

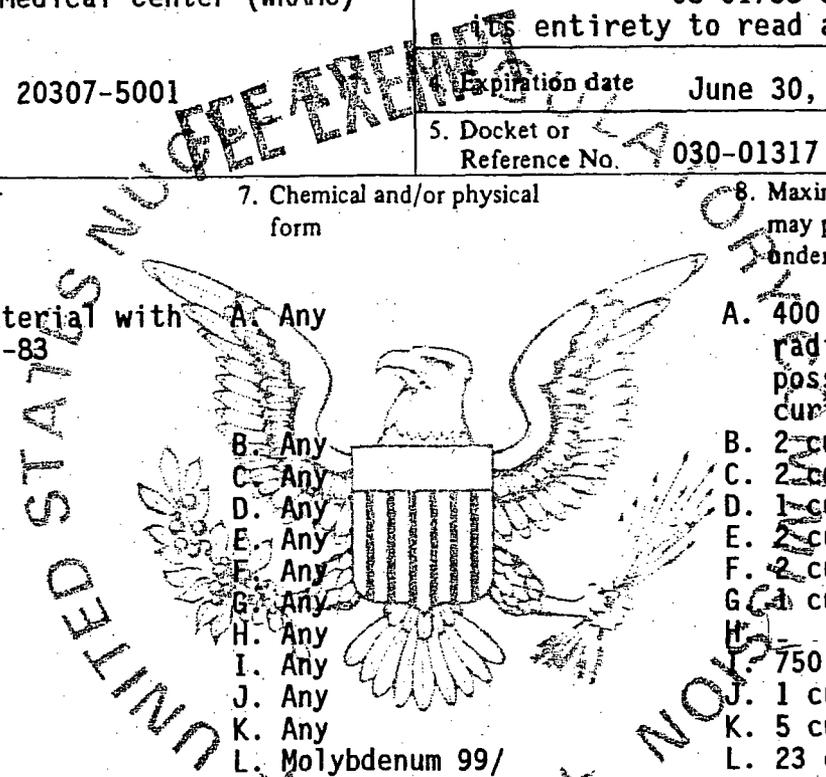
MATERIALS LICENSE

Amendment No. 66

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, 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>Licensee</p> <p>1. Department of the Army Walter Reed Army Medical Center (WRAMC)</p> <p>2. Washington, D.C. 20307-5001</p>	<p>In accordance with the application dated January 4, 1993, 3. License number 08-01738-02 is amended in its entirety to read as follows:</p>
	<p>Expiration date June 30, 1999</p> <p>5. Docket or Reference No. 030-01317</p>

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 numbers 1-83	A. Any	A. 400 millicuries of each radionuclide with a total possession limit of 26 curies
B. Iodine 131	B. Any	B. 2 curies
C. Xenon 133	C. Any	C. 2 curies
D. Krypton 85	D. Any	D. 1 curie
E. Phosphorus 32	E. Any	E. 2 curies
F. Carbon 14	F. Any	F. 2 curies
G. Iodine 125	G. Any	G. 1 curie
H. Iridium 192	H. Any	H. 750 millicuries
I. Chromium 51	I. Any	J. 1 curie
J. Sulfur 35	J. Any	K. 5 curies
K. Hydrogen 3	K. Any	L. 23 curies
L. Molybdenum 99	L. Molybdenum 99/ Technetium 99m Generators	
M. Technetium 99m	M. Any	M. 23 curies
N. Strontium 90	N. Sealed sources	N.
O. Cesium 137	O. Sealed sources	O.
P. Gadolinium 153	P. Sealed sources	P.
Q. Iodine 125	Q. Sealed sources (3M Company seeds)	Q. 500 millicuries
R. Iodine 125	R. Sealed sources (Norland Inst. Co., Model 178A591A or AECL Models C235 or C324, or Amersham Corp. Model IMC.P2)	R. 4 sources, not to exceed 300 millicuries each



Information in this record was deleted
in accordance with the Freedom of Information
Act exemptions 2 + 6
2006-0238

Ex 2

KK/JO

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License number

08-01738-02

Docket or Reference number

030-01317

Amendment No. 66

(Items 6., 7. & 8. continued)

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

S. Cesium 137
T. Cobalt 60
U. Americium 241
V. Americium 241

S. Sealed sources
T. Sealed sources
U. Any
V. Sealed sources

S.
T.
U. 100 microcuries
V.
}

W. Nickel 63
X. Iodine 129
Y. Thorium
Z. Uranium
AA. Cesium 137

W. Sealed sources and foils
X. Sealed sources
Y. Any
Z. Any
AA. Sealed sources

W. 1 curie
X. 1 curie
Y. 5 kilograms
Z. 50 kilograms
AA.
}

BB. Americium 241
CC. Cesium 137

BB. Sealed sources
CC. Sealed source

BB.
CC.
}

DD. Uranium depleted in Uranium 235

DD. Plated Metal

DD. 400 Kilograms

9. Authorized use

A. through CC. Medical diagnosis, therapy and research in humans in accordance with any applicable Food and Drug Administration (FDA) requirements. Research and development as defined in 10 CFR 30.4, including animal studies; instrument calibration; student instruction.

DD. Shielding

CONDITIONS

10. Location of use: Walter Reed Army Medical Center, Washington, D. C.; WRAMC Forest Glen Section and Annex, Silver Spring, Maryland; Walter Reed Army Institute of Research Animal Holding Facility, Fort Meade, Maryland; U.S. Army Medical Laboratory, WRAMC Department of Pathology, Fort Meade, Maryland; and U.S. Army Institute of Dental Research Facility, Fort Meade, Maryland; Rickman Building, 13 Taft Court, Rockville, Maryland and Gillette Building, 270 Research Center, 1413 Research Boulevard, Rockville, Maryland.

11. A. Licensed material shall be used by, or under the supervision of, individuals designated in writing by the Radiation Safety Committee, Col. Joan T. Zajtchuk Chairperson.

EX 2

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License number

08-01738-02

Docket or Reference number

030-01317

Amendment No. 66

- B. The use of licensed material in or on humans shall be by a physician, dentist, or podiatrist as defined in 10 CFR 35.2.
 - C. Physicians, dentists, or podiatrists designated to use licensed material in or on humans shall meet the training criteria established in 10 CFR 35, Subpart J and shall be designated in writing by the licensee's Radiation Safety Committee.
 - D. The Radiation Safety Officer for this license is LTC William B. Johnson.
12. In addition to the possession limits in Item 8, the licensee shall further restrict the possession of licensed material at a single location to quantities below the limits specified in 10 CFR 30.72 which require consideration of the need for an emergency plan for responding to a release of licensed material.
13. Notwithstanding the requirements of 10 CFR 35.49(a) and (b), 35.100, 35.200, 35.300, 35.400 and 35.500 the licensee may use for any medical use any byproduct material or reagent kit. The licensee shall possess and use byproduct material for medical use in accordance with the prescriptive and performance criteria in the other sections of 10 CFR 35. This does not relieve the licensee from complying with applicable U.S. Food and Drug Administration (FDA) and other Federal and State requirements.
14. 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 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.
15. The licensee shall conduct a physical inventory every three months to account for all sealed sources and devices containing licensed material received and possessed pursuant to 10 CFR 35.59, 35.400 and 35.500 and every six months for all other sealed sources and devices.
16. 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.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License num.

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- 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 the 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.
17. 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	08-01738-02
Docket or Reference number	030-01317
Amendment No. 66	

18. The licensee is authorized to hold radioactive material with a physical half-life of less than 65 days and Sulfur 35, Cobalt 58, Iridium 192, Scandium 46, 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.
19. Experimental animals, or the products from experimental animals, that have been administered licensed materials shall not be used for human consumption.
20. The licensee shall possess and use byproduct material for human research in accordance with the prescriptive and performance criteria in all sections of 10 CFR Part 35 except sections 35.49(a) and (b), 35.100, 35.200, and 35.300.
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. 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.
23. 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/application dated September 9, 1993 and October 29, 1993.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License number

08-01738-02

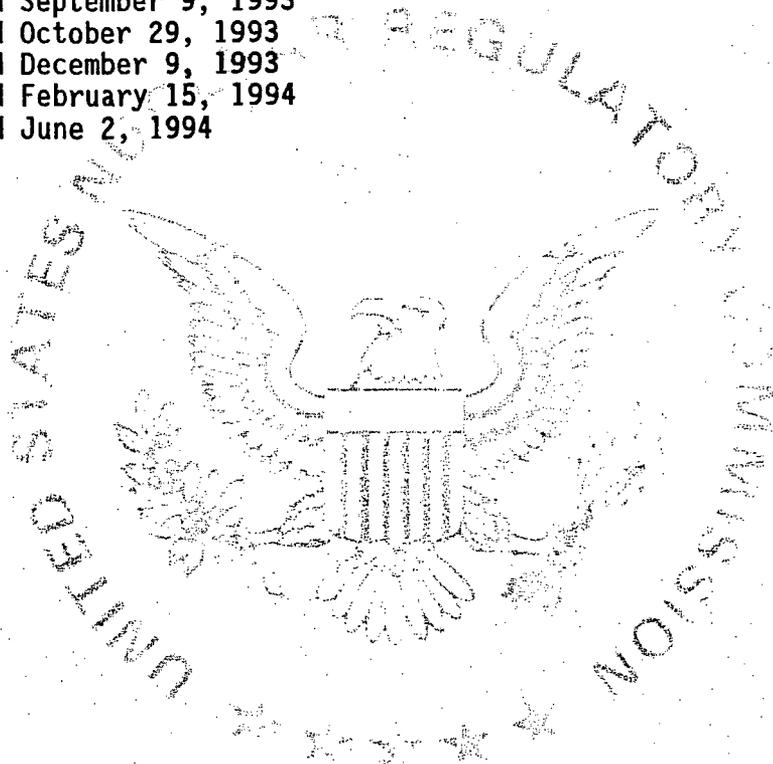
Docket or Reference number

030-01317

Amendment No. 66

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 any enclosures, listed below, except for minor changes in the medical use radiation safety procedures as provided in 10 CFR 35.31. 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 June 21, 1993
- B. Letter dated September 9, 1993
- C. Letter dated October 29, 1993
- D. Letter dated December 9, 1993
- E. Letter dated February 15, 1994
- F. Letter dated June 2, 1994



Date

JUN 14 1994

For the U.S. Nuclear Regulatory Commission
Original Signed By:

By Thomas K. Thompson

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

JUN 14 1994

License No. 08-01738-02
Docket No.: 030-01317
Control No. 117725

Department of the Army
ATTN: DASG-PSP-E(COL Peter Myers)
5109 Leesburg Pike
Washington, DC 20307-5001

Dear Colonel Myers:

Please review the enclosed document carefully and be sure that you understand all conditions. If there are any errors or questions, please notify the U.S. Nuclear Regulatory Commission, Region I office, the Licensing Assistance Section, (610) 337-5093 or 5239, so that we can provide appropriate corrections and answers.

Please be advised that your license expires at the end of the day, in the month, and year stated in the license. Until your license is terminated, you must conduct your program involving byproduct materials in accordance with the conditions of your NRC license, representations made in your license application, and NRC regulations. In particular, note that you must:

1. Operate in accordance with NRC regulations 10 CFR Part 19, "Notices, Instructions and Reports to Workers; Inspections," 10 CFR Part 20, "Standards for Protection Against Radiation," 10 CFR Part 35, "Medical Use of Byproduct Material," and other applicable regulations.
2. Notify NRC, in writing, within 30 days:
 - a. when an authorized user, Radiation Safety Officer, Teletherapy Physicist, or Medical Physicist permanently discontinues performance of duties under the license or has a name change; or
 - b. when the licensee's mailing address changes (no fee is required if the location of byproduct material remains the same).
3. In accordance with 10 CFR 30.36(b) and/or license condition, notify NRC, promptly, in writing, and request termination of the license when you decide to terminate all activities involving materials authorized under the license.
4. In accordance with 10 CFR 35.13, request and obtain a license amendment before you:
 - a. receive or use byproduct material for a clinical procedure permitted under Part 35 but not permitted by your license issued pursuant to this Part;
 - b. permit anyone, except a visiting authorized user described in 10 CFR 35.27, to work as an authorized user under the license;

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ML 10

- c. change Radiation Safety Officers, Teletherapy Physicists or Medical Physicists;
 - d. order byproduct material in excess of the amount, or radionuclide, or form different than authorized on the license;
 - e. add or change the areas of use, or address or addresses of use identified in the license application or on the license.
5. Receive written approval from the NRC prior to any change ownership of your organization in accordance with 10 CFR 30.34(b).
 6. Submit a complete renewal application with proper fee or termination request at least 30 days before the expiration date of your license. You will receive a reminder notice approximately 90 days before the expiration date. Possession of byproduct material after your license expires is a violation of NRC regulations. A license will not normally be renewed, except on a case-by-case basis, in instances where licensed material has never been possessed or used.

In addition, please note that NRC Form 313 requires the applicant, by his/her 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.

You will be periodically inspected by the NRC. Failure to conduct your program in accordance with NRC regulations, license conditions, and representations made in your license application and supplemental correspondence with NRC will result in enforcement action against you. This could include issuance of a notice of violation, or imposition of a civil penalty, or an order suspending, modifying or revoking your license as specified in the General Policy and Procedures for NRC Enforcement Actions, 10 CFR Part 2, Appendix C.

Since serious consequences to employees and the public can result from failure to comply with NRC requirements, prompt and vigorous enforcement actions will be taken when dealing with licensees who do not achieve the necessary meticulous attention to detail and the high standard of compliance which NRC expects of its licensees.

Thank you for your cooperation.

Sincerely,

Original Signed By:
Thomas K. Thompson

Thomas K. Thompson
Nuclear Materials Safety Branch
Division of Radiation Safety
and Safeguards

Department of the Army

-3-

Enclosures:

1. Amendment No. 66

cc:

Walter Reed Army Medical Center (WRAMC)
ATTN: Major General Ronald R. Blanck
Commanding Officer
Washington, DC 20307-5001

RT
DRSS:RI
Tkthompson

6/14/94



DEPARTMENT OF THE ARMY
WALTER REED ARMY MEDICAL CENTER
WASHINGTON, DC 20307-5001

MS6
P-7



REPLY TO
ATTENTION OF:

June 2, 1994

Health Physics Office

SUBJECT: Additional Information for Review of Renewal of U.S.
Nuclear Regulatory Commission License No. 08-01738-02, mail
control No. 117725

Nuclear Materials Safety Branch
Division of Radiation Safety and Safeguards
ATTENTION: Mr. Thomas K. Thompson
U.S. Nuclear Regulatory Commission, Region I
475 Allendale Road
King of Prussia, Pennsylvania 19406-1415

QMP
Removed

Dear Mr. Thompson:

In response to our phone conversation of May 25, 1994,
pertaining to the renewal of License No. 08-01738-02, Control No.
117725, the following additional information is provided:

1. A memorandum dated 13 May 1994, was forwarded through
Army channels requesting that NRC License No. 08-01738-02 and NRC
License No. 08-01738-03 be amended to approve myself as the
Radiation Safety Officer on both licenses. Headquarters,
Department of the Army, Office of the Surgeon General, Falls
Church, VA, forwarded the request to the NRC, Region I, per
memorandum dated June 1, 1994. The memorandums with enclosures
are provided as you requested as enclosure 1.

2. We have reviewed the provisions of 10 CFR 30.32(i). The
limits for all conditions of 10 CFR 30.72, Schedule C have been
reviewed, and under the current and requested license limits we
do not exceed any specific activity limits. In addition, the sum
of our license limits for any isotope divided by the Schedule C
appropriate activity limit does not exceed 1. This would
indicate that our license is exempt from the provisions of 10 CFR
30.32(i). This calculation will remain on file at the Health
Physics Office.

3. The Nuclear Medicine Service has revised the Quality
Management Program (QMP), and the revised QMP from the Nuclear
Medicine Service dated March 22, 1994, is provided as
enclosure 2. The Radiation Oncology Service QMP dealing with
brachytherapy was extracted from the Radiation Oncology Service
Policy and Procedure Manual and is provided as enclosure 3.

4. During our phone conversation on May 25, 1994, you
indicated a new NRC policy precluded issuing a blanket statement

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117725
JUN - 6 1994

for the decay-in-storage of any radioisotope with a half-life of less than 90 days, as is currently listed as Condition 18 of our license. As requested we submit the following information to support the decay-in-storage of radioactive material:

a. In addition to authorization to hold radioactive material with a half-life of less than 65 days for decay-in-storage before disposal in ordinary trash, we request approval for decay-in-storage for the following radioactive materials: cobalt-58, iridium-192, sulfur-35, and scandium-46. These radioactive materials all have half-life of greater than 65 days, but less than 90 days, and are currently authorized on our license for decay-in-storage.

b. Justification for decay-in-storage. This request will support reducing the volume of low level radioactive waste, which at some point in the future must be disposed of as low level radioactive waste. Sulfur-35, cobalt-58, iridium-192, and scandium-46, account for a significant volume of the low level radioactive waste generated at this facility. Allowing decay-in-storage, and then disposing of this waste after proper monitoring in ordinary trash would significantly reduce our volume of low level radioactive waste. With the unavailability of any low level radioactive waste site, all waste classified as radioactive waste must be stored on-site. Allowing us to decay the waste to background levels frees up space to accommodate radioactive waste that must be stored until the Pennsylvania low level radioactive waste site is operational. It will also significantly reduce the future costs incurred to dispose of low level radioactive material at Walter Reed Army Medical Center. As you know, the date that the Pennsylvania site will open is uncertain. Decay-in-storage of this waste will insure that we have sufficient space to hold radioactive waste prior to the opening of the Pennsylvania low level burial grounds. This request supports the mandates of Congress, the States, and U.S. Army policy to minimize the volume of low level radioactive waste generated, while adhering to strict safety standards that protect the general population and the environment.

I hope you will find the above information sufficient to complete your processing of our application. Any additional questions or comments pertaining the renewal of our license should be directed to the undersigned at (301) 427-5161.

Enclosures
as


WILLIAM B. JOHNSON
Lieutenant Colonel, U.S. Army
Chief, Health Physics Office



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
OFFICE OF THE SURGEON GENERAL
5100 LEESBURG PIKE
FALLS CHURCH, VA 22041-3258



June 01, 1994

Preventive Medicine
Consultants Division

US Nuclear Regulatory Commission
Region I
475 Allendale
King of Prussia, Pennsylvania 19406

Dear Sir:

Enclosed are two copies of a request to amend Byproduct
Material License Number 08-01738-02, Walter Reed Army Medical
Center, Washington, DC, by appointing Lieutenant Colonel William
B. Johnson as Radiation Safety Officer.

