare Sciences, Sheppard AFB, TX |
| 1984-1986 | Administrator, USAF Clinic, McClellan AFB, CA |
| 1986-1987 | Administrator, 8TFW Hospital, Kunsan AB, Korea |
| 1987-1989 | Operation's Officer, Combat Casualty Care Course, FT Sam Houston, TX |
| 1989-1992 | Chief, Health Education and Training Division, HQ Air Training Command, Randolph AFB, TX |
| 1992-1993 | Commander, 7217ABGP Clinic, Ankara Air Station, Turkey |
| 1993-1995 | Associate Administrator, Clinical Support, Wilford Hall Medical Center, Lackland AFB, TX |
| 1995-Present | Deputy Director for Administration, Armed Forces Radiobiology Research Institute, Bethesda, MD |

Certification:

1987 Fellow, American College of Healthcare Executives

Professional Affiliations:

American College of Healthcare Executives

DNMS TELEPHONE CONVERSATION RECORD

Person Called: David McKown, RSO **Phone No.:** (301) 295 1285
Person Calling: Sattar Lodhi **Date:** 1/8/97
Facility Name: Uniformed Services Univ.
of the Health Sciences. **Time:** 2:30 p.m.
License No. 19-08330-02 **Docket No.** 030-04545

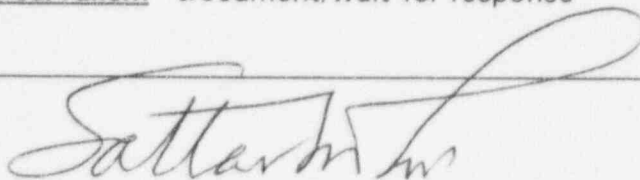
Subject: Additiona information

Summary: I called Dr. McKown to request maximum activity of Co-60 sources. The license authorizes 4 curies of Co-60 sealed source. i asked him to provide us the maximum activity per source. During our discussions he mentioned that they are planning to increase the activity of Co-60 source to about 10 curies and also delete the Pu-Be source from their license because they have transferred the source to another licensee. He also stated that a new chairperson of RSC is being appointed.

He requested that the action be put on hold until they provide the additional information about the changes in a letter. He expects that letter to be sent before the end of next week.

Action Required/Taken: Document/wait for response

Signature:



Mail Control No. 124046



ARMED FORCES RADIOBIOLOGY RESEARCH INSTITUTE

8901 WISCONSIN AVENUE
BETHESDA, MARYLAND 20889-5603

030-04545

605.02

6 December 1996

Mr. John McGrath
USNRC Region I
475 Allendale Road
King of Prussia, PA 19406

Dear Mr. McGrath,


In accordance with previous NRC approval, Mr. David M. McKown has served since 5 August 1996 as acting Radiation Safety Officer (RSO) for our NRC licenses 19-08330-02 and 19-08330-03, until the RSO vacancy could be filled.

This letter requests NRC approval of our appointment of Charles B. Galley, CAPT, MSC, USN, as the Radiation Safety Officer for NRC licenses 19-08330-02 and 19-08330-03. His resume is attached for your review.

CAPT Galley has extensive training and experience in radiological health physics and radiation safety program management for use of both radioactive materials and industrial radiation source facilities. He is a certified health physicist (comprehensive) and has previously served as RSO for NRC licensed activities at other institutions.

Particularly note that he has recently rotated from the position of Head, Radiation Sources Department at AFRRI, which oversees the operation, maintenance, and use of the Reactor, LINAC, and the Cobalt Irradiation Facility, NRC license 19-08330-03. He has also served as Chairman, Reactor and Radiation Facility Safety Committee (RRFSC) which oversees the safety and training aspects of the cobalt facility. Experience in these positions has included a direct working involvement with cobalt facility operations as well as on the job training and self study of the 10 CFR 36 regulations and license requirements.

Thank you for your prompt attention to this request.


