(5-72)
10 CFR 30

BYPRODUCT MATERIAL LICENSE

(Medical - Groups I & II)

Amendment No. 36

Pursuant to the Atomic Energy Act of 1954 and Title 10, Code of Federal Regulations, Chapter 1, Parts 30, 32, 33, 34, and 35, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, own, possess, transfer and import byproduct material listed below; and to use such byproduct material for the purpose(s) and at the place(s) designated below. 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 Atomic Energy Commission now or hereafter in effect and to any conditions specified below.

Licensee	In accordance with application dated March 12, 1975,
1. Department of the Army Fitzsimons Army Medical Center and U.S. Army Medical Research and 2. Nutrition Laboratory Denver, Colorado 80240	3. License Number 05-00046-13 is amended in its entirety to read as follows:
	4. Expiration date April 30, 1979
	5. Reference No.

6. Byproduct material (element and mass number)	7. Chemical and/or physical form	8. Maximum amount of radioactivity which licensee may possess at any one time
A. Any byproduct material listed in Groups I and II of Schedule A, Section 35.100 of 10 CFR 35	A. Any radiopharmaceutical listed in Groups I and II of Schedule A, Section 35.100 of 10 CFR 35	A. As necessary for uses authorized in Subitem 9.A.
B. Any byproduct material listed in Group III of Schedule A, Section 35.100 of 10 CFR 35	B. Any form listed in Group III of Schedule A, Section 35.100 of 10 CFR 35	B. 2 curies of each byproduct material authorized in Subitem 6.B.
C. Any byproduct material listed in Group IV of Schedule A, Section 35.100 of 10 CFR 35	C. Any radiopharmaceutical listed in Group IV of Schedule A, Section 35.100 of 10 CFR 35	C. As necessary for uses authorized in Subitem 9.C.

Conditions numbered 1. printed on the reverse side of this page shall apply to this license.

A/111

FORM AEC-374B
(5-72)

U. S. ATOMIC ENERGY COMMISSION
YPRODUCT MATERIAL LICENSE
Supplementary Sheet

Continued from Page 1

License Number 05-00046-13

Amendment No. 36

Byproduct material (element and mass number)	7. Chemical and/or physical form	8. Maximum amount of radio activity which licensee may possess at any one time
D. Any byproduct material listed in Group V of Schedule A, Section 35.100 of 10 CFR 35	D. Any radio-pharmaceutical listed in Group V of Schedule A, Section 35.100 of 10 CFR 35	D. As necessary for uses authorized in Subitem 9.D.
E. Any byproduct material listed in Group VI of Schedule A, Section 35.100 of 10 CFR 35	E. Any sealed source listed in Group VI of Schedule A, Section 35.100 of 10 CFR 35	E. 1 curie total for all sources authorized in Subitem 6.E.
F. Iodine 131	F. Thyroxine	F. 2 millicuries
G. Iodine 125	G. Thyroxine	G. 1 millicurie
H. Cesium 137	H. Any	H. 1 millicurie
I. Any byproduct material with Atomic Nos. 1-83, inclusive	I. Any	I. 500 millicuries each, except: Hydrogen 3 - 5 curies. Total not to exceed 10 curies
J. Xenon 133	J. Free gas or in saline	J. 2 curies
K. Hydrogen 3	K. Water	K. 25 millicuries
L. Sodium 24	L. Sodium chloride	L. 1 millicurie

9. Authorized use

A. Any diagnostic procedure listed in Groups I and II of Schedule A, Section 35.100 of Title 10, Code of Federal Regulations.
B. Preparation and use of radiopharmaceuticals for any diagnostic procedure listed in Group III of Schedule A, Section 35.100 of Title 10, Code of Federal Regulations.
C. Any therapeutic procedure listed in Group IV of Schedule A, Section 35.100 of Title 10, Code of Federal Regulations.
D. Any therapeutic procedure listed in Group V of Schedule A, Section 35.100 of Title 10, Code of Federal Regulations.
E. Any procedure listed in Group VI of Schedule A, Section 35.100 of Title 10, Code of Federal Regulations.

MATERIALS LICENSE

Supplementary Sheet

License Number 05-00046-13

Docket or
Reference No.