Recommend approval.

Sincerely,

Peter H. Myers
Colonel, U.S. Army
Radiological Hygiene Consultant

Enclosure

CF: HQ, USAEHA, ATTN: HSHB-MR-H, APG, MD 21010-5422
HQ, USWRAMC, ATTN: HSHL-HP, Wash, DC 20307-5001 (wo/encls)

Encl 1



DEPARTMENT OF THE ARMY
WALTER REED ARMY MEDICAL CENTER
WASHINGTON, DC 20307-5001



REPLY TO
ATTENTION OF:

HSCL-HP (385-11)

13 May 1994

MEMORANDUM THRU

Commander, U.S. Army Health Services Command, ATTN: HSCL-P, Fort
~~Sam Houston, Texas 78234-6000~~

MWM
26 MAY 94

HQDA (SGPS-PSP-E), 5109 Leesburg Pike, Falls Church, VA 22041-3258

FOR U.S. Nuclear Regulatory Commission, Region I, Nuclear
Safety Section A, 475 Allendale Road, King of Prussia,
PA 19406

SUBJECT: Amendment of US Nuclear Regulatory Commission Licenses
No. 030-01317 and No. 030-06895

1. Request that NRC Licenses ⁰⁸⁻⁰¹⁷³⁸⁻⁰² 030-01317 and ⁰⁸⁻⁰¹⁷³⁸⁻⁰³ 030-06896 be amended to reflect a change in the Radiation Safety Officer from CPT Mark A. Melanson to LTC William B. Johnson. LTC Johnson has been assigned as the Chief, Health Physics Office at Walter Reed Army Medical Center since 9 May 1994.
2. A Training and Experience Form and a Curriculum Vitae for LTC Johnson are attached (Enclosures 1 and 2).
3. POC for this matter is Mr. David W. Burton or LTC Johnson @ (301)-427-5104/5107.

FOR THE COMMANDER:

2 Encls

Earl S. Newsome III
EARL S. NEWSOME III
LTC, MS
Executive Officer

TRAINING AND EXPERIENCE
AUTHORIZED USER OR RADIATION SAFETY OFFICER

1. NAME OF AUTHORIZED USER OR RADIATION SAFETY OFFICER WILLIAM B. JOHNSON, Ph.D.	2. STATE OR TERRITORY IN WHICH LICENSED TO PRACTICE MEDICINE: NOT APPLICABLE
---	---

3. CERTIFICATION

SPECIALTY BOARD A	CATEGORY B	MONTH & YEAR CERTIFIED C
NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE

4. TRAINING RECEIVED IN BASIC RADIOACTIVE HANDLING TECHNIQUES

FIELD OF TRAINING A	LOCATION AND DATE(S) OF TRAINING B	TYPE & LENGTH OF TRAINING	
		LECTURE/ LABORATORY COURSES (Hours) C	SUPERVISED LABORATORY EXPERIENCE (Hours) D
a. RADIATION PHYSICS AND INSTRUMENTATION	1) Univ of North Carolina, Chapel Hill, NC, 1980-1983 (3 years) 2) Tulane, New Orleans, LA, 1976 (1 year) 3) Ft. Belvoir, VA, 1970-1971 (1 year)	80 60 168	92
b. RADIATION PROTECTION	1) Reference 1 above 2) Reference 3 above	140 80	60 120
c. MATHEMATICS IN THE USE AND MEASUREMENT OF RADIOACTIVITY	1) Reference 1 above 2) Reference 3 above	125 60	
d. RADIATION BIOLOGY	1) Reference 1 above 2) Reference 3 above	40 40	
e. RADIOPHARMACEUTICAL CHEMISTRY	1) Reference 1 above 2) Reference 3 above	200	60 20

5. EXPERIENCE WITH RADIATION. (Actual use of Radioisotopes or Equivalent Experience)

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE GAINED	DURATION OF EXPERIENCE	TYPE OF USE
SM-1 Nuclear Power Reactor	1000 KW	SM-1, Ft. Belvoir, VA	1971 (1 year)	Health Physics Surveys; Reactor operations; Calibration

5. EXPERIENCE WITH RADIATION.(Actual use of Radioisotopes or Equivalent Experience)				
ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE GAINED	DURATION OF EXPERIENCE	TYPE OF USE
²³⁵ U ²³⁸ U ²³⁹ Pu Pu-Be ²⁴¹ Am ¹³⁷ Cs ³ H	216 gm unsealed & soln. sources 3 gm unsealed source 43 gm, liquid sources 3 Ci, Sealed 600 mCi, Sealed 120 Ci, Sealed 110 Ci, Sealed	U.S. Army Environmental Hygiene Agency Aberdeen Proving Ground, MD NRC Byproduct Material License	1973-1974 (1 year)	Health Physics Surveys; Alternate RSO; Calibration
Atomic No. 3-83 ³ H ¹³¹ I ¹²⁵ I ¹³ C	5 mCi each 10 mCi, liquid 10 mCi, liquid 1 Ci, liquid 1 Ci, liquid	US Army Medical Lab Ft. Sam Houston, TX Radiation Safety Officer NRC Byproduct Material License (Medical)	1974-1975 (1 year)	RSO, RIA kits, Iodinations, Health Physics Surveys; Wet Chemistry procedures
⁹⁹ Mo/ ^{99m} Tc Generator	2 Ci	North Carolina Memorial Hospital Chapel Hill, NC	1982 (1 month)	Clinical Training
Atomic No. 3-83 10 CFR 35 Gp I-II Gp III Gp IV-V ¹³³ Xe ¹³⁷ Cs ¹⁵³ Gd	25 mCi each As needed 3 Ci each As needed 40 mCi 131 Ci 2 Ci	Dwight D. Eisenhower Army Medical Center, Fort Gordon, GA Radiation Safety Officer for Hybrid Broad Scope NRC Materials License (Medical) USNRC No. 10-12044-03	May 1983-June 1989 (6 years)	RSO, Radiation Safety Surveys, Medical Physics Surveys, Calibration
Atomic No. 3-83 ¹⁴ C, ³ H, ⁹⁹ Mo, ^{99m} Tc ³² P, ¹²⁵ I ¹³⁷ Cs	15 Ci total, ≤ 200 mCi each 5 Ci each, any form 1 Ci each, any form 4200 Ci, sealed source	Uniformed Services University of the Health Sciences, Bethesda, MD Radiation Safety Officer for Broad Scope Type A NRC Material License (Medical) USNRC No. 19-23344-01	May 1989-June 1992 (3 years)	RSO, Health Physics Surveys, Calibration

5. EXPERIENCE WITH RADIATION.(Actual use of Radioisotopes or Equivalent Experience)				
ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE GAINED	DURATION OF EXPERIENCE	TYPE OF USE
²³⁵ U ²³⁸ U ²³⁹ Pu Pu-Be ²⁴¹ Am ¹³⁷ Cs ³ H	216 gm unsealed & soln. sources 3 gm unsealed source 43 gm, liquid sources 3 Ci, Sealed 600 mCi, Sealed 120 Ci, Sealed 110 Ci, Sealed	U.S. Army Environmental Hygiene Agency Aberdeen Proving Ground, MD NRC Byproduct Material License	June 1992 - May 1994 (2 years)	Health Physics Surveys; Principle User, Member of the Radiation Control Committee

CURRICULUM VITAE

LTC WILLIAM B. JOHNSON, Ph.D, Medical Service Corps, US Army

Address:

Residence:

Work:

Walter Reed Army Medical Center
Chief, Health Physics Office
Washington D.C. 20307-5001
Phone: (301) 427-5104

ACADEMIC AREAS OF INTEREST:

Health Physics, Medical Physics, Optimizing Medical Images, Quality Control in Radiology, Computers, Public Health

EDUCATION AND TRAINING:

CIVILIAN TRAINING:

University of North Carolina, Chapel Hill, NC, Ph.D., Radiological Hygiene, []

Tulane School of Public Health and Tropical Medicine, New Orleans, LA, MPH, Environmental Health, 1976.

Iowa State University, Ames, IA, BS, Mathematics, []

Medical X-Ray Protection Course, USPHS, Rockville, MD, 2 weeks, 1973.

Ionizing and Nonionizing Radiation in Medicine, University of Pennsylvania, Philadelphia, PA, 1 week, 1979.

Electronic Imaging in Medicine, University of Texas at San Antonio, TX, 1 week, 1983.

Health Physics Aspects of Nuclear Attack, Health Physics Summer School, Louisiana University, Hammond, LA, 1 week, 1984.

Health Physics In Radiation Accidents, Oak Ridge Associated Universities, Oak Ridge, TN, 1 week, 1985.

MRI Acceptance Testing and Quality Control, The Bowman Gray School of Medicine, Winston-Salem, NC, 1 week, 1988.

International Society for Optical Engineering Medical Imaging V Meeting, San Jose, CA, 1 week, 1991.

Exp

American College of Radiology's Mammographic Image Quality Course: Role of the Medical Physicist, January 1993, 18 CME credits awarded.

MILITARY TRAINING:

Nuclear Power Plant Operator Course (Health Physics Specialty), Ft. Belvoir, VA, 1 year, 1971.

AMEDD (MSC) Officer Basic Course, Ft. Sam Houston, TX, 9 weeks, 1972

AMEDD Officer Advanced Course, Ft. Sam Houston, TX, 24 weeks, 1975.

Command and General Staff Officer Course (Correspondence Option), 1 year, 1987.

Faculty Development Course, Academy of Health Sciences, Ft. Sam Houston, TX, 4 weeks, 1976.

Medical Effects of Nuclear Weapons, Armed Forces Radiobiology Research Institute, Bethesda, MD, 1 week, 1983.

Medical Physics and Military Medicine, US Army Environmental Hygiene Agency, Aberdeen Proving Ground, MD, 1 week, 1983, 1985, 1987, 1988, 1989, 1991, 1993.

TEACHING EXPERIENCE:

1990-1993, Assistant Professor of Preventive Medicine and Biometrics, Uniformed Services University of the Health Sciences, Bethesda, MD.

1977-1979, Instructor, Radiological Physics, Academy of Health Sciences, Ft. Sam Houston, TX.

1977-1979, Assistant Professor of Health Sciences, Baylor University at San Antonio, San Antonio, TX.

1969-1970, High School Teacher (Mathematics), Grant Community High School, Fox Lake, IL.

PROFESSIONAL EXPERIENCE:

1. June 1992 to May 1994, Chief, Health Physics Division, U.S. Army Environmental Hygiene Agency, Aberdeen Proving Ground, MD.

Duties: Leads and manages the Health Physics Division composed of the Medical Health Physics Branch, the Industrial Health Physics Branch and an Administrative Section. Directs the activities of

some 25 professional health physicists in world wide mission of support of U.S. Army Radiation Protection Programs. Support includes complete radiation protection program evaluations for compliance with Federal, Army, and Nuclear Regulatory Commission (NRC) Licenses for Medical and Industrial facilities, medical and industrial x-ray surveys, radiation dose assessments from bioassay data, assistance in preparation of documents to terminate NRC licenses, and conducting verification surveys for NRC License termination. Radiation protection policies are developed for the Army Surgeon General for implementation Army wide. Act as principle user of radioactive materials, supervisor of ¹³⁷Cs irradiator for calibration, and member of the Radiation Control Committee.

2. June 1989 to June 1992, Deputy Director, Environmental Health and Occupational Safety; Chief, Radiation Safety and Radiation Protection Officer, Uniformed Service University of the Health Sciences (USUHS), Bethesda, MD.

Duties: Responsible for the supervision and management of broad scope US Nuclear Regulatory Byproduct Materials License No. 19-23344-01. Supervises health physics personnel in the performance of laboratory radiation protection surveys, personnel dosimetry program, laboratory analysis, and radioactive material control. Provides technical advice to some 350 radiation workers working in about 150 radioisotope laboratories. Teaches in various graduate level courses in Preventive Medicine and Radiology. Provides technical consultation to Director and other Branch Chiefs. Acts as the Director when the Director is absent. Has been designated the Medical Physics Consultant on acquisition and acceptance testing of Computerized Tomography (CT) Systems and Magnetic Resonance Imaging (MRI) Systems for the Army Surgeon General. This CT and MRI mission is world wide.

3. June 1983-June 1989, Chief, Health Physics, Dwight D. Eisenhower Army Medical Center, Ft. Gordon, GA.

Duties: Served as Chief, Health Physics, and Radiation Protection Officer. Responsible for supervision and management of broad scope radiation protection program including management of US Nuclear Regulatory Byproduct Materials License No. 10-12044-03 and Department of Army Radioactive Materials Authorization No. 10-07-81. Served as Regional Consultant to DOD Health Region 10, which includes 9 Army Community Hospitals, and clinics in Panama and Puerto Rico. Performs Technical Surveys of radioactive materials and radiation producing devices to evaluate health hazards and performs medical physics evaluations to optimize imaging. Provides education support to professional staff. Supervises the personnel dosimetry program and performs dosimetry analysis of both radiation workers and patients. Is the Medical Physics Consultant on acquisition and acceptance testing of Computerized Tomography (CT)

Systems and Magnetic Resonance Imaging (MRI) Systems for the Army Surgeon General. This CT and MRI mission is world wide.

4. September 1976 - June 1980, Chief, X-Ray Branch, Academy of Health Sciences, Ft. Sam Houston, TX.

Duties: Programs, plans and supervises overall operation of branch, including performance of 36 instructors and about 430 students annually. Branch is responsible for teaching the x-ray technologist program (radiographic) for the US Army. Also coordinates, plans, and supervises clinical training. Serves as Chairman of X-Ray Specialist Curriculum Committee, and Chairman of Medicine and Surgery Division Physics and Biophysics Committee. Serves as subject matter expert in radiology for Combat Development and Health Care Systems.

5. January 1975 - July 1975, Chief, Health Physics Branch, US Army Environmental Hygiene Agency Regional Activity South, Ft. Sam Houston, TX.

Duties: Conducts radiation protection surveys of US Army installations containing or generating ionizing radiation. Geographical area of support is all states west of the Mississippi River. Also reviews NRC license and DA Authorization applications. Performs technical consultation on radiation safety hazards.

6. March 1974 - December 1974, Chief, Department of Nuclear Medical Sciences, US Army Medical Laboratory, Ft. Sam Houston, TX.

Duties: Supervises laboratory procedures and techniques of radiation biology, radiochemistry, and biophysics for regional reference laboratory. Geographic area of support includes United States, Pacific Region, Korea, and Panama. Supervises radiation detection measurements, preparation and analysis of radioisotopes in support of diagnostic and other clinical procedures. Provides support on environmental surveillance. Advises on radiological hygiene matters to prevent unnecessary exposure of personnel to ionizing radiation. Performs duty of Chairman, Radioisotope Committee, and Radiological Protection Officer. Manages all aspects of AEC License No. 42-06316-01, and Department of Army Authorization for Radioactive Materials. Performs Health Physics surveys and overall monitoring of all Laboratory Departments engaged in work involving radioactive material.

7. January 1973 - February 1974, Survey Officer, Health Physics Division, US Army Environmental Hygiene Agency, Aberdeen Proving Ground, MD.

Duties: Reviews AEC license and Department of Army Authorizations applications as well as drafts Army directives and technical publications pertaining to radiological health; evaluates proposed

in-system items containing or generating ionizing radiation; makes on-site surveys of Army diagnostic, industrial, and therapeutic x-ray facilities, radioactive sources, accelerators, human use of radioisotopes and other sources of ionizing radiation; prepares reports with recommendations for corrective action; assists in training activities. Performs as Alternate Radiological Protection Officer. This requires preparation and maintenance of records and reports on receipt, issue, use, inventory, storage, and disposal of radioactive materials. Performs health physics surveys of all agency divisions engaged in working with radioactive materials.

8. September 1972 - October 1972, Health Physics Technician, SM1 Nuclear Power Plant, Ft. Belvoir, VA.

Duties: Conducts radiological surveys, performs treatment to maintain proper process fluid conditions of nuclear power plant. Operates nuclear power plant controls and equipment. Assists in refueling operations and preparing spent fuel elements and demineralizers for storage and shipment. Monitors process fluids for radioactivity and performs chemical separations. Conducts radiological surveys of nuclear power plant personnel, equipment, work areas and reactor elements.

MEMBERSHIPS, PAPERS, PRESENTATIONS AND AWARDS:

Member, Health Physics Society (1973)

Member, Eta Chapter, Delta Omega Society (1977)

"The Final Step in Decommissioning of the SM-1A Nuclear Power Plant: A Closeout Survey," AEHA Report No. 43-001-74, Health Physics National Meeting, 1974.

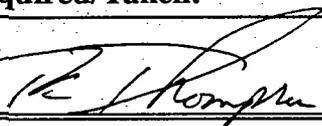
"A Data Base Management System For Real-Time Monitoring of Operating Parameters of A Diagnostic X-Ray System," Ph.D. Dissertation, University of North Carolina, Chapel Hill, NC, 1983.

"Computerized Quality Assurance in Diagnostic Radiology," Health Physics National Meeting, Baltimore, MD, 1983.

"Acceptance Testing of Computerized Tomography Systems," Savannah River Chapter Health Physics Society Meeting, September 1985.

"Operational Problems for a Radiation Protection Program at A Major Medical Institution," Medical Physics in Military Medicine Course, AEHA, MD, September 1987.

"A Protocol to Comply With The Joint Commission of Accreditation of Health Care Organizations Requirements in Diagnostic Radiology," Medical Physics In Military Medicine Course, AEHA, MD, October 1988.