E. KEARSLEY
CAPT, MSC, USN
Director

Attachment:
as stated

OFFICIAL RECORD COPY ML 10

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DEC 23 1996

BIOGRAPHY

Charles B. Galley, CAPT, MSC, USN
Head, Radiation Sources Department
Armed Forces Radiobiology Research Institute

CAPT Galley has a BS degree in Biology and a MS Degree in Radiobiology. He has served in support of nuclear programs throughout the US Navy for 30 years. He has performed as a Radiation Safety Officer for nuclear submarine repair facilities on two occasions. He served as the Radiation Safety Officer for a 500 bed naval hospital licensed by the Nuclear Regulatory Commission to perform diagnostic and therapeutic nuclear medicine procedures, brachytherapy, and external beam radiotherapy. He is certified by the American Board of Health Physics and has directed both large scale personnel dosimetry programs and industrial radiation source usage programs. CAPT Galley has trained Navy personnel in NBC Warfare Defense, Disaster Preparedness, Radiation Safety, Health Physics, Radiobiology and Personnel Decontamination. He has served as a member of the US Navy Radiation Safety Committee which controls the use of radionuclides and radiation producing machines throughout the whole Navy.

CURRICULUM VITAE

Charles B. Galley
CAPT, MSC, USN

Current Position: Radiation Safety Officer
Armed Forces Radiobiology Research Institute
(AFRRI) Bethesda, MD 20889-5603

Academic Training:

1966 B.S., Biology, Duquesne University, Pittsburgh, PA
1973 M.S. Radiology and Radiobiology, Colorado State University, Fort Collins, CO

Military Training:

1966 Officer Candidate School, R.I.
1967 Nuclear, Biological and Chemical Defense (NBCD) Afloat, Navy Damage Control Training Center, Philadelphia, PA
1969 Radiological Safety Officer, U.S. Army Chemical Center and School, Ft McClellan, AL
1984 Senior Medical Readiness and Contingency Course, SMRCC, NSHS, Bethesda, MD
1986 Senior Officer Nuclear Accident Course, Kirtland AFB, Albuquerque, NM
1987 Nuclear Weapon Orientation Advanced, Kirtland AFB, Albuquerque, NM

Professional Experience:

1967-1969 Radiation Health Officer, USS Hunley (AS-31)
1969-1972 Instructor/Executive Officer, Naval Training Unit, USA Chemical Center and School, Ft McClellan, AL
1973-1974 Researcher Immunologist, Armed Forces Radiobiology Research Institute, Bethesda, MD
1974-1978 Radiation Health Officer, Naval Submarine Support Facility, New London, Groton, CT
1978-1982 Instructor/Assistant Officer in Charge, Naval

Undersea Medical Institute, Groton, CT

C. B. Galley, Curriculum Vitae, Page 2

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|----------------------|--|
| 1978-1982 | Radiation Safety Officer, Naval Submarine Medical Center, Groton, CT |
| 1978-1982 | Radiation Safety Officer, Naval Submarine Medical Research Laboratory, Groton, CT |
| 1982-1986 | Head, Radiation Safety Department, National Naval Medical Center, Bethesda, MD |
| 1982-1986 | Head, Navy Dosimetry Center, National Naval Medical Center, Bethesda, MD |
| 1986-1989 | Radiological Controls Program Director (06GN), Naval Sea Systems Command, Washington, DC |
| 1986-1989 | Member, Navy Radiation Safety Committee, Chief of Naval Operations, Washington, DC |
| 1989-1996 (10/15) | Head, Radiation Sources Department, Armed Forces Radiobiology Research Institute, Bethesda, MD |

Certification:

1985 Diplomate, American Board of Health Physics

Professional Affiliations:

Health Physics Society
Baltimore-Washington Health Physics Society
American Board of Health Physics

BETWEEN:

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: PROGRAM CODE: 03610
: STATUS CODE: 0
: FEE CATEGORY: EX 3L 1D 2C
: EXP. DATE: 20040731
: FEE COMMENTS: 170.11(A)(4)
: DECOM FIN ASSUR REQD: Y

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A. REGION

AMOUNT: _____
CHECK NO.: _____

SIGNED
DATE

Brown, R. J.
12/27/96

AMENDMENT
RENEWAL
LICENSE

3. OTHER

SIGNED
DATE

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