Amendment No. 36

9. Authorized use (continued)

F. and G. Determination of thyroxine turnover.
H. Standard for assay of molybdenum content of eluate of molybdenum generator.
I. Laboratory research in vitro and in lower animals, in vitro testing.
J. Pulmonary function studies. Blood flow studies.
K. Determination of total body water.
L. Determination of total exchangeable sodium.

CONDITIONS

Wherever the words "Atomic Energy Commission" or "Commission" appear in this license, except where the context of their use refers to a fact or event prior to January 19, 1975, they mean the Nuclear Regulatory Commission created by Public Law 93-438 and Executive Order No. 11834.

10. The licensee shall comply with the provisions of Title 10, Chapter 1, Code of Federal Regulations, Part 19, "Notices, Instructions and Reports to Workers; Inspections" and Part 20, "Standards for Protection Against Radiation."

11. A. Byproduct material shall be used by, or under the supervision of, individuals designated by the Fitzsimons Army Medical Center Radioisotope Committee.

B. The use of byproduct material in or on humans shall be by a physician.

12. Byproduct material shall be used in accordance with the provisions of Section 35.14(b)(c)(e) and (f) of Title 10, Code of Federal Regulations, Part 35.

13. Except as specifically provided otherwise by this license, the licensee shall possess and use byproduct material described in Items 6, 7, and 8 of this license in accordance with statements, representations, and procedures contained in application dated February 22, 1974, and letters dated April 15, 1974 and July 30, 1975.

For the U. S. Nuclear Regulatory Commission

Date AUG 2 5 1975

by Materials Branch

Division of Materials and Fuel Cycle
Facility Licensing
Washington, D. C. 20555

FORM AEC 784 (6-74)

U.S. ATOMIC ENERGY COMMISSION

MATERIALS D A INPUT

FILE COPY

A. TYPE OF ACTION AND IDEN ION CODES

				DOCKET NUMBER	MAIL CONTROL NUMBER	CHANGE NAME/ ADDRESS
☐ NEW LICENSE	☐ AMENDMENT TO RENEW LICENSE	☐ AMENDMENT TO TERMINATE	☐ VOID	030-01233	55580	☐
☐ NEW LICENSE AND NEW LICENSEE	☒ OTHER AMENDMENT	☐ CLERICAL CHANGE NO AMENDMENT				

B. INDICATIVE INFORMATION:

INDIVIDUAL LICENSEES

NAME (LAST, FIRST, MIDDLE)	NAME (LAST, FIRST, MIDDLE)
NAME (LAST, FIRST, MIDDLE)	NAME (LAST, FIRST, MIDDLE)
NAME (LAST, FIRST, MIDDLE)	NAME (LAST, FIRST, MIDDLE)

ORGANIZATIONS

ORGANIZATION NAME (ALPHABETIC SEQUENCE)

Army, Department of the

DEPARTMENT OR BUREAU

Fitzsimons Army Medical and U.S. Army Medical Research

ADDRESS

BUILDING, STREET	CITY	STATE	ZIP CODE
	Denver	CO	80240

TYPE OF APPLICANT	DATE REQUEST RECEIVED	INSTITUTION CODE	PENDING PROG. CODE	ACTUAL PROG. CODE
☐ U.S. GOVERNMENT AGENCY ☐ INDIVIDUAL LICENSEE ☒ ORGANIZATIONAL LICENSEE	04/02/75	00046		

SECONDARY PROGRAM CODES AS REQUIRED:

#1	#2	#3	#4	#5

LICENSE NUMBER	DATE LICENSE ISSUED OR ACTION COMPLETED	EXPIRATION DATE
05-00046-13	08 25 75	04-30-79

C. STATISTICAL INFORMATION:

MEDICAL CATEGORY:

☐ FOR HUMAN USE ONLY ☒ FOR HUMAN AND NONHUMAN USE ☐ FOR NONHUMAN USE ONLY

POSSESSION OF THE MATERIAL IS AUTHORIZED IN ONE OF THE FOLLOWING AREAS:

☒ SAME AS "STATE" IN ADDRESS ☐ ALL STATES ☐ ALL NON-AGREEMENT STATES

AND/OR IN THE STATE(S), TERRITORY(S), COUNTRY CHECKED BELOW:

☐	ALABAMA	-AL	☐	GEORGIA	-GA	☐	MARYLAND	-MD	☐	NEW JERSEY	-NJ	☐	SOUTH CAROLINA	-SC	☐	WYOMING	-WY
☐	ALASKA	-AK	☐	HAWAII	-HI	☐	MASSACHUSETTS	-MA	☐	NEW MEXICO	-NM	☐	SOUTH DAKOTA	-SD			
☐	ARIZONA	-AZ	☐	IDAHO	-ID	☐	MICHIGAN	-MI	☐	NEW YORK	-NY	☐	TENNESSEE	-TN	☐	AMERICAN SAMOA	-AS
☐	ARKANSAS	-AR	☐	ILLINOIS	-IL	☐	MINNESOTA	-MN	☐	NORTH CAROLINA	-NC	☐	TEXAS	-TX	☐	CANAL ZONE	-CZ
☐	CALIFORNIA	-CA	☐	INDIANA	-IN	☐	MISSISSIPPI	-MS	☐	NORTH DAKOTA	-ND	☐	UTAH	-UT	☐	GUAM	-GU
☐	COLORADO	-CO	☐	IOWA	-IA	☐	MISSOURI	-MO	☐	OHIO	-OH	☐	VERMONT	-VT	☐	PUERTO RICO	-PR
☐	CONNECTICUT	-CT	☐	KANSAS	-KS	☐	MONTANA	-MT	☐	OKLAHOMA	-OK	☐	VIRGINIA	-VA	☐	VIRGIN ISLANDS	-VI
☐	DELAWARE	-DE	☐	KENTUCKY	-KY	☐	NEBRASKA	-NB	☐	OREGON	-OR	☐	WASHINGTON	-WA			
☐	WASHINGTON, DC	-DC	☐	LOUISIANA	-LA	☐	NEVADA	-NV	☐	PENNSYLVANIA	-PA	☐	WEST VIRGINIA	-WV	☐	CANADA	-CN
☐	FLORIDA	-FL	☐	MAINE	-ME	☐	NEW HAMPSHIRE	-NH	☐	RHODE ISLAND	-RI	☐	WISCONSIN	-WI			

D. POSSESSION LIMITS OF SOURCE AND SPECIAL NUCLEAR MATERIALS AND TRITIUM

SOURCE MATERIAL CEILING ☐ GRAMS ☐ KILOGRAMS

SNM CEILING ☐ GRAMS ☐ KILOGRAMS

☐ "X" HERE IF FOR POWER REACTOR

MAT.	AMOUNT	UNIT	CONFIG.	ENRICH.	MAT.	AMOUNT	UNIT	CONFIG.	ENRICH.
U5		☐ G ☐ kg	☐ S ☐ UNS				☐ G ☐ kg	☐ S ☐ UNS	
U3		☐ G ☐ kg	☐ S ☐ UNS				☐ G ☐ kg	☐ S ☐ UNS	
PU		☐ G ☐ kg	☐ S ☐ UNS				☐ G ☐ kg	☐ S ☐ UNS	
UR		☐ G ☐ kg	☐ S ☐ UNS				☐ G ☐ kg	☐ S ☐ UNS	
TH		☐ G ☐ kg	☐ S ☐ UNS				☐ G ☐ kg	☐ S ☐ UNS	
		☐ G ☐ kg	☐ S ☐ UNS				☐ G ☐ kg	☐ S ☐ UNS	
		☐ G ☐ kg	☐ S ☐ UNS				☐ G ☐ kg	☐ S ☐ UNS	
H3		☐ CURIES ☐ MICROCURIES ☐ MILLICURIES			RIS CODES				

U5=U235, U3=U233, PU=PLUTONIUM, UR=URANIUM, TH=THORIUM, H3=TRITIUM, G=GRAMS, KG=KILOGRAMS, S=SEALED, UNS=UNSEALED

Form AEC 784 (6-74)