TELEPHONE CONVERSATION RECORD		Date: May 24, 1994	Time: 10:43
Mail Control No.: 117725		License No.: 08-01738-02	Docket No.:
Person Called: Lt. Colonel William B. Johnson		Organization: Walter Reed Army Med. Ctr.	Telephone Number: 412 427-5104
Person Calling: Thomas K. Thompson			
Subject: Some additional questions.			
<p>Summary: Discussed with Colonel Johnson that I became aware that he desires to be named as RSO and that I need clarification on a few issues as follows:</p> <p>a) Please submit the your credentials for RSO.</p> <p>b) Please identify and justify your need for decaying isotopes of > then 65 day half-life.</p> <p>c) Although you have not requested any specific byproduct material that would require an emergency plan the sum of ratios could put you over the values which do not require such a plan. Do you intend to limit the possession of byproduct materials to stay under the requirement for a plan or will you submit a plan?</p> <p>d) A preliminary check of your QM plan indicates you have not addressed sealed source therapy or radiopharmaceutical therapy other than I-131.</p> <p>Please provide this information.</p>			
Action Required/Taken:			
Signature: 		Date: 5/24/94	



DEPARTMENT OF THE ARMY
WALTER REED ARMY MEDICAL CENTER
WASHINGTON, DC 20307-5001



REPLY TO
ATTENTION OF:

February 15, 1994

030-01317

P-7

Health Physics Office

SUBJECT: Additional Information for Review of U.S. Nuclear
Regulatory Commission License No. 08-01738-02, Mail Control
No. 117725

Nuclear Materials Safety Branch
Division of Radiation Safety and Safeguards
ATTENTION: Mr. Thomas K. Thompson
U.S. Nuclear Regulatory Commission, Region I
475 Allendale Road
King of Prussia, Pennsylvania 19406-1415

Dear Mr. Thompson:

In reviewing our licensing correspondence with your office I noticed an error concerning the survey criteria that we forwarded to your office in a memo dated 9 September 1993. In that correspondence we indicated that the health physics staff would conduct weekly surveys for users handling 200 uCi or more and monthly surveys for all other areas. That is incorrect.

We propose the following revision:

(1) Areas using 200 uCi or more will still receive weekly surveys from the Health Physics Office.

(2) Areas using less than 200 uCi but more than 10 percent of the values in 10 CFR Part 20, Appendix C will receive monthly surveys by the health physics staff and daily surveys by the user each day of use.

(3) Areas using less than 10 percent of the values in 10 CFR Part 20, Appendix C will receive quarterly surveys by the health physics staff and we will not require users to conduct daily surveys.

We feel that these criteria will ensure an adequate level of safety while avoiding onerous requirements on the part of our researchers. I hope you will find the above information sufficient to complete your processing of our application. Please feel free to contact me @ (301)-427-5104/5107 if you any questions.

AN FEB 28 1994

Mark A. Melanson

MARK A. MELANSON, CHP
Captain, U.S. Army
Chief, Health Physics Office

OFFICIAL RECORD COPY ML 10

117725
FEB 28 1994



DEPARTMENT OF THE ARMY
WALTER REED ARMY MEDICAL CENTER
WASHINGTON, DC 20307-5001

MS16

P-7



REPLY TO
ATTENTION OF:

December 9, 1993

Health Physics Office

SUBJECT: Additional Information for Review of Renewal of U.S. Nuclear Regulatory Commission License No. 08-01738-02, mail control No. 117725

Nuclear Materials Safety Branch
Division of Radiation Safety and Safeguards
ATTENTION: Mr. Thomas K. Thompson
U.S. Nuclear Regulatory Commission, Region I
475 Allendale Road
King of Prussia, Pennsylvania 19406-1415

Dear Mr. Thompson:

In response to your letter of November 30, 1993, pertaining to the renewal of License No. 08-0738-02, Control No. 117725, the following additional information is provided:

1. In addition to the audit elements described in our October 29, 1993 letter, independent room surveys are performed as described in paragraph 1, September 29, 1993 letter. Elements of these surveys include checking for posting of required documents, observing work habits of and discussion with technicians and users to ensure the general rules for the safe use of radioactive material are being followed, compliance with NRC and Army regulations and to evaluate training effectiveness. A written survey report listing deficiencies, recommended corrective actions, and/or helpful suggestions is provided the user.

2. Paragraph 3.a.(3) of the model ALARA program will be retained.

I hope you will find the above information sufficient to complete your processing of our application.

ARTHUR G. SAMILJAN
Lieutenant Colonel, U.S. Army
Chief, Health Physics Office

OFFICIAL RECORD COPY NO. 10

117725
DEC 17 1993

NOV 30 1993

License No. 08-01738-02
Docket No. 030-01317
Control No. 117725

Department of the Army
Walter Reed Army Medical Center
ATTN: Major General Ronald R. Blanck
Commanding Officer
Washington, DC 20307-5001

Dear Major General Blanck:

This is in reference to your application dated January 21, 1993 and your letter dated October 29, 1993 to renew License No. 08-01738-02. In order to continue our review, we need the following additional information:

1. The documentation you have provided on your radiation safety audits indicates that activities and work areas are reviewed in order to determine compliance with procedures possession limits, record keeping and posting. Your procedure appears to be weak in that your audits are announced and that most of the emphasis is on record keeping, posting and other administrative matters. In our September 1993 letter Items 3.(b. through d.) have not been addressed entirely in your submittal. You should provide additional information that demonstrates your audits cover more than record and inventory compliance, that audits will be unannounced reviews of radiation workers safety practices.
2. You have indicated that you want to delete paragraph 3.a.(3) from your proposed ALARA program. We do not recommend that you delete the quarterly audits of radiation surveys that are to be reported to the Radiation Safety Committee by the Radiation Safety Officer. This is a useful feature of the ALARA program and should be included. Please confirm you will retain such audits.

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MLW

We will continue our review upon receipt of this information. Please reply in duplicate to my attention at the Region I office and refer to Mail Control No. 117725. If you have any technical questions regarding this deficiency letter please call the reviewer at (215) 337-5303.

Sincerely,

Original Signed By:
Thomas K. Thompson

Thomas K. Thompson
Senior Health Physicist
Nuclear Materials Safety Branch
Division of Radiation Safety
and Safeguards

RT
DRSS:RI
Thompson/gc

NP/30/93



DEPARTMENT OF THE ARMY
WALTER REED ARMY MEDICAL CENTER
WASHINGTON, DC 20307-5001

MS16
P-7



REPLY TO
ATTENTION OF:

October 29, 1993

Health Physics Office

SUBJECT: Additional Information for Review of Renewal of U.S. Nuclear Regulatory Commission License No. 08-01738-02, mail control No. 117725

Nuclear Materials Safety Branch
Division of Radiation Safety and Safeguards
ATTENTION: Mr. Thomas K. Thompson
U.S. Nuclear Regulatory Commission, Region I
475 Allendale Road
King of Prussia, Pennsylvania 19406-1415

Dear Mr. Thompson:

In response to your letter of September 29, 1993, pertaining to the renewal of License No. 08-0738-02, Control No. 117725, the following additional information is provided:

1. The minimum requested information that is required of proposed users is detailed on the enclosed authorization application forms. (Enclosures 1-3)
2. The information indicated in Information Notice 90-09, Attachment 1 is provided at enclosure 4.
3. The minimum elements of our authorization audits are detailed in the Health Physics Office Standing Operating Procedure 1-26. (Enclosure 5) Performance of independent surveys was addressed in paragraph 1 of our September 9, 1993 letter.
4. The minimum information recorded for radiation safety training is date training was given, place, instructor, and names of attendees. The groups of workers who will receive training are listed at ATT 8.1 of original application.
5. Please change Item 10.2 of original application to read "We will establish and implement the model ALARA program in Appendix G to Regulatory Guide 10.8, Revision 2 except that paragraph 3.a.(3) is deleted".
6. Please change Item 10.5 of original application to read "We will establish and implement the model spill procedures in Appendix J to Regulatory Guide 10.8, Revision 2 except that the Alternate RSO will follow up on the cleanup of the spill and will attach an Incident Memorandum to the Contamination Survey.

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117725
NOV 08 1993

I hope you will find the above information sufficient to complete your processing of our application.

Enclosures
as


ARTHUR G. SAMILJAN
Lieutenant Colonel, U.S. Army
Chief, Health Physics Office

Encl

INSTRUCTIONS FOR PREPARATION OF APPLICATION
FOR AUTHORIZATION TO USE RADIOACTIVE MATERIAL (NON-HUMAN USE)

WRAMC FORM 1662R (FEBRUARY 1979)

GENERAL INFORMATION

1. An applicant for an "Authorization to Use Radioactive Material (Non-Human Use)" should complete WRAMC Form 1662R in detail and submit in duplicate to the WRAMC Health Physics Office.
2. Application for gamma irradiators should include a copy of the proposed Standard Operating Procedures that will be implemented to assure personnel safety during routine operation and emergency situations.
3. All proposed locations where the applicant desires to use, store, or dispose of radioactive material should be coordinated with the Health Physics Office Reactor and Survey Branch prior to submission of the application in order to assure expeditious processing of the application. Submission of an incomplete application will often result in a delay in issuance of an authorization because of the correspondence necessary to obtain information requested on the application.

EXPLANATION OF WRAMC FORM 1662R (FEBRUARY 1979)

1. WRAMC Form 1662R is designed for use in supplying information on radioactive materials use programs of varying complexity. The applicant should provide complete information on his proposed program for the possession and use of radioactive material for those items that do not apply, indicate as N/A (not applicable).
2. Application for new authorizations and renewal of existing authorizations should be completed in their entirety. However, applications for amendment of existing authorizations may be completed as follows:
 - a. Complete Items 1, 2, 3, 11, and 12.
 - b. For those items that do not require amendment indicate as N/C (no change).
 - c. For those items that require amendment indicate the proposed changes to the current authorization.
3. Explanation of WRAMC Form 1662R Items:
 1. Self explanatory.
 2. The "Principal User" is the individual who bears ultimate responsibility for possession, inventory and implementation of the safety procedures necessary to assure the safe use of the materials specified in the application. He is directly responsible to the WRAMC Radiation Control Committee. Attach a completed WRAMC Form 1643 if a current copy is not on file with the Health Physics Office.
 3. The applicant's address should include organization, activity, building, room number, and reference or office symbol.
 4. A "Co-Worker" is an individual who possesses adequate training and experience with radioactive material to qualify him as a "Principal User". He works under the direction of and is responsible to the "Principal User" for the safe and proper use of the materials specified in the application. List all Co-Workers alphabetically by last name. Each Co-Worker should be identified as follows: Last name, first name, middle initial and grade. Attach a completed WRAMC Form 1643 for each Co-Worker if a current copy is not on file with the Health Physics Office.
 5. A "Trainee" is an individual who works under the direct supervision of a Principal User or Co-Worker for the purpose of obtaining the necessary training and experience to qualify for either status. List all trainees alphabetically by last name. Each Trainee should be identified as follows: Last name, first name, middle initial and grade.
 6. A "Technician" is an individual who works under the direct supervision of a Principal User or Co-Worker for the purpose of performing certain routine duties associated with use of materials specified in the application. He does not possess suitable training and experience to be classified as a Principal User or Co-Worker, and is not undergoing training that would qualify him to attain either status. List all Technicians alphabetically by last name. Each Technician should be identified as follows: Last name, first name, middle initial and grade.
- 7-9. Self explanatory.
- 10a. List radioisotopes by ascending mass number, i.e., the isotope with the smallest mass number is placed at the top of the column and the isotope with the greatest mass number is placed at the bottom of the column.
- 10b. In addition to the chemical form of the radioisotope indicate whether it is in solid or liquid or gaseous form and whether it is a sealed or unsealed source. In order for radioactive material to qualify as a "sealed source" the radioactive source must be sealed in an impervious container which has sufficient mechanical strength to prevent contact with and dispersion of the radioactive material under the conditions of use and wear for which it was designed.
- 10c. State the maximum millicurie amount of each chemical form of the radioisotope that must be kept in the inventory in order to satisfy mission requirements.
- 10b. State the intended use of each chemical form of the radioisotopes listed in Column 10a.
- 11-12. Self explanatory.

APPLICATION FOR AUTHORIZATION TO USE RADIOACTIVE MATERIAL -- NON-HUMAN USE

1. APPLICATION FOR:	NEW AUTHORIZATION	RENEWAL OF AUTHORIZATION NUMBER	AMENDMENT TO AUTHORIZATION NUMBER
2. APPLICANT'S NAME (Last, First, MI) (Principal User)		3. APPLICANT'S MAILING ADDRESS (Include Organization)	
TELEPHONE NUMBER			

(IF MORE SPACE IS NEEDED FOR ANY ITEM, USE ADDITIONAL PROPERLY KEYED PAGES.)

4. List all CO-WORKERS	5. List all TRAINEES	6. List all TECHNICIANS

7. LOCATIONS WHERE MATERIAL WILL BE USED: *(Building and Associated Rooms)*

8. LOCATIONS WHERE MATERIAL WILL BE STORED: *(Building and Associated Rooms)*

9. RADIOACTIVE WASTE DISPOSAL SINK IN ROOM:

B. RADIOACTIVE MATERIAL DATA

A. RADIOISOTOPE	B. CHEMICAL AND/OR PHYSICAL FORM <i>(Sealed or Unsealed)</i>	C. POSSESSION LIMIT	D. USE

CERTIFICATE

(This item must be completed by applicant)

I certify that this application is prepared in conformity with WRAMC Regulations and that all information contained herein, including any supplements attached hereto, is true and correct to the best of my knowledge and belief.

11. I ACKNOWLEDGE MY RESPONSIBILITIES AS PRINCIPAL USER AS DEFINED IN WRAMC REGULATIONS.	12. ADMINISTRATIVE APPROVAL:
DATE _____ <i>(Signature of Principal User)</i>	DATE _____ <i>(Signature of Chief of Svc. Dept. or Div.)</i>

WRAMC RADIATION CONTROL COMMITTEE APPROVAL

APPROVED	APPROVED	AUTHORIZATION NO.:
HEALTH PHYSICS OFFICER, WRAMC	CHAIRPERSON SUBCOMMITTEE FOR NON-HUMAN USE: RADIATION CONTROL COMMITTEE, WRAMC	REVIEW DATE:

TRAINING AND EXPERIENCE OF AUTHORIZED RADIOISOTOPE USERS

1. NAME OF AUTHORIZED USER (Last, First, MI)	2. STATE OR TERRITORY IN WHICH LICENSED: (MD, DDS, DVM, etc.)
--	--

RANK/GRADE	ORGANIZATION	ORGANIZATIONAL DIVISION	BLDG./ROOM NO.	WRAMC AUTHORIZATION NO.
------------	--------------	-------------------------	----------------	-------------------------

3. CERTIFICATION

SPECIALTY BOARD A	CATEGORY B	MONTH AND YEAR CERTIFIED C

4. FORMAL EDUCATION: HIGHEST ACADEMIC DEGREE ATTAINED		
Higher Educational Institutions Attended	Type of Program Pursued and Dates of Attendance	Degree, Diploma or Certificate Received and Date
a. _____	_____	_____
b. _____	_____	_____
c. _____	_____	_____
d. _____	_____	_____

5. TRAINING RECEIVED IN BASIS RADIOISOTOPE HANDLING TECHNIQUES

FIELD OF TRAINING A	LOCATION AND DATE(S) OF TRAINING (Include course title if known) B	TYPE AND LENGTH OF TRAINING	
		LECTURE/ LABORATORY COURSES (Hours) C	SUPERVISED LABORATORY EXPERIENCE (Hours) D
a. RADIATION PHYSICS AND INSTRUMENTATION			
b. RADIATION PROTECTION			
c. MATHEMATICS PERTAINING TO THE USE AND MEASUREMENT OF RADIOACTIVITY			
d. RADIATION BIOLOGY			
e. RADIOPHARMACEUTICAL CHEMISTRY			

Encl 2

6. EXPERIENCE WITH RADIATION (Actual use of Radioisotopes) (Sealed or unsealed source)

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE

7. EXPERIENCE WITH RADIATION PRODUCING DEVICES (X-ray, Irradiators, etc.)

DEVICE	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE

8. CERTIFICATION:

I certify that the information provided hereon is true and complete to the best of my knowledge.

(Date Signed)

(Signature of Applicant)

HEALTH PHYSICS RADIOACTIVE PROTOCOL

a. Principal User	b. Telephone Number	c. Authorization Number
d. Coworkers	e. Trainees	f. Technicians
g. Radioisotope(s)	h. Physical/Chemical Form	i. Maximum Quantity per Experiment (mCi)
j. Title of Project		
k. Beginning Date	l. Ending Date	m. Repetitive Study Yes <input type="checkbox"/> No <input type="checkbox"/>

n. Life Cycle of Radioisotope Utilized for Research Procedure (Use block/flow diagram to show what, how, where, how much isotope is used from receipt to disposal; emphasize major steps (incubate over night, run gel, autoradiography, etc.), including kinds and volumes of waste generated.)

o. Labeling and Transport of Radioactive Material: All radioactive solutions, tissues, animals and waste will be identified by proper labels. Transport of radioactive material between authorized work areas will be conducted in a manner that precludes the spread of contamination and inadvertent exposure of non-participating personnel.

Encl 3

p. Laboratory Animal Age:

None

If yes, complete following:

Species:

Room:

Bldg:

Disposition of animals:

q. Isotope Utilization Locations:

(1)

(2)

(3)

(4)

(5)

Building

Room

Maximum Amount (mCi)

r. Maximum Amount in Possession (mCi)

Bldg

Room

Maximum Amt (mCi)

s. Isotope Storage Location(s)

t. Waste Storage Location(s)

u. Animal/Tissue Storage Location

v. All radioactive waste will be transferred to the Health Physics Office in accordance with Health Physics Condition No. 4.

w. All room surveys will be conducted in accordance with Health Physics Condition No. 2.

x. Personnel Dosimetry will be requested in accordance with Health Physics Condition No. 1. Assigned dosimetry monitors will be worn by all participating personnel.

Whole Body

TLD Ring

y. Are there any significant "NON-RADIATION" personnel hazards associated with this experiment; (Biological [Aids, etc.], Hazardous Chemicals [Toxic, Explosive, Corrosive etc.], Sharps, Lasers, Microwaves, electrical etc.) that may effect Health Physics personnel during routine inspections, surveys or waste handling procedures.

If yes specify:

NO

YES

The Research Protocol described above is designed to ensure that occupational radiation exposures and the release of radioactive effluents to the environment will be "as low as reasonably achievable" (ALARA) during all phases of the research procedure.

Printed Name and Signature of Principal User:

Date:

Rank/GS grade

Title:

Telephone Number

INFORMATION NEEDED IN AN AMENDMENT REQUEST TO AUTHORIZE
EXTENDED INTERIM STORAGE OF LOW-LEVEL RADIOACTIVE WASTE
IN 90-09

1. Identification of Waste to be Stored:

- a. None
- b. H-3, 1.5 Ci; C-14, 0.2 Ci; 2,900 cubic feet in (380) 55-gallon drums.
- c. (1) C
(2) solid
(3) volume reduction
(4) none
- d. H-3, 200 mCi/yr, solid/dry; C-14, 30 mCi/yr, solid/dry; 440 cubic feet in (60) 55-gallon drums.
- e. None

2. Plans for Final Disposal:

- a. July 1994 for waste generated in Washington, DC and Maryland.
- b. Texas for DC waste in 1996 and the Appalachian Compact for MD waste in 2000.
- c. As soon as possible after site is available; 1-3 months.

3. Physical Description of Storage Area:

- a. See attachment 1.
- b. 500 drums, 60 drums/year.
- c. Maintained decommissioned reactor facility.
- d. Perimeter fence w/secured gate and secured brick and concrete building.
- e. Forced air circulation system. This system has provided adequate ventilation for our LLRW storage and processing facility for the past several years. The additional drums of solid, long waste containing H-3 and C-14 will not require modification to this system.
- f. The building has an alarm system, fire extinguishers, fire hydrant, and is inspected monthly by fire chief. The additional storage will not require additional safeguard systems or modifications to the existing systems.

encl 4

g. The building has a heating and cooling system.

h. The building was designed and built as a reactor with low vulnerability to other hazards.

4. Packaging and Container Integrity:

a. Dry, solid waste compacted in steel, 55-gallon drums. No hazards to integrity of containers; indefinite storage life.

b. Weekly radiation and contamination surveys to include wipe samples and visual inspection.

c. Not applicable

5. Radiation Protection:

a. Area is currently used for LLRW storage and processing with proper posting, surveying, and monitoring. The extended interim storage of H-3 and C-14 will not present a significant radiation hazard nor a significant increase in personnel exposure. The current radiation safety and ALARA programs as described in the license application are adequate for this additional storage of H-3 and C-14.

b. none

c. The Walter Reed Army Medical Center (WRAMC) Emergency Preparedness Plan is activated by dialing (202) 576-3317. This is a central notification number for WRAMC police, fire, and emergency response. The extent of activation will be dependent upon the particular situation. The extended interim storage of H-3 and C-14 will not present significant hazards or risks.

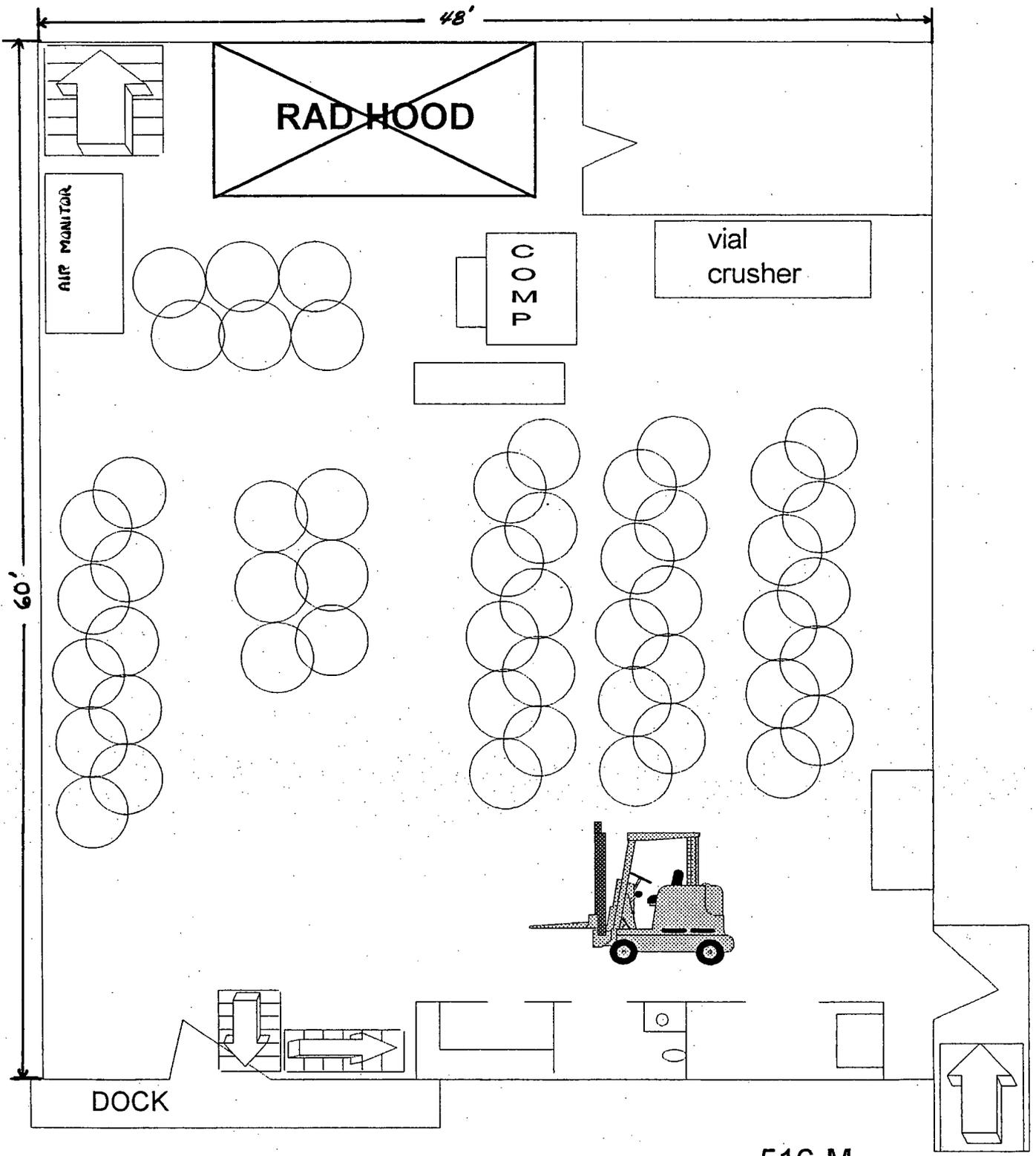
d. The radionuclides requiring extended interim storage are H-3 and C-14. The activity of the radionuclides contained in each waste package received is recorded in a log as a drum is packed. When the drum is filled and sealed the total quantity of each radionuclide is recorded on the drum's identification label. This information is also recorded and maintained on an electronic data file.

6. Training:

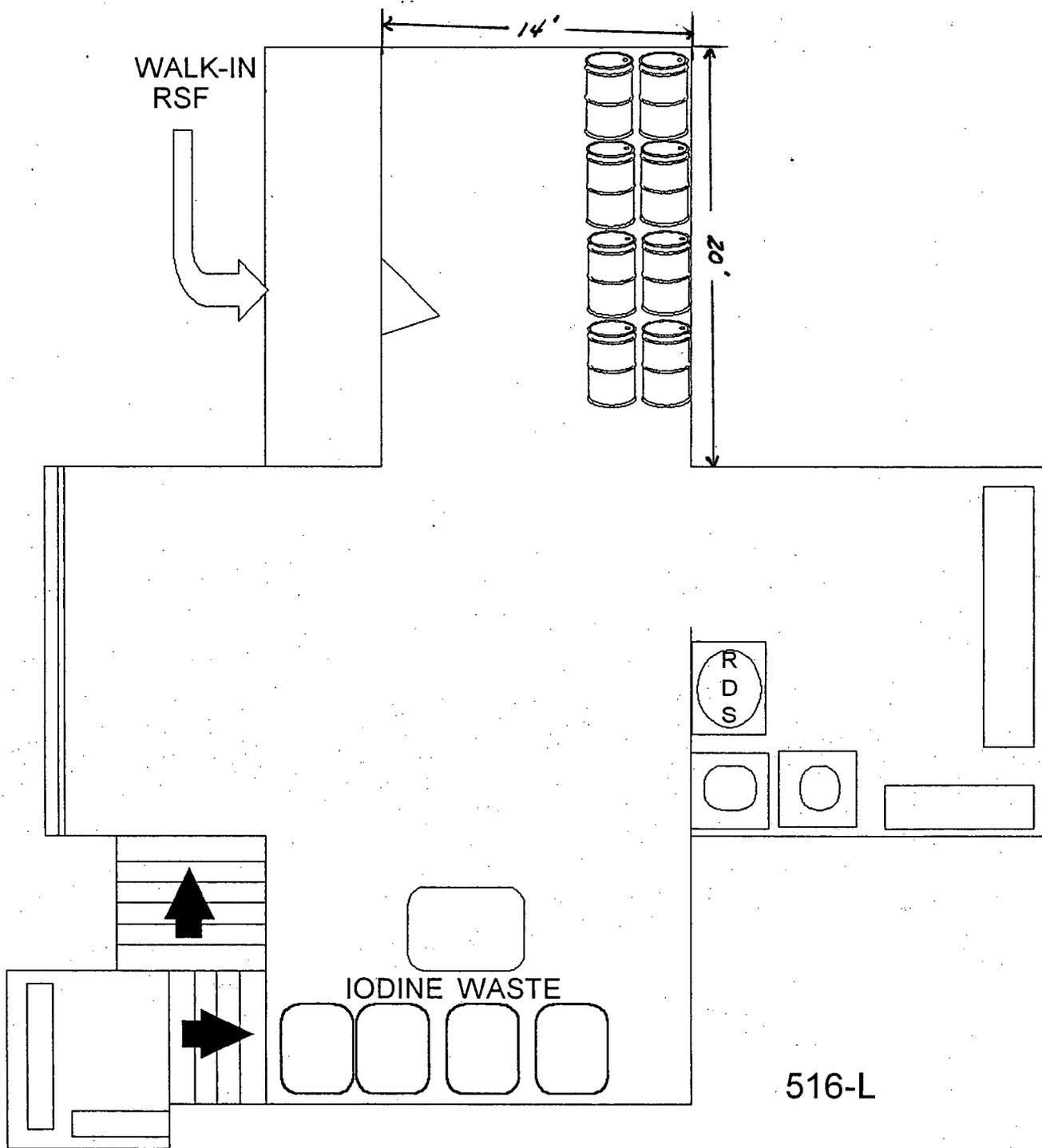
a. Health physics technicians attend weekly, one hour professional training classes which cover all aspects of the radiation safety program. Health Physics Office standing operating procedures are reviewed and discussed in detail as part of the training program.

7. Financial Assurance: See attached Statement of Intent.

8. Emergency Preparedness: Not required; however, WRAMC has an Emergency Preparedness Plan.



ATT 1





DEPARTMENT OF THE ARMY
WALTER REED ARMY MEDICAL CENTER
WASHINGTON, DC 20307-5001



REPLY TO
ATTENTION OF:

Office of The
Commanding General

STATEMENT OF INTENT

1. I, Ronald R. Blanck, Commander of Walter Reed Army Medical Center, am the Official duly appointed by the Headquarters, Department of the Army, to represent my organization.
2. The Nuclear Regulatory Commission Licenses for which this Statement of Intent is being issued are:
 - (a) License Number 08-01738-02 (expiration date 30 Apr 93)
 - (b) License Number 08-01738-03 (expiration date 30 Nov 96)
3. The facilities for which this Statement of Intent is being issued are:
 - (a) Walter Reed Army Medical Center, Washington, District of Columbia;
 - (b) Walter Reed Army Medical Center, Forest Glen Section and Annex, Silver Springs, Maryland;
 - (c) Walter Reed Army Medical Center, Department of Pathology, Fort Meade, Maryland (U.S. Army Medical Laboratory);
 - (d) Walter Reed Army Institute of Research, Washington, District of Columbia;
 - (e) Walter Reed Army Institute of Research, Rickman Building, 13 Taft Court, Rockville, Maryland;
 - (f) Walter Reed Army Institute of Research, Gillette Building, 270 Research Center, 1413 Research Boulevard, Rockville, Maryland;
 - (g) Walter Reed Army Institute of Research Animal Holding Facility, Fort Meade, Maryland;
 - (h) U.S. Army Institute of Dental Research Facility, Fort Meade, Maryland;

4. In accordance with the requirements of 10 CFR 30.35, and in my capacity as the Commander of Walter Reed Army Medical Center, I am providing assurance that sufficient funds for decommissioning and disposal of stored radioactive waste will be obtained when necessary for the eventual decommissioning of WRAMC's NRC Licenses and disposal of stored radioactive waste.

A handwritten signature in cursive script, appearing to read "Ronald R. Blanck".

Ronald R. Blanck
Major General, U.S. Army
Commander

HEALTH PHYSICS
WALTER REED ARMY MEDICAL CENTER
Washington, DC 20307-5001

HSHL-HP
SOP# 1-26

October 28, 1993

AUDIT OF RADIOACTIVE MATERIAL AUTHORIZATIONS

1. **GENERAL:** In accordance with AR 40-37 and 40-61, semiannual reviews of each WRAMC Radioactive Material Authorization must be performed. Site inspection of all authorized activities and work areas are reviewed in order to determine compliance with procedures, radioisotope possession limits, record keeping, and posting requirements.

2. **PURPOSE:** The purpose of this SOP is to:

a. Establish the review process used to audit an authorization.

b. Define the items to be audited and establish the criteria for acceptable compliance with Federal and WRAMC regulatory requirements.

c. List the documentation required.

3. **REQUIRED FORMS:**

a. The following forms must be used or reviewed when setting up, conducting, and/or following up on an audit of a Radioactive Material Authorization:

1. Memorandum: Health Physics Office "Audit of Radioactive Material" (Incl 1).

2. WRAMC Audit of Radioactive Material Form (Incl 2).

3. DA Form 3862: "Controlled Substances Stock Record" (Incl 3) or equivalent.

4. Authorization Program, Isotope Inventory Report Form (generated from the computer).

6. WRAMC Form 538 "Radiation Worker Briefing Card" (Incl 4).

7. Deficient Audit Form (Incl 5)

Encl 5

4. PREPARING FOR AUDIT:

a. Set up appointments with Principle Users (PU) by sending (or hand carrying) Memorandum from Health Physics Office "Audit of Radioactive Material". Audits should be scheduled in groups by location so the auditor can move from one audit to the next with a minimum of lost time. Most audits can be performed in 30 minutes, large authorizations may require more time and should be scheduled accordingly. Some rearranging will be necessary as PU's call to indicate conflicts with their schedules. The auditor should select a mutually agreeable time to reschedule when notified of a conflict.

b. Print a hard copy from the Authorization Program of the authorization you will be auditing, this will include:

- (1) Administrative data
- (2) Personnel and training dates
- (3) Rooms
- (4) Isotopes and limits authorized

c. Print Isotope Inventory Report Form from dBase Inventory data base, to list the isotope shipments received since the last audit and the isotopes still active from the previous audit. This will include the following information for each isotope shipment for the authorization requested:

- (1) HPO tag number
- (2) Chemical form
- (3) Date received
- (4) Original activity in millicuries
- (5) A blank to list new activity in millicuries
- (6) Last updated activity in millicuries
- (7) Vendor
- (8) Purchase order number
- (9) Call number
- (10) Remarks

d. Two copies of the Audit Form with a carbon are prepared so a signed copy can be left with the Principle User at the time of the audit.

e. The folder containing the previous inventory records for this authorization will be pulled from the HPO file.

5. **CONDUCTING AN AUDIT:** The material assembled in Item 4. b, c, d and e above will be taken by the auditor to the audit. The WRAMC "Audit of Radioactive Material" form will be used as a check list of the major areas of each authorization which need to be inspected. These are:

a. **DA Form 3862 (or equivalent) Inventory Records:** The authorizations inventory records will be compared to the "Isotope Inventory Report" (see item 4. c.) to ensure they include all shipments delivered to them by the HPO. Each entry in the inventory records shall contain: the isotope, the HPO tag number, date received, activity received, chemical form of compound, the activity used and disposed of, and the activity remaining. The "Isotope Inventory Report" will be completed at this time to show the new "updated activity" for each shipment. This form will be signed and dated at the bottom by the person providing the inventory information and will be used to update the inventory database at the HPO. It will remain on file as a permanent inventory record.

b. **Within limits:** The authorizations inventory records shall indicate a running balance of activity on hand for each isotope which is authorized. The PU is responsible for ensuring that the isotope limits of each isotope are not exceeded at any time and the auditor will check the running balance against the isotope limits listed on the computer generated copy of the authorization (see item 4. b. (4)).

c. **Inventory Control Officer:** The individual responsible for the inventory record keeping (PU or Technician).

d. **WRAMC Reg 40-10:** A copy must be available to radiation workers for information on the safe handling of radioactive material.

e. **WRAMC Authorization:** A copy of the approved authorization and any amendments must be maintained by the PU. At this time the computer generated copy of the information on the authorization (see item 4. b.) will be shown to the PU and any discrepancies clarified. Any changes which need to be made

in the authorization can be noted in items 11 or 12 on this form and it will be considered as an amendment request if signed by the PU.

f. General Provisions & Terms and Conditions: A copy must be maintained on file.

g. LSC - Source No. & Location: The location of any liquid scintillation counters with sealed source numbers will be noted.

h. WRAMC 538 "Radiation Worker Briefing Card": This form, required annually for each radiation worker, shall be requested if it has been determined that present records are not current (see item 4. f.).

i. Sink Log: A logbook listing amounts of radioactive material placed into the sanitary sewage system through a wash sink must be available for each wash sink on the authorization. Entries must be made at least monthly when no washes have been performed to indicate that fact. The monthly limit for wash sinks is 100 uCi.

j. Signs and Labels: Each controlled area shall be identified with the appropriate signs such that all employees and visitors who enter shall be informed of the pertinent requirements and procedures for the protection of themselves and fellow workers against internal and external exposure. The following areas and/or documents must be posted:

- (1) Wash Sinks
- (2) LSC
- (3) Entrance/Exit
- (4) NRC Form 3 (map)
- (5) Notice to Employees Letter
- (6) Parts 19&21 of 10CFR

k. Personnel Changes: Additions or deletions. The Audit Form can be used as a memo to make personnel changes if it is signed by the PU (no authorized representative can make amendments to the authorization).

October 28, 1993

1. General Comments: List pertinent information which should be communicated to the office such as: posting new equipment, renovations of labs, pregnant workers, computer changes, name changes, etc.

m. Signature & Date of Principal User or Authorized Representative: Signature of PU needed to amend the authorization.