U.S. ATOMIC ENERGY COMMISSION

MATERIALS D A INPUT MEDICAL

5 - MEDICAL BYPRODUCT REFERENCE COPY

A. TYPE OF ACTION AND IDENTIFICATION CODES

☐ NEW LICENSE	☐ AMENDMENT TO RENEW LICENSE	☐ AMENDMENT TO TERMINATE	☐ VOID	DOCKET NUMBER 030-01233	MAIL CONTROL NUMBER 25580	CHANGE NAME, ADDRESS ☐
☐ NEW LICENSE AND NEW LICENSEE	☒ OTHER AMENDMENT	☐ CLERICAL CHANGE NO AMENDMENT				

B. INDICATIVE INFORMATION:

INDIVIDUAL LICENSEES

NAME (LAST, FIRST, MIDDLE)	NAME (LAST, FIRST, MIDDLE)
NAME (LAST, FIRST, MIDDLE)	NAME (LAST, FIRST, MIDDLE)
NAME (LAST, FIRST, MIDDLE)	NAME (LAST, FIRST, MIDDLE)

ORGANIZATIONAL LICENSEES

ORGANIZATION NAME (ALPHABETIC SEQUENCE)

Army, Department of the

DEPARTMENT OR BUREAU

Walter Reed Army Medical and U.S. Army Medical Research

ADDRESS

BUILDING, STREET

CITY: Washington

STATE: DC

ZIP CODE: 20012

TYPE OF APPLICANT: ☐ U.S. GOVERNMENT AGENCY ☐ INDIVIDUAL LICENSEE ☒ ORGANIZATIONAL LICENSEE

DATE REQUEST RECEIVED: 04/22/75

INSTITUTION CODE: 03044

PENDING PROG. CODE

ACTUAL PROG. CODE

SECONDARY PROGRAM CODES AS REQUIRED:

#2 | #3 | #4 | #5

LICENSE NUMBER: 53-00013-03

DATE LICENSE ISSUED OR ACTION COMPLETED

EXPIRATION DATE: 7-31-75

BY-PRODUCT	FORM	USE	POSS. LIMIT
I 125 OR I 131	3,5-DIIODOTHYRONINE, ANY	IN VITRO STUDIES: Copy D, F, W, Y, W, L, M	
	THYROXINE	THYROID IMAGING	
	IODIDE	TREATMENT OF HYPERTHYROIDISM	
	IMNA	CARDIAC DYSFUNCTION AND THYROID CARCINOMA	
		CISTERNOGRAPHY	
	LABELED HSA	PLACENTOGRAPHY, PLACENTA	
	SODIUM IODIPAMIDE	TREATMENT OF LEUKEMIA, POLYCYTHEMIA	
I 125	IODIPAMIDE ETHYL ESTER	VERA, BONE METASTASES	
		INTERSTITIAL TREATMENT OF CARCINOMA	
Au 198	COLLOIDAL SUSPENSION	INTRACAVITARY TREATMENT OF MALIGNANT EFFUSIONS	
P 32	ANY	FOR USE AS A STANDARD FOR CALIBRATION PURPOSES	
Cr 51	CHROMATED RED BLOOD CELLS	FOR USE IN MEDICAL APPLICATIONS FOR THE INTRACAVITARY TREATMENT OF CARCINOMA	
	SODIUM CHROMATE	TREATMENT OF SUPERFICIAL EYE DISEASES	
Tc 99m	SODIUM PERTECHNETATE		
	SULFUR COLLOID	LIVER IMAGING 5	
	DTPA	KIDNEY IMAGING Copy 11 a + b	
	MIBA	LUNG IMAGING	
	LABELED POLYPHOSPHATES	BONE IMAGING	
	DTPA (SOLN)	KIDNEY FUNCTION, KIDNEY IMAGING, BRAIN IMAGING Copy 17 and 18	
	MAA	LUNG IMAGING	
	LABELED DIPHOSPHONATE	BONE IMAGING Dr. RH July 30,	
Mo 99	Mo 99/Tc 99m GENERATORS	PRODUCTION OF Tc 99m PERTECHNETATE 1975	
C 14			
H 3	ANY	IN VITRO STUDIES, ANIMAL STUDIES	
Se 75	SELENOMETHIONINE	PANCREAS IMAGING	
Xe 133	FREE GAS OR SOLUTION	BLOOD FLOW STUDIES	
		PULMONARY FUNCTION STUDIES	
In 113m		GROUP III	
Ga 67		GROUP IV	
Ga 68		GROUP V	
Group I		GROUP VI	

FORM AEC-784 (6-6?)