6. DEFICIENT AUDIT FORM: Given if the authorization is being improperly maintained for any of the following reasons:

- a. Not maintaining correct inventory records.
- b. Not within possession limits.
- c. Failure to amend authorization to reflect changes in personnel, rooms, etc.
- d. Failure to adhere to proper work practices.



ARTHUR G. SAMILJAN
LTC, MS
Health Physics Officer

HSHL-H-HP (385-111)

MEMORANDUM FOR

SUBJECT: Health Physics Office Audit of Radioactive Material Inventory for
Authorization Number _____

1. This office is required to conduct periodic audits of the radioactive materials inventory for your Authorization.
2. You are scheduled to be audited on _____ at _____ hours. It is requested that the inventory officer for your Authorization be available to present inventory records and accompany the auditor during the inventory verification inspection.
3. If the date/time of the scheduled audit is not satisfactory, please contact Mr. David W. Burton, Chief, Radioactive Materials Control Branch, Telephone: 427-5104, to make alternate arrangements.

David W. Burton

DAVID W. BURTON
C, Radioactive Material Control Br.
Health Physics Office

Encl. 5.1

NAME (Last, First, MI)

DUTY MAILING ADDRESS AND TELEPHONE NUMBER

As Principal User I have insured that the above named individual has received a briefing on the following subjects in accordance with Title 10 Code of Federal Regulations Part 19.

1. Walter Reed Army Medical Center's "NOTICE TO EMPLOYEES"
2. Form NRC-3
3. Title 10 Code of Federal Regulations Parts 19, 20 and 21.
4. Information concerning the storage, transfer and use of radioisotopes allowed under this authorization.
5. Authorization To Use Radioisotopes (WRAMC Form 1662R)
6. Hazards and protective measures associated with isotope usage.
7. Procedures for requesting a report of exposure to radiation.

DATE	PRINTED NAME AND SIGNATURE OF PRINCIPAL USER	AUTHORIZATION NUMBER

I have received and understand the above listed information.

DATE	SIGNATURE

WRAMC FORM 538
1 NOV 81

Enc 15.4

RADIATION WORKER BRIEFING

MEMORANDUM FOR

SUBJECT: Isotope Audit of Authorization _____

1. On _____ an Isotope Audit of Authorization _____ was conducted by the Health Physics Office.

2. During the Audit, deficiencies were noted for the following reasons:

- _____ Failure to maintain a central record of isotope receipt and usage.
- _____ Isotope shipment delivered to authorization not noted on inventory records.
- _____ Incorrect entries in the records in regards to the amounts of materials present.
- _____ Not within possession limits.
- _____ Failure to notify the Health Physics Office of changes in Authorization (MEMORANDUM stating Additions or Deletions) of personnel, rooms etc.
- _____ Failure to adhere to all work practices as listed in WRAMC Regulation 40-10 and/or Authorization Terms and Conditions. Specifically: _____

3. Request receipt of a MEMO listing corrected deficiencies, and/or procedures which will ensure future compliance with regulations.

DAVID W. BURTON
Chief, Radioactive Material Branch
Health Physics Office

SEP 29 1993

License No. 08-01738-02
Docket No. 030-01317
Control No. 117725

Department of the Army
Walter Reed Army Medical Center
ATTN: Major General Ronald R. Blanck
Commanding Officer
Washington, DC 20307-5001

Dear Major General Blanck:

This is in reference to your application dated January 21, 1993 and a letter dated September 9, 1993 to renew License No. 08-01738-02. In order to continue our review, we need the following, additional information:

1. Although you have indicated that you use the criteria described in 10 CFR 33.15 to evaluate individual requests to use byproduct material, this criteria is not specific enough. We requested a copy of your authorized users application form in our August 11, 1993 letter. Please also provide the details of the minimum requested information that you would require of proposed users as stated in our August letter.
2. Please note that our indication that a condition will be put on your license limiting the holding time of byproduct material waste does not refer to those isotopes approved for decay-in-storage. You should indicate if the addition of such a condition on your license is acceptable or submit the information indicated in Information Notice 90-09, Attachment 1.
3. In answer to Question 4 of our August letter you have not been specific. We are interested in the minimum elements of your audits such as:
 - a) Scope of your review of inventory and survey records of investigators.
 - b) Evaluation that you will perform of user and technician training through discussion and observation.
 - c) Performance of independent surveys.

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- d) Evaluation of compliance with the permit granted to the investigator and your safety manual.
- e) Provision for instructions to users and technical staff based on performance.

Please provide the details of your audit program.

- 4) You have indicated that your training program will be as described in Appendix A of Regulatory Guide 10.8; however, you have not answered our specific question of what records will be maintained. Please provide a list of the minimum information that will be recorded and identify each group of workers who will receive the training.

We will continue our review upon receipt of this information. Please reply in duplicate to my attention at the Region I office and refer to Mail Control No. 117725. If you have any technical questions regarding this deficiency letter please call me at (215) 337-5303.

Sincerely,

Original Signed By:
Thomas K. Thompson

Thomas K. Thompson
Senior Health Physicist
Nuclear Materials Safety Branch
Division of Radiation Safety
and Safeguards


DRSS:RI
Thompson/smh

9/29/93



DEPARTMENT OF THE ARMY
WALTER REED ARMY MEDICAL CENTER
WASHINGTON, DC 20307-5001



MS66
P-7

REPLY TO
ATTENTION OF:

September 9, 1993

Health Physics Office

SUBJECT: Additional Information for Review of Renewal of U.S. Nuclear Regulatory Commission License No. 08-01738-02, mail control No. 117725

Nuclear Materials Safety Branch
Division of Radiation Safety and Safeguards
ATTENTION: Mr. Thomas K. Thompson
U.S. Nuclear Regulatory Commission, Region I
475 Allendale Road
King of Prussia, Pennsylvania 19406-1415

Dear Mr. Thompson:

In response to your letter of August 11, 1993, pertaining to the renewal of License No. 08-0738-02, Control No. 117725, the following additional information is provided:

a. The Radiation Control Committee (RCC) follows the criteria set down in 10 CFR 33.15 for evaluating physicians and other individuals to use radioactive material for nonhuman uses. After evaluations have been completed using the aforementioned criteria and additional information, the RCC makes a final decision to approve or disapprove an individual as an authorized user.

b. Information Notice 90-09 has been carefully reviewed. It does not state that license renewals not having an Interim Waste Storage Plan will have a condition placed on it which will only allow storage of LLW for a rolling two year period. It does state however, that "not all licensees who will need to store LLW onsite will need amendments to their licenses to do so". Our existing license has no condition limiting storage of radioactive material or waste, except by total activity. We intend to maintain our total inventory, to include storage of waste, below existing limits. A rolling two year LLW storage condition will conflict with our NRC approval for decay in storage of materials with half-lives of up to 90 days. This requires us to hold some waste for a minimum of 2.5 years with no upper limit specified. Our waste is processed and stored in a decommissioned research reactor building which is solely occupied and secured by the Health Physics Office. The waste consist of dry, solid lab material, which is compacted into 55-gallon steel drums properly labeled and ready for disposal. It is stored under dry, temperature controlled conditions on four-level warehouse racks, and secured in a locked building surrounded by a locked perimeter fence. This facility has capacity to safely hold 500 drums.

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SEP 17 1993

c. Our request for a case by case exemption from the requirements of 10 CFR 35 Subpart J is hereby withdrawn.

d. Radiation safety office audits of the performance of radioactive material authorizations are conducted semiannually. The elements of each audit include compliance with Army and hospital regulations, terms and conditions of the NRC license, proper posting of signs and labels, activity on hand, location, inventory records, logs, procedures, and required personnel actions.

e. All protocols for the use of unbound radioactive iodine involve less than 10 mCi per experiment; however, iodination procedures are required to be performed in a designated glove box which is inside a chemical fume hood. Exhaust is pulled through a charcoal filter and HEPA filter before venting to the outside. The hood exhaust air and room air are periodically monitored to ensure compliance with federal standards. All nonhuman use labs use less than 100 mCi at any one time. Nuclear Medicine is the only location where quantities greater than 100 mCi are handled. One compactor is used at the Health Physics waste processing facility to compact dry, solid LLW in 55-gallon drums. The facility is secured by the Health Physics Office and routinely surveyed for contamination. The compactor is exhausted through a HEPA particulate filter and charcoal cartridge air samples are used to monitor the exhaust air for volatile gases.

f. The model training program that was published in Appendix A to Regulatory Guide 10.8 Revision 2 will be established for all radiation workers. Records will be maintained to demonstrate compliance with applicable regulations.

g. Animal holding facilities are maintained in clean areas. Animals are taken from the holding facility to a restricted area by authorized users for the introduction of radioactive material. Animals are then sacrificed, placed in a marked freezer, and picked up by Health Physics Office for appropriate disposal. Protocols requiring the holding of animals containing radioactive material greater than exempt quantities will include provisions to ensure that the holding facility is secured from unauthorized access. Only authorized users will handle animals, animal wastes and carcasses. Cages will be cleaned and decontaminated by authorized users to ensure proper disposal of radioactive material and that they are free of radioactive contamination.

h. Trigger levels for removable contamination will be >50% and >100% of Reg Guide 8.23, Table 2 limits. Trigger levels for radiation levels will be 2 times background or 1 mR/hr for gamma and 2 mR/hr or 25% of 10 CFR 20.101(a) limits.

i. Our request for authorization to decay in storage I-125 LLW for 5 half-lives rather than 10 half-lives is hereby withdrawn.

j. Amendment No. 63, dated June 22, 1993, added the Gillette building to our license. See enclosure.

k. It has been noted that M.1 and M.2 of Reg Guide 10.8, Revision 2 are missing some required information.

l. Minimum requirements for surveys in non-medical use areas will be determined by types and quantity of material. For gamma and high energy beta emitting material the users will survey daily with G-M survey meters. Health Physics will survey weekly when ≥ 200 uCi is used at any one time and monthly when < 200 uCi is used. For soft beta emitting material the users will perform daily wipes at the end of each day of use when using > 100 uCi at any one time. Health Physics will survey weekly when ≥ 200 uCi is used at any one time and monthly when < 200 uCi is used.

I hope the above information adequately addresses your concerns pertaining to the renewal of our broad scope license. Please contact the undersigned at (301) 427-5161 if further information is required.

Enclosure
as



ARTHUR G. SAMILJAN
Lieutenant Colonel, U.S. Army
Chief, Health Physics Office

MATERIALS LICENSE

Amendment No. 63

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10 of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 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 the letter dated March 26, 1993,	
1. Department of the Army Walter Reed Army Medical Center (WRAMC)		3. License number 08-01738-02 is amended in its entirety to read as follows:	
2. Washington, D.C. 20307-5001		4. Expiration date April 30, 1993 (Extended)	
		5. Docket or Reference No. 030-01317	
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 numbers 1-83	A. Any	A. 400 millicuries of each radionuclide with a possession limit of 400 curies	
B. Iodine 131	B. Any	B. 2 curies	
C. Xenon 133	C. Any	C. 2 curies	
D. Krypton 85	D. Any	D. 1 curie	
E. Gold 198	E. Any	E. 1 curie	
F. Phosphorus 32	F. Any	F. 2 curies	
G. Carbon 14	G. Any	G. 2 curies	
H. Iodine 125	H. Any	H. 1 curie	
I. Iridium 192	I. Any	I. 1 curie	
J. Chromium 51	J. Any	J. 750 millicuries	
K. Sulfur 35	K. Any	K. 1 curie	
L. Hydrogen 3	L. Any	L. 5 curies	
M. Molybdenum 99	M. Molybdenum 99/ Technetium 99m Generators	M. 23 curies	
N. Technetium 99m	N. Any	N. 23 curies	
O. Strontium 90	O. Sealed sources	O. []	
P. Cesium 137	P. Sealed sources	P. []	
Q. Gadolinium 153	Q. Sealed sources	Q. []	
R. Iodine 125	R. Sealed sources (Norland Inst. Co., Model 178A591A)	R. 400 millicuries	
S. Iodine 125	S. Sealed sources (3M Company seeds)	S. 500 millicuries	
T. Iodine 125	T. Sealed sources (AECL Models C235 or C324, or Amersham Corp. Model IMC.P2)	T. 4 sources, not to exceed 300 millicuries each	

EX 2

Encl

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License number

08-01738-02

Docket or Reference number

030-01317

Amendment No. 63

(Items 6., 7. & 8. continued)

6. Byproduct, source, and/or special nuclear material	7. Chemical and/or physical form	8. Maximum amount that licensee may possess any one time under the license
U. Cesium 137 V. Cobalt 60 W. Americium 241 X. Americium 241	U. Sealed sources V. Sealed sources W. Any X. Sealed sources	U. [] V. [] W. 100 microcuries X. []
Y. Nickel 63 Z. Iodine 129 AA. Thorium BB. Uranium CC. Uranium depleted in Uranium 235 DD. Americium 241 EE. Cesium 137	Y. Sealed sources and foils Z. Sealed sources AA. Any BB. Any CC. Plated Metal DD. Sealed sources EE. Sealed source	Y. 1 curie Z. 1 curie AA. 5 kilograms BB. 50 kilograms CC. 400 kilograms DD. [] EE. []
FF. Cesium 137	FF. Sealed sources	FF. []

9. Authorized use

- A. through T. Medical research, diagnosis, and therapy; research and development as defined in 10 CFR 30.4.
- U. through Z. Research and development as defined in 10 CFR 30.4; teaching.
- AA. and BB. Teaching and laboratory research.
- CC. Shielding.
- DD. Standards and reference sources.
- EE. In an _____ for calibration of instruments.
- FF. Instrument calibration.

CONDITIONS

10. Location of use: Walter Reed Army Medical Center, Washington, D. C.; WRAMC Forest Glen Section and Annex, Silver Spring, Maryland; Walter Reed Army Institute of Research Animal Holding Facility, Fort Meade, Maryland; U.S. Army Medical Laboratory, WRAMC Department of Pathology, Fort Meade, Maryland; and U.S. Army Institute of Dental Research Facility, Fort Meade, Maryland; Rickman Building, 13 Taft Court, Rockville, Maryland; Key West Research Center, 9620 Medical Center Drive, Rockville, Maryland; and Gillette Building, 270 Research Center, 1413 Research Boulevard, Rockville, Maryland.
11. Radiation Safety Officer: LTC Arthur G. Samiljan.

Ex 2

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number

08-01738-02

Docket or Reference number

030-01317

Amendment No. 63

(Continued)

CONDITIONS

12. A. Licensed material shall be used by, or under the supervision of, individuals designated by the licensee's Radiation Safety Committee, Col. Joan T. Zajtchuk, Chairman.
- B. The use of licensed material in or on humans shall be by a physician as defined in Section 35.2 of 10 CFR Part 35.
- C. Physicians designated to use licensed material in or on humans shall meet the training criteria established in 10 CFR Part 35, Subpart J.
13. Experimental animals administered licensed materials or their products shall not be used for human consumption.
14. In lieu of using the conventional radiation caution colors (magenta or purple on yellow background) as provided in Section 20.203(a)(1), of 10 CFR Part 20, the licensee is hereby authorized to label detector cells and cell baths, containing licensed material and used in gas chromatography devices, with conspicuously etched or stamped radiation caution symbols without a color requirement.
15. 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 foil temperatures from exceeding that specified by the manufacturer.
16. Notwithstanding the requirements of 10 CFR 35.49 (a) and (b), the licensee may use for medical use any byproduct material or reagent kit for which the Food and Drug Administration has accepted a "Notice of Claimed Investigational Exemption for a New Drug" (IND).
17. The licensee may transport licensed material in accordance with the provisions of 10 CFR 71, "Packaging and Transportation of Radioactive Material."
18. If only a single radionuclide specified in NUREG 0767, is possessed, the possession limit is the quantity specified in Schedule of Limiting Possession Limits, NUREG-0767. If two or more radionuclides are possessed, the possession limit for each is determined as follows: the sum of the quotients of the quantities possessed divided by the quantities of those radionuclides specified in the Schedule of Limiting Possession Limits, NUREG-0767 shall not exceed unity.
19. The licensee is authorized to hold radioactive material with a physical half-life of less than 90 days for decay-in-storage before disposal in ordinary trash provided:
 - A. Radioactive waste to be disposed of in this manner shall be held for decay a minimum of 10 half-lives.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number

08-01738-02

Docket or Reference number

030-01317

Amendment No. 63

continued)

CONDITIONS

- B. Before disposal as normal waste, radioactive waste shall be surveyed to determine that its radioactivity cannot be distinguished from background. All radiation labels shall be removed or obliterated.
- C. Generator columns shall be segregated so that they may be monitored separately to ensure decay to background levels prior to disposal.

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.

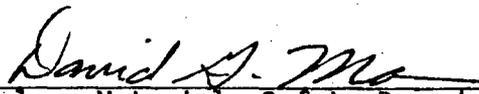
- A. Application dated July 18, 1979
- B. Letter dated January 13, 1984
- C. Letter dated May 8, 1987
- D. Letter dated March 16, 1988
- E. Letter dated March 28, 1988
- F. Application dated August 5, 1988
- G. Letter dated September 23, 1988
- H. Letter dated July 28, 1989
- I. Letter dated September 12, 1989
- J. Letter dated January 19, 1990
- K. Letter dated July 16, 1990
- L. Letter dated March 15, 1991
- M. Letter dated July 11, 1991
- N. Letter dated April 8, 1992
- O. Letter dated August 4, 1992
- P. Letter dated November 24, 1992
- Q. Letter dated March 26, 1993

For the U.S. Nuclear Regulatory Commission

te

JUN 22 1993

By



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

AUG 11 1993

License No. 08-01738-02
Docket No. 030-01317
Control No. 117725

Department of The Army
Walter Reed Army Medical Center
ATTN: Major General Ronald R. Blanck
Commanding Officer
Washington, D.C. 20307-5001

Dear Major General Blanck:

This is in reference to your application dated January 21, 1993 to renew License No. 08-01738-02. In order to continue our review, we need the following additional information:

1. Please submit the Radiation Safety Committee's (RSC) procedures and criteria for making safe evaluations of proposed uses of radioactive material that will demonstrate the Committee's process for obtaining permission to use radionuclides. A typical "application for authorization" for human and non-human use submitted to the Committee for review should as a minimum take into account the radionuclides, physical/chemical form, and maximum activities requested by the applicant, the applicant's training and experience with the nuclides requested, the training and experience of personnel working for the applicant, the use of the requested nuclide, the applicant's facilities and equipment, and any specific hazard in the operations with the radionuclides. You should submit an example of your authorized user application and approval forms.
2. Please review the enclosed Information Notice 90-09. You may wish to develop an Interim Waste Storage Plan at this time. If you do not wish to develop an Interim Waste Storage Plan, a condition will continue to be placed on your license that allows storage of LLW for a rolling two year period. Submittal of an Interim Waste Storage Plan amendment in accordance with Information Notice 90-09 would be required to remove this condition from your license.

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ML 10

3. In your request for case by case exemption from the requirements in Subpart J please confirm that exceptions are only made for unique/non-routine clinical studies that are within the physician's field of expertise and exceptions are not used to circumvent the Part 35, Subpart J requirements for routine studies. Please also submit the minimum training and experience criteria that you will use for these exceptions.
4. Please describe in greater detail the frequency and elements of your radiation safety office audits of the performance of individual authorized investigators that will assure that your program is operating in accordance with your procedures.
5. Please describe any special use facilities and equipment such as iodination facilities > 10 millicuries, large use labs > 100 millicuries or compactors.
6. What records will you maintain of training and testing of personnel? Please also confirm that your training program will include instructions on emergency procedures and include provisions for periodic exercises.
7. Regarding your use of animals in research:
 - a. Please describe the animals' housing facilities or the criteria that the RSC will follow in approving animal housing facilities.
 - b. Please submit a copy of instructions provided to animal caretakers for handling of animals, animal wastes and carcasses.
 - c. Please submit a copy of instructions on cleaning and decontamination of animal cages.
 - d. Please submit your procedures for ensuring that animal rooms will be locked or otherwise secured unless attended by authorized users of byproduct material.
8. Please specify your trigger or action levels for removable contamination and radiation levels when performing radiation surveys.
9. With regard to your request for authorization to decay in storage materials with half-lives of less than 90 days for only 5 half-lives rather than 10 half-lives please provide the following additional information:
 - a. For all byproduct materials with half-lives of greater than or equal to 65 days, you must specifically identify the isotopes desired and describe the instrumentation and monitoring procedures that will be used to determine that the waste is free of radioactive contamination at the end of the storage period.

- b. For specific byproduct materials to be held only 5 half-lives, identify these separately and indicate how you will assure that the waste will contain less than the quantity of radioactive material specified in 10 CFR 20, Appendix C per waste container when placed in storage. Use the 1/R rule for multiple isotopes.
10. In Item 3 of your application you have added the Gillette building. Please provide a description of what byproduct materials uses and quantities will be used in this facility. You should indicate approximately how many laboratories you plan to establish and their general location.
11. Please note that M.1 and M.2 of Regulatory Guide 10.8, Revision 2 are missing some required information. M.1 should include the expiration date and M.2 should include expiration date and lot number.
12. Your described area radiation and contamination surveys may not be adequate for your non-medical use program. Please provide greater detail on your minimum requirements for surveys in the rest of your broad scope program. You should develop a plan for minimum survey frequencies for laboratories based on categories of risk as determined by types, quantities, and forms of byproduct material that will be handled. Please also include your action limits for survey results.

We will continue our review upon receipt of this information. Please reply in duplicate to my attention at the Region I office and refer to Mail Control No. 117725. If you have any technical questions regarding this deficiency letter please call me at (215) 337-5303.

In order to continue prompt review of your application, we request that you submit your response to this letter within 30 calendar days from the date of this letter.

Sincerely,

Original Signed By:
Thomas K. Thompson

Thomas K. Thompson
Senior Health Physicist
Nuclear Materials Safety Branch
Division of Radiation Safety
and Safeguards

Enclosure:
Information Notice 90-09

Ret
DRSS:RI
Thompson/cmm

8/10/93

FEB 16 1993

Docket No. 030-01317
License No. 08-01738-02
Control No. 117725

Department of the Army
Walter Reed Army Medical Center
ATTN: Major General Ronald R. Blanck
Commanding Officer
Washington, DC 20307-5001

Dear Major General Blanck:

Subject: LICENSE RENEWAL APPLICATION

This is to acknowledge receipt of your application for renewal of material(s) license identified above. Your application is deemed timely filed, and accordingly, the license will not expire until final action has been taken by this office.

Any correspondence regarding the renewal application should reference the control number specified above.

Sincerely,

Original Signed By:
Sheryl Villar

Sheryl Villar, Chief
Licensing Assistance Section
Division of Radiation Safety
and Safeguards

MUP
2/16/93 *(60)*
2/16/93

30-01317

X



DEPARTMENT OF THE ARMY
OFFICE OF THE SURGEON GENERAL
5109 LEESBURG PIKE
FALLS CHURCH, VA 22041-3258



REPLY TO
ATTENTION OF

February 04, 1993

Preventive Medicine
Consultants Division

US Nuclear Regulatory Commission
Region I
475 Allendale
King of Prussia, Pennsylvania 19406

Dear Sir/Ma'am:

Enclosed are two copies of a request to renew in its entirety Byproduct Material License Number 08-01738-02, Walter Reed Army Medical Center, Washington, DC.

Recommend approval.

Should the need arise, you may speak to me by telephoning 703-756-0132.

Sincerely,

Peter H. Myers
Colonel, U.S. Army
Radiological Hygiene Consultant

Enclosure

CF: U.S. Army Environmental Hygiene Agency, Attention: Health Physics Division, Aberdeen Proving Ground, MD 21010-5422

OFFICIAL RECORD COPY ML 10

117725
FEB 08 1993



DEPARTMENT OF THE ARMY
WALTER REED ARMY MEDICAL CENTER
WASHINGTON, DC 20307-5001



REPLY TO
ATTENTION OF:

HSHL-HP (385-11m)

21 January 1993

MEMORANDUM THRU Commander, HQ, U.S. Army Health Services Command, ^{9110M}
~~ATTN: HSCL-P, Fort Sam Houston, TX 78234-6000~~ 29 JAN 93

FOR Office of The Surgeon General, ATTN: DASG-PSP, Skyline Plaza
5, ~~5111~~ Leesburg Pike, Falls Church, VA 22041-3258

⁵⁷⁰⁹
SUBJECT: NRC License Renewal

1. The enclosed NRC License renewal for Walter Reed Army Medical Center is provided IAW TB Med 525.
2. POC for this office is Mr. David Burton who can be reached at (301) 427-5107/5104 or AUTOVON 291-5107/5104.

ENCL

ARTHUR G. SAMILJAN
LTC, MS
Chief, Health Physics Office

X

NRC FORM 313
11-84
10 CFR 30, 32, 33, 34,
35 and 40

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED BY OMS
3185-0120
Rev. 5-21-87

APPLICATION FOR MATERIAL LICENSE

INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW.

FEDERAL AGENCIES FILE APPLICATIONS WITH:

U.S. NUCLEAR REGULATORY COMMISSION
DIVISION OF FUEL CYCLE AND MATERIAL SAFETY, NMSS
WASHINGTON, DC 20545

ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS, IF YOU ARE LOCATED IN:

CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, MAINE, MARYLAND, MASSACHUSETTS, NEW JERSEY, NEW YORK, PENNSYLVANIA, RHODE ISLAND, OR VERMONT, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION I
NUCLEAR MATERIAL SECTION B
631 PARK AVENUE
KING OF PRUSSIA, PA 19406

ALABAMA, FLORIDA, GEORGIA, KENTUCKY, MISSISSIPPI, NORTH CAROLINA, PUERTO RICO, SOUTH CAROLINA, TENNESSEE, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION II
MATERIAL RADIATION PROTECTION SECTION
101 MARIETTA STREET, SUITE 2900
ATLANTA, GA 30333

IF YOU ARE LOCATED IN:

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION III
MATERIALS LICENSING SECTION
799 ROOSEVELT ROAD
GLEN ELLYN, IL 60137

ARKANSAS, COLORADO, IDAHO, KANSAS, LOUISIANA, MONTANA, NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, OR WYOMING, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION IV
MATERIAL RADIATION PROTECTION SECTION
811 RYAN PLAZA DRIVE, SUITE 1000
ARLINGTON, TX 76011

ALASKA, ARIZONA, CALIFORNIA, HAWAII, NEVADA, OREGON, WASHINGTON, AND U.S. TERRITORIES AND POSSESSIONS IN THE PACIFIC, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION V
MATERIAL RADIATION PROTECTION SECTION
1450 MARIA LANE, SUITE 210
WALNUT CREEK, CA 94605

PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S. NUCLEAR REGULATORY COMMISSION JURISDICTION.

1 THIS IS AN APPLICATION FOR (Check appropriate item)

- A. NEW LICENSE
- B. AMENDMENT TO LICENSE NUMBER
- C. RENEWAL OF LICENSE NUMBER 08-01738-02

2 NAME AND MAILING ADDRESS OF APPLICANT (Include Zip Code)

Department of the Army
Walter Reed Army Medical Center
ATTN: Executive Officer, HSHL-XO
Washington, D.C. 20307-5001

3 ADDRESS(ES) WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED

See Item #3

4 NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Arthur G. Samiljan, Lieutenant Colonel, MS

TELEPHONE NUMBER

(301) 427-5161

SUBMIT ITEMS 5 THROUGH 11 ON 8 1/2" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.

5 RADIOACTIVE MATERIAL
a. Isotopes and mass number, b. chemical and/or physical form, and c. maximum amount which will be possessed at any one time.

6 PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED

7 INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING AND EXPERIENCE.

8 TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS

9 FACILITIES AND EQUIPMENT

10 RADIATION SAFETY PROGRAM

11 WASTE MANAGEMENT

12 LICENSEE FEES (See 10 CFR 170 and Section 170.31)
FEE CATEGORY Exception AMOUNT ENCLOSED \$ (5) IOCFR170.11(a)

13 CERTIFICATION (Must be completed by applicant) THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT

THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 20, 32, 33, 34, 35, AND 40 AND THAT ALL INFORMATION CONTAINED HEREIN IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF

WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 25, 1946 (22 STAT. 748) MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION

SIGNATURE - CAPTION AND DESIGNER

TYPED/PRINTED NAME

TITLE Commanding Officer

DATE

Ronald R. Blanck

Ronald R. Blanck, Major General

24 Jan 93

ANNUAL RECEIPTS		IS VOLUNTARY? <input type="checkbox"/> YES <input type="checkbox"/> NO	
< \$250K	\$1M - 3.9M	B. NUMBER OF EMPLOYEES (Total for entire facility including contract employees)	C. NUMBER OF BEDS
\$250K - 500K	\$3.9M - 7M		
\$500K - 750K	\$7M - 10M		
\$750K - 1M	> \$10M		

WOULD YOU BE WILLING TO FURNISH COST INFORMATION (Enter one for each item) ON THE ECONOMIC IMPACT OF CURRENT NRC REGULATIONS OR ANY FUTURE PROPOSED NRC REGULATIONS THAT MAY AFFECT YOU? (NRC regulations permit it to protect confidential commercial or financial proprietary information furnished to the agency in confidence)

YES NO

FOR NRC USE ONLY

TYPE OF FEE	FEE LOG	FEE CATEGORY	COMMENTS	APPROVED BY
AMOUNT RECEIVED	CHECK NUMBER	FEE EXEMPT		DATE

PRIVACY ACT STATEMENT ON THE REVERSE

ITEM #3: ADDRESS(ES) WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED

Locations of use: Walter Reed Army Medical Center, Washington, D.C.; WRAMC Forest Glen Section and Annex, Silver Spring, Maryland; Walter Reed Army Institute of Research Animal Holding Facility, Fort Meade, Maryland; U.S. Army Medical Laboratory, WRAMC Department of Pathology, Fort Meade, Maryland; U.S. Army Institute of Dental Research Facility, Fort Meade, Maryland; Rickman Building, 13 Taft Court, Rockville, Maryland; Key West Research Center, 9620 Medical Center Drive, Rockville, Maryland; and The Gillette Building, 1413 Research Boulevard, Rockville, Maryland.

ITEM #5 RADIOACTIVE MATERIAL and
ITEM #6 PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED

<u>CHEMICAL AND MASS NUMBER</u>	<u>CHEMICAL AND PHYSICAL FORM</u>	<u>MAXIMUM ACTIVITY</u>	<u>AUTHORIZED USE</u>
A. Any byproduct material with atomic numbers 3-83	A. Any	A. 400 mCi of each radionuclide with a total possession limit of 26 curies	A. through R. Medical research, diagnosis, and therapy; research and development as defined in 10 CFR 30.4
B. Iodine 131	B. Any	B. 2 curies	
C. Xenon 133	C. Any	C. 2 curies	
D. Krypton 85	D. Any	D. 1 curie	
E. Phosphorus 32	E. Any	E. 2 curies	
F. Carbon 14	F. Any	F. 2 curies	
G. Iodine 125	G. Any	G. 1 curie	
H. Iridium 192	H. Any	H.	
I. Chromium 51	I. Any	I. 750 mCi	
J. Sulfur 35	J. Any	J. 1 curie	
K. Hydrogen 3	K. Any	K. 5 curies	
L. Molybdenum 99	L. Molybdenum 99/Technetium 99m Generators	L. 23 curies	
M. Technetium 99m	M. Any	M. 23 curies	
N. Strontium 90	N. Sealed sources	N.	
O. Cesium 137	O. Sealed sources	O.	
P. Gadolinium 153	P. Sealed sources	P.	

Ex 2

<u>CHEMICAL AND MASS NUMBER</u>	<u>CHEMICAL AND PHYSICAL FORM</u>	<u>MAXIMUM ACTIVITY</u>	<u>AUTHORIZED U</u>
Q. Iodine 125	Q. Sealed sources (Norland model 178A591A, AECL Models C235 or C324, or Amersham Corp. Model IMC.P2)	Q. 4 sources, not to exceed 300 mCi each	
R. Iodine 125	R. Sealed sources (3M Company seeds)	R. 500 mCi	
S. Cesium 137	S. Sealed sources	S.	S. through X. Research and development as defined in 10 CFR 30.4; teaching
T. Cobalt 60	T. Sealed sources	T.	
U. Americium 241	U. Any	U. 100 uCi	
V. Americium 241	V. Sealed sources	V.	
W. Nickel 63	W. Sealed sources and foils	W. 1 curie	
X. Iodine 129	X. Sealed sources	X. 1 curie	
Y. Thorium	Y. Any	Y. 5 kgms	Y. and Z. Teaching and laboratory research
Z. Uranium	Z. Any	Z. 50 kgms	
AA. Uranium depleted in Uranium 235	AA. Plated metal	AA. 400 kgms	AA. Shielding
BB. Americium 241	BB. Sealed sources	BB.	BB. Standards and reference sources CC. In an Eberline Instrument Corp. Model 8150-150 CS for calibration of instruments DD. instrument calibration
CC. Cesium 137	CC. Sealed source	CC.	
DD. Cesium 137	DD. Sealed sources	DD.	

ITEM #7

7.1 and 7.2 Licensed material shall be used by or under the supervision of individuals designated by the Walter Reed Army Medical Center Radiation Control Committee. The training and experience of authorized users will be evaluated using the criteria in 10 CFR 35, Subpart J. The Radiation Control Committee may grant case-by-case exceptions.

Ex 2

<u>CHEMICAL AND MASS NUMBER</u>	<u>CHEMICAL AND PHYSICAL FORM</u>	<u>MAXIMUM ACTIVITY</u>	<u>AUTHORIZED USE</u>
Q. Iodine 125	Q. Sealed sources (Norland model 178A591A, AECL Models C235 or C324, or Amersham Corp. Model IMC.P2)	Q. 4 sources, not to exceed 300 mCi each	
R. Iodine 125	R. Sealed sources (3M Company seeds)	R. 500 mCi	
S. Cesium 137	S. Sealed sources	S.	S. through X. Research and development as defined in 10 CFR 30.4; teaching
T. Cobalt 60	T. Sealed sources	T.	
U. Americium 241	U. Any	U. 100 uCi	
V. Americium 241	V. Sealed sources	V.	
W. Nickel 63	W. Sealed sources and foils	W. 1 curie	
X. Iodine 129	X. Sealed sources	X. 1 curie	
Y. Thorium	Y. Any	Y. 5 kgms	Y. and Z. Teaching and laboratory research
Z. Uranium	Z. Any	Z. 50 kgms	Z. Teaching and laboratory research
AA. Uranium depleted in Uranium 235	AA. Plated metal	AA. 400 kgms	AA. Shielding
BB. Americium 241	BB. Sealed sources	BB.	BB. Standards and reference sources
CC. Cesium 137	CC. Sealed source	CC.	CC. In an Eberline Instrument Corp. Model 8150-150 CS. for calibration of instruments
DD. Cesium 137	DD. Sealed sources	DD.	DD. instrument calibration

ITEM #7

7.1 and 7.2 Licensed material shall be used by or under the supervision of individuals designated by the Walter Reed Army Medical Center Radiation Control Committee. The training and experience of authorized users will be evaluated using the criteria in 10 CFR 35, Subpart J. The Radiation Control Committee may grant case-by-case exceptions.

EX-2

7.3 Radiation Safety Officer: Lieutenant Colonel Arthur G. Samiljan, Chief, Health Physics Office, Walter Reed Army Medical Center. Training and experience included at ATT 7.3.

ITEM #8 We will establish and implement the model training program that was published in Appendix A to Regulatory Guide 10.8, Revision 2, and have appended a table ATT 8.1 that identifies the groups of workers who will receive training and the method and frequency of training.

ITEM #9

9.1 Enclosed at ATT 9.1 are drawings of the nuclear medicine area, a detailed drawing of the nuclear pharmacy and the source storage area in radiation therapy. The research laboratories at Walter Reed are basic biomedical research facilities with impervious floors, walls and counter tops and whatever equipment is needed for the specific research and isotopes involved. All isotope laboratories are evaluated by the Health Physics Office and approved by the Radiation Control Committee.

9.2 We will establish and implement the model procedure for calibrating survey instruments that was published in Appendix B to Regulatory Guide 10.8, Revision 2.

9.3 We will establish and implement the model procedure for calibrating our dose calibrator that was published in Appendix C to Regulatory Guide 10.8, Revision 2.

9.4 We will establish and implement the model personnel external exposure monitoring program published in Appendix D to Regulatory Guide 10.8, Revision 2, with the exception that some of our personnel who have been shown to receive much less than the ALARA limit have their monitors changed on a quarterly basis.