U.S. ATOMIC ENERGY COMMISSION

MATERIALS DATA INPUT MEDICAL

5 - MEDICAL BYPRODUCT REFERENCE COPY

A. TYPE OF ACTION AND IDENTIFICATION CODES

- [ ] NEW LICENSE
- [ ] AMENDMENT TO RENEW LICENSE
- [ ] AMENDMENT TO TERMINATE
- [ ] VOID
- [ ] NEW LICENSE AND NEW LICENSEE
- [x] OTHER AMENDMENT
- [ ] CLERICAL CHANGE NO AMENDMENT

DOCKET NUMBER	MAIL CONTROL NUMBER	CHANGE NAME/ ADDRESS
030-01233	35500	[ ]

B. INDICATIVE INFORMATION

INDIVIDUAL LICENSEES

NAME (LAST, FIRST, MIDDLE)	NAME (LAST, FIRST, MIDDLE)
NAME (LAST, FIRST, MIDDLE)	NAME (LAST, FIRST, MIDDLE)
NAME (LAST, FIRST, MIDDLE)	NAME (LAST, FIRST, MIDDLE)

ORGANIZATION NAME (ALPHABETIC SEQUENCE)

Army, Department of the

DEPARTMENT OR BUREAU

[illegible] Army [illegible] and U.S. Army [illegible] [illegible]

ADDRESS

BUILDING, STREET	CITY	STATE	ZIP CODE
	[illegible]	[illegible]	[illegible]

TYPE OF APPLICANT

- [ ] U.S. GOVERNMENT AGENCY
- [ ] INDIVIDUAL LICENSEE
- [x] ORGANIZATIONAL LICENSEE

DATE REQUEST RECEIVED	INSTITUTION CODE	PENDING PROG. CODE	ACTUAL PROG. CODE
[illegible]/75	[illegible]		

SECONDARY PROGRAM CODES AS REQUIRED:

01	02	03	04	05

LICENSE NUMBER	DATE LICENSE ISSUED OR ACTION COMPLETED	EXPIRATION DATE
[illegible]		[illegible]

BYPRODUCT	FORM	USE	POSS. LIMIT
[illegible]	[illegible]	IN VITRO STUDIES *Expy D, E, W, Y, N, L, M*	
[illegible]	[illegible]	THYROID IMAGING	
		TREATMENT OF HYPERTHYROIDISM	
	[illegible]	CARDIAC DYSFUNCTION AND THYROID CARCINOMA	
		CISTERNOGRAPHY	
	[illegible]	PLACENTA LOCALIZATION	
	[illegible]	TREATMENT OF [illegible]	
[illegible]	[illegible]	[illegible] METASTASES	
		INTERSTITIAL TREATMENT OF CARCINOMA	
[illegible]	[illegible]	INTRACAVITARY TREATMENT OF MALIGNANT EFFUSIONS	
[illegible]		[illegible] FOR CALIBRATION PURPOSES	
[illegible]	[illegible]	FOR USE IN MEDICAL APPLICATORS FOR THE INTRACAVITARY TREATMENT OF CARCINOMA	
[illegible]	[illegible]	TREATMENT OF [illegible] EYE DISEASES	
	[illegible]	[illegible]	
	[illegible]	[illegible] IMAGING	
	[illegible]	KIDNEY IMAGING	
[illegible]	[illegible]	LUNG IMAGING	
	LABELED [illegible]	BONE IMAGING	
	[illegible]	KIDNEY FUNCTION, [illegible] IMAGING	
		BRAIN IMAGING	
	[illegible]	LUNG IMAGING	
	LABELED [illegible]	BONE IMAGING	
Mo 99	Mo 99/Tc 99m GENERATORS	PRODUCTION OF Tc 99m PERTECHNETATE	
[illegible]			
[illegible]	ANY	IN VITRO STUDIES, ANIMAL STUDIES	
Se 75	SELENOMETHIONINE	PANCREAS IMAGING	
Xe 133	FREE GAS OR SOLUTION	BLOOD FLOW STUDIES	
		PULMONARY FUNCTION STUDIES	
[illegible]	[illegible]	[illegible]	
Group [illegible]		GROUP [illegible]	
Group [illegible]		GROUP [illegible]	
Group [illegible]		GROUP VI	

Expy [illegible] and [illegible]

Expy M and [illegible] [illegible] July 30, 1975

9L Determination of total body water

9M Determination of total exchangeable sodium.