9.5 NA

9.6 See ATT 9.6

ITEM #10

10.1 The Charter for the Radiation Control Committee and the delegation of authority for the Radiation Protection Officer are addressed in an ARMY Technical Bulletin (TB MED 525). The duties of each are included at ATT 10.1.1. Walter Reed AMC also has a regulation which lists all standing committees at WRAMC including the Radiation Control Committee. The Composition of the RCC will include:

- Deputy Commander (Chairman)
- Chief, Department of Medicine
- Chief, Department of Nursing
- Chief, Department of Pathology and Area Lab Services
- Chief, Department of Radiology

Chief, Radiation Therapy Service
Chief, Nuclear Medicine Service
Health Physics Officer (RPO)
Senior Nuclear Pharmacist
Assistant Health Physics Officer (alternate RPO) (Recorder)
Director, WRAIR
Radiation Safety Officer, WRAIR
Radiation Protection Officer, AFIP

We will also include any others required by 10 CFR 35. The orders delegating authority to Lieutenant Colonel Samiljan are included at ATT 10.1.2.

10.2 We will establish and implement the model ALARA program published in Appendix G to Regulatory Guide 10.8, Revision 2.

10.3 We will establish and implement the model procedure for leak-testing sealed sources that was published in Appendix H to Regulatory Guide 10.8, Revision 2.

10.4 We will establish and implement the model safety rules published in Appendix I to Regulatory Guide 10.8, Revision 2.

10.5 We will establish and implement the model spill procedures published in Appendix J to Regulatory Guide 10.8, Revision 2.

10.6 We will establish and implement the model guidance for ordering and receiving radioactive material that was published in Appendix K to Regulatory Guide 10.8, Revision 2.

10.7 We will establish and implement the model procedure for opening packages that was published in Appendix L to Regulatory Guide 10.8, Revision 2.

10.8 We will establish and implement the model procedure for a unit dosage record system that was published in Appendix M.1 to Regulatory Guide 10.8, Revision 2.

10.9 We will establish and implement the model procedure for a multidose vial record system that was published in Appendix M.2 to Regulatory Guide 10.8, Revision 2.

10.10 We will establish and implement the model procedure for measuring and recording molybdenum concentration that was published in Appendix M.3 to Regulatory Guide 10.8, Revision 2.

10.11 We will establish and implement the model procedure for keeping an inventory of implant sources that was published in Appendix M.4 to Regulatory Guide 10.8, Revision 2.

10.12 We will establish and implement the model procedure for area surveys that was published in Appendix N to Regulatory Guide 10.8, Revision 2.

10.13.1 We will collect spent noble gas in a shielded trap and monitor the trap effluent with an air contamination monitor that we will check regularly according to the manufacturer's instructions.

10.13.2 We will collect spent aerosol in a shielded, single-use trap.

10.13.3 We will follow the model procedure for calculating airborne effluent concentration that was published in Appendix O.2 to Regulatory Guide 10.8, Revision 2.

10.13.4 We will calculate spilled gas clearance times according to the procedure that was published in Appendix O.4 to Regulatory Guide 10.8, Revision 2.

10.14 We will establish and implement the model procedure for radiation safety during radiopharmaceutical therapy that was published in Appendix P to Regulatory Guide 10.8, Revision 2, except for the provision at ATT 10.14.

10.15 We will establish and implement the model procedure for radiation safety during implant therapy that was published in Appendix Q to Regulatory Guide 10.8, Revision 2.

10.16 General Safety Procedures See ATT 10.16

ITEM #11

11.1 We will establish and implement the general guidance and model procedures for waste disposal that were published in Appendix R to Regulatory Guide 10.8, Revision 2, except for the provision to hold for decay-in-storage material with a physical half-life of less than 90 days, as previously approved by the NRC (see ATT 11.1.1, ATT 11.1.2, and ATT 11.1.3). We also generate a large volume of RIA waste at the Drug Testing Lab at Ft. Meade (25 drums per month and increasing) which we would like to be able to hold for decay for only 5 half-lives and dispose of, if all other conditions are met. This waste is mostly empty, washed test tubes which are only minimally contaminated prior to the decay in storage process. This waste is generated at a location where RIA kits are the only radioactive material use and the waste is kept segregated from all other laboratory waste in separate sealed 55 gal. drums.

11.2 See Item 11.1.

**TRAINING AND EXPERIENCE
OF AUTHORIZED RADIOISOTOPE USERS**

1. NAME OF AUTHORIZED USER (Last, First, MI) SAMILJAN, ARTHUR G.	2. STATE OR TERRITORY IN WHICH LICENSED (MD, DDS, DVM, etc.)
---	---

RANK/ GRADE LTC	ORGANIZATION WRAMC	ORGANIZATIONAL DIVISION Health Physics	BLDG./ ROOM NO. Bldg 188 FGS	WRAMC AUTHORIZATION NO. 221
------------------------	---------------------------	---	-------------------------------------	------------------------------------

3. CERTIFICATION		
SPECIALTY BOARD A	CATEGORY B	MONTH AND YEAR CERTIFIED C

4. FORMAL EDUCATION		HIGHEST ACADEMIC DEGREE ATTAINED
Higher Educational Institutions Attended	Type of Program Pursued and Dates of Attendance	Degree, Diploma or Certificate Received and Date
a. <u>University of FL</u>	<u>MS Env Eng (Rad Hlth)</u>	<u>MS</u> EX 6
b. _____	_____	_____
c. _____	_____	_____
d. _____	_____	_____

5. TRAINING RECEIVED IN BASIS RADIOISOTOPE HANDLING TECHNIQUES			
FIELD OF TRAINING A	LOCATION AND DATE(S) OF TRAINING (include course title if known) B	TYPE AND LENGTH OF TRAINING	
		LECTURE LABORATORY COURSES (Hours) C	SUPERVISED LABORATORY EXPERIENCE (Hours) D
a. RADIATION PHYSICS AND INSTRUMENTATION	University of Florida Kirtland AFB, AFRI	60	20
b. RADIATION PROTECTION	"	60	20
c. MATHEMATICS PERTAINING TO THE USE AND MEASUREMENT OF RADIOACTIVITY	"	100	20
d. RADIATION BIOLOGY	"	60	20
e. RADIOPHARMACEUTICAL CHEMISTRY			

CURRICULUM VITAE

for

ARTHUR G. SAMILJAN, Lieutenant Colonel

DATE AND PLACE OF BIRTH: []

YEARS OF ACTIVE MILITARY SERVICE: 20 years

PRESENT ASSIGNMENT: (21 Jun 91 to present)
Chief, Health Physics Office; RPO
Walter Reed Army Medical Center,
Washington, DC 20307-5001

MILITARY EDUCATION (pertinent to radiation protection):

1. Medical Effects of Nuclear Weapons Course, 8-12 Sep 86
Armed Forces Radiobiology Research Institute
Bethesda, Maryland
2. Army Medical Department Physics and Military Medicine Course,
26-30 Oct 87
U.S. Army Environmental Hygiene Agency
Aberdeen Proving Ground, Maryland

(included presentations on management of radiation protection
programs and topical radiation protection issues)
3. Radiological Hazards Associated with Depleted Uranium
Munitions Course, 16-20 Nov 87
U.S. Army, Belvoir Research, Development & Engineering
Center, Fort Belvoir, Virginia
4. Laser Microwave Hazards Workshop, 25-29 Apr 88
U.S. Army Environmental Hygiene Agency
Aberdeen Proving Ground, Maryland
5. The Army Medical Department Radiation Health Sciences Course,
24-28 Oct 88
U.S. Army Environmental Hygiene Agency
Aberdeen Proving Ground, Maryland

(included presentations on management of radiation protection
programs and topical radiation protection issues)
6. Senior Officer Nuclear Accident Course, 24-27 Apr 89
InterService Nuclear Weapons School
Kirtland Air Force Base, New Mexico

Ex 6

MILITARY EDUCATION (continued):

7. Management of Radiation Accidents and Emergency Preparedness Training Course, 5-9 Jun 89
U.S. Army, Belvoir Research, Development & Engineering Center, Fort Belvoir, Virginia
8. Nuclear Weapons Incident Seminar, 7-8 Mar 91
Naval Base
Norfolk, Virginia
9. Medical X-Ray Survey Techniques Course, 15-26 Apr 91
Academy of Health Sciences
Fort Sam Houston, Texas

CIVILIAN EDUCATION (relative to radiation protection):

Graduate Study leading to Master of Science Degree in Environmental Engineering (emphasis in Health Physics)
Aug 84 - Dec 85
University of Florida
Gainesville, Florida

HEALTH PHYSICS EXPERIENCE:

1. Nuclear, Biological, and Chemical Officer
Mar 76 - Jun 77
44th Medical Brigade
Fort Bragg, North Carolina

(included designing and supervising the training of 100 personnel in battle field radiation detection, survey techniques, monitoring, decontamination, and protection)
2. Nuclear, Biological, and Chemical Officer
Jun 77 - Dec 78
5th General Hospital
Bad Cannstatt, Germany

(included designing and supervising the training of 350 personnel in battle field radiation detection, survey techniques, monitoring, decontamination, and protection)
3. Manager, Department of the Army, Nuclear Test Personnel Review
Jan 86 - Dec 87
Environmental Support Group
Washington, DC

(included the identification, dose assessments, and notification of all Army personnel who participated in the atmospheric nuclear testing program from 1944 to 1963.

4. Medical Health Physics Consultant
Dec 87 - Jun 89
Headquarters, Army Materiel Command
Office of the Command Surgeon
Alexandria, Virginia

(included being the Commanding General's action officer for health aspects of ionizing and nonionizing radiation as applied to the command's workforce, and technical advisor on health hazard assessment of new materiel and to related materiel management processes)

5. Contract Manager, Johnston Island Plutonium Clean-up Project
Jun 89 - Aug 90
Field Command
Defense Nuclear Agency
Johnston Atoll

(included planning, directing, and supervising the clean-up project, conducting radiological site surveys, and establishing procedures for packaging, storing, and disposal of radioactive waste)

6. Chief, Operations Branch/Assistant RPO
Aug 90 - Jun 91
Health Physics Office
Walter Reed Army Medical Center
Washington, DC

(included reviewing x-ray compliance surveys and radioisotope laboratory room surveys, monitoring radiation therapy procedures, performing x-ray shielding evaluations and dose assessments, and assisting the RPO in the preparation and execution of all radiation protection policies in support of the medical center's NRC license, and ionizing and nonionizing radiation producing devices)

7. Chief, Health Physics Office/Radiation Protection Officer
Jun 91 - Present
Health Physics Office
Walter Reed Army Medical Center
Washington, DC

(Manage 20 health physicists and health physics technicians providing radiation safety support to Walter Reed Army Medical Center, Walter Reed Army Institute of Research, Armed Forces Institute of Pathology, and other federal agencies in the Washington, DC regional area. Executive agent for two NRC Licenses.)

ATT 8.1

GROUP	METHOD	FREQUENCY
Authorized Users	Lecture	Annually
Ward Nursing Staff	Lecture or Video	Annually
Radiation Therapy	Lecture or Video	Annually
Housekeeping	Lecture or Video	Annually
Maintenance	Lecture or Video	Annually
Security	Lecture or Video	Annually
Firefighters	Lecture or Video	Annually

ATT 9.6

In addition to the Facilities described in Item 9.1 the following equipment and control systems are available as required for the safe handling of radioactive material:

- o Remote handling equipment including jaws, vices, forceps, and remote handling tongs of varying lengths.

- o Storage containers including steel safes, lead lined boxes, steel drums, lead pigs, and lead storage containers both fixed and movable.

- o Shielding including movable lead shields for shielding patients, L shields both lead and plastic, and shielding materials (e.g. lead bricks, lead shot, lead wool, plastic sheet etc.).

- o Radiation measuring and counting equipment including liquid scintillation counting systems, gamma well counting systems, alpha gas flow counting systems, portable surveys instruments including GM, Ion chamber, and Scintillation detectors.

- o Ventilation Control systems including Fume hoods with HEPA particulate filters, and iodination filter boxes with charcoal filters and charcoal sampling systems for use with volatile isotopes.

ATT 10.1.1

f. The Radiation Control Committee will--

(1) Meet at least quarterly and at the call of the chairman.

(2) Recommend approval or disapproval of each type of radiation source from the standpoint of radiological health and safety of patients and working personnel and other factors established for the medical use of these sources.

(3) Recommend individual users for each type of procedure with each individual radionuclide and ensure that any physician authorized to use radioactive material in humans meets the criteria specified in part 35, title 10, Code of Federal Regulations (10 CFR 35). Recommendations will be consistent with the limits and conditions of the NRC license and DARA.

(4) Recommend individual pharmacists and individual compounding protocols for compounding radioactive drugs (radiopharmaceuticals) or radiopharmaceutical kits to be administered to patients (if the procedure is permitted to be performed by NRC license or DARA).

(5) Prescribe, if required, special conditions to be permitted in the work area and special procedures or work rules for use of radiation sources.

(6) Formulate and review the radiation protection training program.

(7) Monitor radiation exposures within the command and recommend actions to keep exposures as low as is reasonably achievable (ALARA). As a minimum, the collective dose to all radiation workers, average dose, and highest individual dose will be reviewed at quarterly meetings.

(8) Formally review, at least annually, the policies and procedures established to maintain low exposures.

(9) Approve the training and experience of the nuclear pharmacist.

g. The RPO, in addition to the responsibilities in 10 CFR 35, 21, will--

(1) Exercise staff supervision over the Radiation Protection Program.

(2) Provide consultation and advice on the degree of hazards associated with radiation and effectiveness of control measures.

(3) Advise and assist the commander and radiation workers in all matters pertaining to radiation protection, including instructing and training of workers (users) and others in the safe use of protective equipment and radiation producing devices.

(4) Ensure all radioactive materials are properly receipted, used, stored, handled, shipped, and disposed of according to applicable directives.

(5) Formulate and implement the Radiation Protection Program.

(6) Formulate, implement, and supervise an active, aggressive, documented program designed to keep radiation doses to levels which are ALARA.

(7) Review the current and proposed uses of radiation sources for compliance with regulations and approved procedures.

(8) Review standing operating procedures for operations involving sources of ionizing radiation before submission to the Radiation Control Committee.

(9) Review procurement of all radioactive materials to ensure compliance with NRC licenses or DARA conditions.

(10) Ensure radiation survey and/or detection instruments used in radiation protection are properly calibrated and are available to radiation workers.

(11) Ensure all radiation shields, containers, and handling equipment are maintained in satisfactory condition.

(12) Ensure the required radiation warning signs are posted.

(13) Ensure that a physical inventory of radioactive materials is conducted every 3 months.

(14) Ensure that radiation surveys are performed at least quarterly and that leak tests are performed semiannually (NRC Reg Guide No. 8.23).

(15) Evaluate hazard potential and adequacy of protective measures for existing and proposed operations.

(16) Monitor situations where higher than normal levels of radiation or radioactive contaminants are suspected.

(17) Investigate radiation accidents and incidents and overexposures to determine the cause and take steps to prevent recurrence.

(18) Terminate a program or procedure involving the use of radioactive material or radiation producing devices which are determined to be a medical threat to health and property.

(19) Keep all licenses and DARAs up to date and initiate amendments and requests for renewals when appropriate.

(20) Maintain a current registry of ionizing radiation producing devices, such as x-ray machines, per TB MED 521.

10.13.1 We will collect spent noble gas in a shielded trap and monitor the trap effluent with an air contamination monitor that we will check regularly according to the manufacturer's instructions.

10.13.2 We will collect spent aerosol in a shielded, single-use trap.

10.13.3 We will follow the model procedure for calculating airborne effluent concentration that was published in Appendix O.2 to Regulatory Guide 10.8, Revision 2.

10.13.4 We will calculate spilled gas clearance times according to the procedure that was published in Appendix O.4 to Regulatory Guide 10.8, Revision 2.

10.14 We will establish and implement the model radiation safety during radiopharmaceutical therapy published in Appendix P to Regulatory Guide 10.8, except for the provision at ATT 10.14.

Continue exemption

10.15 We will establish and implement the model radiation safety during implant therapy that was published in Appendix Q to Regulatory Guide 10.8, Revision 2.

10.16 General Safety Procedures See ATT 10.16

ITEM #11

11.1 We will establish and implement the general model procedures for waste disposal that were published in Appendix R to Regulatory Guide 10.8, Revision 2, except for the provision to hold for decay-in-storage material with a half-life of less than 90 days, as previously approved (see ATT 11.1.1, ATT 11.1.2, and ATT 11.1.3). We have a large volume of RIA waste at the Drug Testing Lab at [redacted] (25 drums per month and increasing) which we would like to be able to hold for decay for only 5 half-lives and dispose of, if all other conditions are met. This waste is mostly empty, washed test tubes which are only minimally contaminated prior to the decay in storage process. This waste is generated at a location where RIA kits are the only radioactive material used and the waste is kept segregated from all other laboratory waste in separate sealed 55 gal. drums.

*Decay to 5
lives & I
← see Plan J*

11.2 See Item 11.1.

10.13.1 We will collect spent noble gas in a shielded trap and monitor the trap effluent with an air contamination monitor that we will check regularly according to the manufacturer's instructions.

10.13.2 We will collect spent aerosol in a shielded, single-use trap.

10.13.3 We will follow the model procedure for calculating airborne effluent concentration that was published in Appendix O.2 to Regulatory Guide 10.8, Revision 2.

10.13.4 We will calculate spilled gas clearance times according to the procedure that was published in Appendix O.4 to Regulatory Guide 10.8, Revision 2.

10.14 We will establish and implement the model procedure for radiation safety during radiopharmaceutical therapy that was published in Appendix P to Regulatory Guide 10.8, Revision 2, except for the provision at ATT 10.14.

10.15 We will establish and implement the model procedure for radiation safety during implant therapy that was published in Appendix Q to Regulatory Guide 10.8, Revision 2.

10.16 General Safety Procedures See ATT 10.16

ITEM #11

11.1 We will establish and implement the general guidance and model procedures for waste disposal that were published in Appendix R to Regulatory Guide 10.8, Revision 2, except for the provision to hold for decay-in-storage material with a physical half-life of less than 90 days, as previously approved by the NRC (see ATT 11.1.1, ATT 11.1.2, and ATT 11.1.3). We also generate a large volume of RIA waste at the Drug Testing Lab at Ft. Meade (25 drums per month and increasing) which we would like to be able to hold for decay for only 5 half-lives and dispose of, if all other conditions are met. This waste is mostly empty, washed test tubes which are only minimally contaminated prior to the decay in storage process. This waste is generated at a location where RIA kits are the only radioactive material use and the waste is kept segregated from all other laboratory waste in separate sealed 55 gal. drums.

11.2 See Item 11.1.

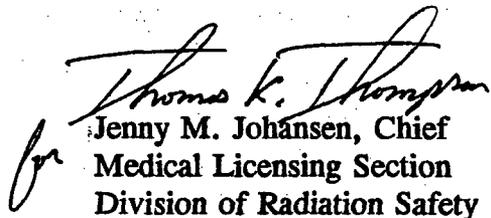
- ii. The action levels are determined to be ALARA based upon consideration of worker, environmental, and public exposures.

Submit a description of the procedures to be followed to determine these criteria are met.

We will continue our review upon receipt of this information. Please reply in duplicate to my attention at the Region I office and refer to Mail Control No. 116472. The reviewer for this licensing action is Pamela Henderson. If you have any technical questions regarding this deficiency letter please call the reviewer at (215) 337-6952.

If we do not receive a reply from you within 30 calendar days from the date of this letter, we shall assume that you do not wish to pursue your application.

Sincerely,


for Jenny M. Johansen, Chief
Medical Licensing Section
Division of Radiation Safety
and Safeguards

Enclosure: Regulatory Guide 8.23



DEPARTMENT OF THE ARMY
WALTER REED ARMY MEDICAL CENTER
WASHINGTON, DC 20307-5001



REPLY TO
ATTENTION OF:

24 November 1992

Health Physics Office

United States Nuclear Regulatory Commission
Attention: Chief, Medical Licensing Section
Division of Radiation Safety and Safeguards
475 Allendale Road
King of Prussia, Pennsylvania 19406-1415

Dear Ms. Jenny M. Johansen:

We provide the following information in reference to Mail Control No. 116472 and in response to your memo, dated 16 November 1992, requesting additional information concerning our dedicated iodine-131 therapy room.

As a matter of standing operating procedure, the dedicated therapy room, Room 7437, remains closed and locked when there are no iodine therapies. Only the Health Physics Office possesses a key to that room.

Decontamination limits for this room will be the restricted area action limits established in NRC Regulatory Guide 8.23, "Radiation Safety in Medical Institutions". Health Physics Office personnel will decontaminate the room below this level of removable contamination prior to admittance of an iodine-131 radiation therapy patient into Room 7437.

We hope that this information will satisfy your questions and permit you to grant our exemption to 10 CFR 35.315(a)(7). We appreciate your prompt attention to this matter.

Your point of contact for this matter is the undersigned at (301)-427-5104/5107.

Sincerely,

ARTHUR G. SAMILJAN
Lieutenant Colonel, US Army
Health Physics Officer

ATT 10.16

Following are general rules for the safe use of radioactive materials:

1. Wear laboratory coats or other protective clothing at all times in areas where radioactive materials are used.
2. Wear disposable gloves at all times while handling radioactive materials.
3. Monitor hands and clothing for contamination after each procedure or before leaving area.
4. Do not eat, drink smoke, or apply cosmetics in any area where radioactive material is stored or used.
5. Wear assigned personnel monitoring device(s) at all times while in areas where radioactive materials are used or stored. Whole body monitoring device(s) should be worn at chest or waist level.
6. Dispose of radioactive waste only in specifically designated receptacles.
7. Never pipette by mouth.
8. Confine radioactive solutions in covered containers plainly identified and labeled with name of compound, radionuclide, date activity, and radiation level, if applicable
9. Always transport radioactive materials in appropriate shielding and containers.



DEPARTMENT OF THE ARMY
WALTER REED ARMY MEDICAL CENTER
WASHINGTON, D.C. 20307-5001

REPLY TO
ATTENTION OF:

19 JUN 1990

HSHL-H-HP (385-11m)

MEMORANDUM THRU

Commander, US Army Health Services Command, ATTN: HSCL-P, Fort
Sam Houston, TX 78234-6000

HQDA (SGPS-PSP-E), 5109 Leesburg Pike, Falls Church, VA 22041-
3258

FOR US Nuclear Regulatory Commission, Region I, Nuclear Material
Safety Section A, 475 Allendale Road, King of Prussia, PA
19406

SUBJECT: Amendment of US Nuclear Regulatory Commission License
No. 08-01738-02

1. Request that NRC License No. 08-01738-02 for Walter Reed Army Medical Center be amended to reflect a change in the Radiation Safety Officer from 1Lt. Allen W. Anthony to LTC Peter H. Myers. LTC Myers has been assigned as the Chief, Health Physics Office at Walter Reed AMC since August 1989. A Training and Experience Form and a Curriculum Vitae for LTC Myers are enclosed (Enclosures 1 and 2).
2. Request that Walter Reed's license also be amended to allow the holding for decay of radioactive waste containing isotopes with half lives up to ninety (90) days. We have been decaying waste with half lives of sixty five (65) days or less for a few years and have a good program for segregating, packaging, storing, and disposing of this material. We have the space to hold material for three (3) years instead of the current twenty two (22) months. Some protocols at Walter Reed use P-32 and S-35 in the same labs or even the same experiments, requiring that all the waste be packaged for burial because of the S-35 half life. Some animal studies use three (3) or four (4) different microspheres to measure blood flow at different time points in an experiment, Cr-51, Ru-103, and Ce-141 (all with half

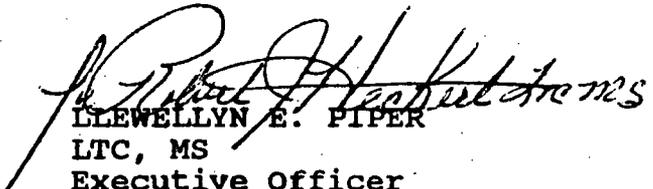
HSHL-H-HP

SUBJECT: Amendment of US Nuclear Regulatory Commission License
No. 08-01738-02

lives of less than sixty five (65) days) may be used with Sc-46
so all the waste has to be packaged for burial. This amendment
would reduce our solid waste volume to the burial ground by 10-
20%.

FOR THE COMMANDER:

2 Encls


LEWELLYN E. PIPER
LTC, MS
Executive Officer



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
WALTER REED ARMY MEDICAL CENTER
WASHINGTON, D.C. 20307-5001



HSHL-H-HP (385-11m)

15 March 1991

MEMORANDUM FOR US Nuclear Regulatory Commission, Region I,
Nuclear Material Safety Section A, 475
Allendale Road, King of Prussia, PA 19406

SUBJECT: Amendment of US Nuclear Regulatory Commission License
No. 08-01738-02. Additional information requested Docket No.
030-01317, Control No. 112925.

This is in reference to your request in a letter dated February 5, 1991 for additional information on our decay-in-storage program. The following information is provided in response to those questions.

1. The existing program for research waste with half-lives of 65 days or less generates 50-60 55gal. drums of compacted trash per year. The expected increase with half-lives of 90 days or less could raise the total to 60-75 drums per year. We currently hold this waste for 24 months to ensure at least 10 half-lives for the longest isotopes, which means we have between 100 and 120 drums in storage at any one time. Holding all our short half-life waste for 30 months could mean up to 185 drums in storage at any one time.
2. Enclosure 1 is a copy of one of the "Terms and Conditions" which all users of radioactive material at Walter Reed must follow. All the solid radioactive waste at Walter Reed is collected, screened, and packaged by the Health Physics Office. Bags of waste are examined by the health physics personnel when they are collected and again when they are compacted to ensure the proper segregation and defacing of any radioactive labels has occurred.
3. When the solid, short half-life, radioactive material is compacted it is in a 55 gal. steel drum (DOT 17H). The drum is sealed shut, the out side is marked with an I.D. number with an indelible marker, and the following information is recorded; the drum I.D., all isotopes in the drum and the initial activity of each, the date the drum was closed. When this drum is ready for disposal it is re-entered in a local disposal log and data base which includes; I.D. number, date closed, date disposed, survey instrument model, serial number and calibration date, background

HS HL-H-HP (385-11m)

SUBJECT: Amendment of US Nuclear Regulatory Commission License No. 08-01738-02. Additional information requested Docket No. 030-01317, Control No. 112925.

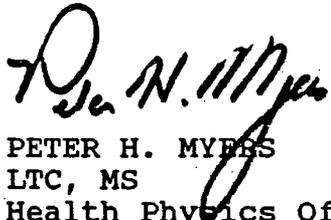
readings, maximum readings of waste, and initials of person performing survey and waste disposal.

4. When the waste has been held for decay for at least 10 half-lives of the longest half-life material present, the drums are moved to a low background area and surveyed with a portable survey meter with a remote GM or scintillation probe. If no readings above background are found the drums are opened and the material is surveyed again as it is removed from the drum. Currently we are using a Ludlum model 2 with a GM probe which is calibrated in mr/hr. The normal background is approximately 0.05 mr/hr which is 10% of full scale on the lowest scale. If I-125 is the major remaining contaminate a low energy gamma scintillation probe may also be used to ensure no external radiation levels above background are present. The waste when originally packaged contains at most a few millicuries of activity, after at least 10 half-lives it contains at most a few microcuries of activity and no measurable external exposure. In addition this waste will continue to decay in a land fill at the rate of at least 4 half-lives per year making the likelihood of any internal deposition remote. Any biological waste held for decay will be incinerated at the conclusion of the decay period which will preclude the ingestion of this material.

5. The medical waste in question will be compacted into 55 gal. steel drums as outlined in question 3's response.

6. The waste storage facility at WRAMC is a ⁷ This building is constructed of concrete, concrete block and brick, it has no windows and very little flammable material involved in it's construction. This building is dry and heated and has a maximum capacity to hold two or three times the amount of waste we will be holding when this amendment is granted. This building is under the sole control of the Health Physics Office with

1 Encl


PETER H. MYERS
LTC, MS
Health Physics Officer

EX 2

HEALTH PHYSICS
WALTER REED ARMY MEDICAL CENTER
Washington, D.C. 20307-5001

CONDITION NO. 4

For

RADIOACTIVE MATERIAL AUTHORIZATIONS

RADIOACTIVE WASTE

1. General. Radioactive waste from Walter Reed Army Medical Center and tenant activities will be controlled, packaged, transported, and disposed of in accordance with AR 385-11, "Ionizing Radiation Protection;" Title 10, Code of Federal Regulations; Title 49, Code of Federal Regulations; Nuclear Regulatory Commission Licenses issued to WRAMC; applicable provisions of State Government requirements for waste disposal sites located within their jurisdiction; and the guidelines delineated herein.

2. Definitions:

a. Radioactive Material: Any material or combination of materials that spontaneously emits gamma rays, X-rays, alpha particles, beta particles, neutrons, or other atomic particles that are capable of producing ions, directly or indirectly by their passage through matter.

b. Radioactive Waste: Surplus items containing radioactive material, property contaminated with radioactive material to the extent that decontamination is economically unsound, and materials that have become contaminated during possession/use of radioactive material.

c. Activity: The number of nuclear transitions (disintegrations) occurring in a given quantity of material per unit time (disintegrations per second); expressed in units of Curies or Becquerels.

d. Specific Activity: Total activity of a given radionuclide per gram of a compound, element, or radioactive nuclide.

e. Curie: The special unit of activity. One curie equals 3.700×10^{10} nuclear transitions per second. (Abbreviated Ci.). Several fractions of the curie are in common usage:

(1) Microcurie: One-millionth of a curie (3.7×10^4 disintegrations per sec.). Abbreviated μCi .

(2) Millicurie: One-thousandth of a curie (3.7×10^7 disintegrations per sec.). Abbreviated mCi .

REVISION 2, effective 13 Apr 87

ATTACHMENT 11.1.2

Encl 1

CONDITION NO. 4 FOR RADIOACTIVE MATERIAL AUTHORIZATIONS (RADIOACTIVE WASTE)

- (12) Animal Carcasses/Animal Waste: Short half-life.
- (13) Animal Carcasses/Animal Waste: Long half-life.
- (14) Animal Carcasses: ≤ 0.05 Microcuries H-3 or C-14 per gram of animal tissue averaged over the entire weight of the animal.
- (15) Gas, Combustible.
- (16) Gas, Non-combustible.

b. Limiting the non-radioactive waste which is intermixed with radioactive waste to an absolute minimum.

c. Removing or obliterating all "Radioactive Material" labels on non-radioactive vendor shipping packages and on short half-life radioactive waste. Uncontaminated vendor shipping containers may be disposed of in the normal trash by the users. Short half-life waste will be delivered to Health Physics Office (HPO) collection points for subsequent storage, decay, and ultimate disposal in the normal trash when HPO personnel have determined that the waste has reached natural background radiation levels.

d. Storing used Mo-99/Tc-99m generators and other items of equipment containing radioactive material in designated areas only. The radiation labels will be removed on such items only when they reach background radiation levels.

e. Maintaining their inventory of radioactive waste to a practical minimum.

f. Controlling radioactive waste in their work areas to prevent unauthorized disposal by the custodial service. Magenta plastic bags will be used to contain radioactive waste. Magenta bags will not be used for other purposes.

g. Insuring that all radioactive waste is delivered to HPO collection point personnel for ultimate disposal.

h. Marking all radioactive waste containers with the radiation caution symbol and the words "Caution - Radioactive Waste" and/or "Caution -Radioactive Material." Plus "DO NOT EMPTY!"

i. Insuring that radioactive material is not released into the sanitary sewage system without the specific approval of the Health Physics Officer.

j. Insuring that decontamination of reusable equipment is only performed in laboratory sinks that have been authorized via their Radioactive Material Authorization. See Section II for specific requirements concerning this procedure.

CONDITION NO. 4 FOR RADIOACTIVE MATERIAL AUTHORIZATIONS (RADIOACTIVE WASTE)

i. Biological wastes (e.g., animal carcasses/animal waste) shall be prepared by the User in a manner that allows the waste to be readily packed in in a 30-gallon drum alternating 10-inch layers of waste and packing materials. Prepared biological waste shall be placed in double magenta plastic bags and tagged as previously indicated.

SECTION II - RELEASE OF RADIOACTIVITY INTO THE SANITARY
SEWAGE SYSTEM

1. Liquid waste will be released to the sanitary sewage system in accordance with Title 10, Code of Federal Regulations, Chapter 1, Part 20.303 (i.e., 10 CFR 20).

2. Unless specifically authorized by the Health Physics Office, all releases of radioactive liquid to the sanitary sewerage system will be conducted by the Health Physics Office to assure that the quantity of radioactive material released into the system by combined WRAMC disposal procedures does not exceed the following limits:

a. The quantity of any licensed or other radioactive material released into the system by WRAMC in any one day does not exceed the larger of paragraphs a(1) or (2) below.

(1) The quantity which, if diluted by the average daily quantity of sewage released into the sewer by WRAMC will result in an average concentration equal to the limits specified in Appendix B, Table I, Column 2 of 10 CFR 20 or

(2) Ten times the quantity of such material specified in Appendix C of 10 CFR 20 and

b. The quantity of any licensed or other radioactive material released in any one month, if diluted by the average monthly quantity of water released by WRAMC, will not result in an average concentration exceeding the limits specified in Appendix B, Table I, Column 2 of 10 CFR 20 and

c. The gross quantity of licensed and other radioactive material, excluding hydrogen-3 and carbon-14, released into the sewerage system by WRAMC does not exceed one curie per year. The quantities of hydrogen-3 and carbon-14 released into the sanitary sewerage system may not exceed 5 curies per year for hydrogen-3 and 1 curie per year for carbon-14. Excreta from individuals undergoing medical diagnosis or therapy with radioactive material shall be exempt from any limitations contained in this document.

3. The following policy and procedures apply to all individuals permitted to release radioactive washings into the sanitary sewage system via laboratory sinks:

a. Such release approval must be specifically included in the Principal User's WRAMC Radioactive Material Authorization.

CONDITION NO. 4 FOR RADIOACTIVE MATERIAL AUTHORIZATION (RADIOACTIVE WASTE)

SECTION IV - RADIOACTIVE WASTE DISPOSAL SUPPLIES

1. Items of supply for the containment and packaging of radioactive waste are stocked by the Supply and Administration Branch, Materiel Division, Directorate of Industrial Operations, WRAMC. The stockage items meet U.S. Army and Federal radioactive material packaging requirements for most of the radioactive waste resulting from laboratory and/or clinic procedures at WRAMC, WRAIR and AFIP. However, it should be noted that packaging requirements vary with the particular type, form and curie amount of the radioactive waste. Consequently, all personnel involved with the packaging of radioactive waste should consult the Health Physics Office in order to assure that the available stockage items meet packaging specification requirements for each particular radioactive waste disposal operation.
2. Following are the currently stocked items:
 - a. DRUM, Steel, DOT Specification 17-H, 30-gallon with gasket and sealing bolt. (Used as shipping container for the transport of radioactive biologicals).
 - b. DRUM, Steel, DOT Specification 17-H, 55-gallon with gasket and sealing bolt. (Used as a shipping container for the transport of low-level radioactive materials).
 - c. VERMICULITE, 4 cu ft bags. (Used as an absorbent material for the packaging of biological and liquid radioactive waste) - agricultural, Grade 4.
 - d. SLAKED LIME (Used to retard spoilage of biological radioactive waste).
 - e. BAG, Plastic, Magenta, 20" x 15" x 60", 4 mil thickness. (Used as a liner for large waste receptacle).
 - f. BAG, Plastic, Magenta, 13" x 12" x 24", 2 mil thickness. (Used as a liner for small laboratory radioactive waste receptacle).
 - g. DIATOMACEOUS EARTH, medium grade (floor dry #85), 2.5 cu ft bag. (Used as an absorbent material for packaging of liquid radioactive waste).
3. Additional items will be stocked or procured as required to meet the provisions of Federal/State regulatory agencies.
4. Principal Users are responsible for funding the costs of materials and supplies used to dispose of radioactive wastes. Although Principal Users will pay for the supplies they stock for use in their particular areas, the Health Physics Office, RMC Branch, will order and pick up the supplies needed to collect and package the radioactive waste received from the Principal Users. All orders placed by the Health Physics Office for radioactive waste disposal supplies for the hospital, WRAIR and AFIP will be funded by Clinical Investigation, Department of Pathology/Laboratory Services, Department of Radiology, WRAIR, or AFIP as appropriate.