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conditions

16. Fitzsimons Army Medical Center, 12101 East Colfax Ave, Aurora, Colorado

5

9A. FAMC Radioisotope Committee,

9B

18

12(All) 12(d) Licensee

21 A ∧ B

22

The licensee shall not use licensed material in field applications except as provided otherwise by specific conditions of this License.

26 16. Appl. dated March 9, 1979

53 Letter dated June 3, 1980

63

NRC FORM 754A (5-78) U.S. NUCLEAR REGULATORY COMMISSION

MEDICAL LICENSE DATA

APPLICATION DATED: March 6, 1979
LETTER DATED:

	RADIOACTIVE MATERIAL LISTED IN:	MARK ITEMS DESIRED "X"	MAXIMUM POSSESSION LIMITS (in millicuries)
1	10 CFR 35.100, SCHEDULE A, GROUP I	A	As Needed
2	10 CFR 35.100, SCHEDULE A, GROUP II	B	As Needed
3	10 CFR 35.100, SCHEDULE A, GROUP III	C	5 ci'
4	10 CFR 35.100, SCHEDULE A, GROUP IV	D	As Needed
5	10 CFR 35.100, SCHEDULE A, GROUP V	E	As Needed
6	10 CFR 35.100, SCHEDULE A, GROUP VI		2 ci'
7	10 CFR 31.11 FOR IN-VITRO STUDIES		
8	AMERICIUM – 241 ANATOMICAL MARKER		14 MCI
9	XENON-133: As gas or gas in saline for blood flow and pulmonary function studies	F	2 ci'
10	IODINE-131: As iodide for treatment of hyperthyroidism and cardiac dysfunction		
11	IODINE-131: As iodide for treatment of thyroid carcinoma		
12	PHOSPHORUS-32: As soluble phosphate for treatment of polycythemia vera, leukemia and bone metastases		
13	PHOSPHORUS-32: As colloidal chromic phosphate for intracavitary treatment of malignant effusions		
14	GOLD-198: As colloid for intracavitary treatment of malignant effusions		
15	DEPLETED URANIUM FOR SHIELDING		Ka

	BYPRODUCT	CHEMICAL OR PHYSICAL FORM	POSSESSION LIMIT
G	3-83 standard type G. Any		G. 500 mc, ' each
H.	H-3	H. Any	H. 5 ci'
I	Cs-137	I Any	I 1 mc,'
J.	I-131	J. Thyroxine	J. 2 mc,'
K	I-125	K Thyroxine	K. 1 mc,'
L.	H-3	L. water	L. 25 mc,'
M.	Na-24	M. NaCl	M. 1 mci'

9A-F. use standard medical uses

9G-I RAD standard type

9J and K determination of thyroxine TurnoveR

OVER

MAIL TO: Army

DATE MAILED: MAR 2

DATE COMPLETED: 1-24-80

FROM FITZSIMONS ARMY MEDICAL CENTER DENVER, COLORADO	DATE OF DOCUMENT	DATE RECEIVED 12/8/76	NO 0690
	LTR X	MEMO	REPORT / OTHER
TO USNRC, REGION IV	ORIG X	CC	OTHER
	ACTION NECESSARY XX NO ACTION NECESSARY ☐	CONCURRENCE ☐ COMMENT ☐	DATE ANSWERED BY
CLASSIF U	POST OFFICE REG NO	FILE CODE	

DESCRIPTION (Must Be Unclassified)	REFERRED TO	DATE	RECEIVED BY	DATE
RESPONSE TO ENFORCMENT LTR DTD 11/24/76 & INSP. HELD 11/11/76	HOWARD encl	12/8		
	BROWN			
ENCLOSURES D/F RELATING TO SECURITY OF RADIATION AREA (HOT LAB)	VETTER (HAS COPY)			
	Baird			
REMARKS				

U. S. NUCLEAR REGULATORY COMMISSION — MAIL CONTROL FORM — FORM NRC-326 (1-75)

A/113