

DISPOSITION FORM

ARM2.950113.006

(AR 340-15)

REFERENCE OR OFFICE SYMBOL

SUBJECT

MEDPS-PO

Quarterly Radioisotope Committee Reports

TO ~~Chief, Consultant Division, FROM Preventive Medicine Div~~ DATE 25 Nov 1964 CMT 1
~~Chief, Medical Consultant Br~~ Lt Col Goldstein 1581/gew
~~Chief, Nuclear Medicine Br~~
(Chief, Radiology Branch) *see anti-cancer*
Chief, Occupational Health Br
IN TURN

The following quarterly radioisotope reports are forwarded for your information, action and/or comment.

- ✓ Fitzsimons General Hospital, dated 16 October 1964
- Ireland Army Hospital, dated 12 October 1964
- Walter Reed Army Medical Center, dated 20 October 1964
- William Beaumont General Hospital, dated 19 October 1964
- Tripler Army Medical Center, dated 28 October 1964
- Second General Hospital, dated 17 October 1964

6 Incl
as

Roswell G. Daniels
ROSWELL G. DANIELS
Lt. Colonel, MC
Preventive Medicine Division

DA FORM 2496
1 FEB 62REPLACES DD FORM 96, EXISTING SUPPLIES OF WHICH WILL BE
ISSUED AND USED UNTIL 1 FEB 63 UNLESS SOONER EXHAUSTED.

U S GOVERNMENT PRINTING OFFICE : 1963 O-707-911

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Fitzsimons Gen. Hosp 1964

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RADIOLOGY SERVICE
FITZSIMONS GENERAL HOSPITAL
U. S. ARMY
DENVER, COLORADO, 80240

IN REPLY REFER TO

MEDEO-X

16 October 1964

The Surgeon General
Department of the Army
ATTN: MEDPS-PO
Washington D.C. 20315

SUBJECT: Quarterly Report of the Fitzsimons General
Hospital Radioisotope Committee

The following material comprises the Radioisotope Committee Quarterly
Report in accordance with AR-40-37.

Herbert F. Johnson

HERBERT F. JOHNSON

Major MC

Recorder, Radioisotope Committee

HFJ: jms

ADDRESS ALL COMMUNICATIONS TO THE COMMANDING GENERAL
FITZSIMONS GENERAL HOSPITAL
"BUY AND HOLD U.S. SAVINGS BONDS"

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The fourth meeting of the Radioisotope Committee, Fitzsimons General Hospital, was called to order at 1320 hours 6 October 1964, in the Research and Development Conference Room, USAMRNL, Building 603. Colonel Edwin L. Overholt, Chief, Department of Medicine, as Senior Medical Officer present, presided as Chairman.

All members were notified of the meeting. Members present were:

Colonel Edwin L. Overholt, MC	Ch, Department of Medicine
Colonel Arthur Steer, MC	Ch, Pathology Service
Major Gerald DeNardo, MC	Ch, Radioisotope Section Radiology Service
Major Herbert F. Johnson, MC	Post Radiation Safety Officer

Members absent were:

Chief, Department of Surgery
Chief, Radiology Service
Commanding Officer, USAMRNL, who was represented by Lt. Col. W.O. Krause, Chief, Administrative Service, USAMRNL
Chief, Radioisotope Section, USAMRNL, who was represented by Howarde E. Sauberlich, Ph. D., Chief, Chemistry Division USAMRNL
Chief, Purchasing and Contracting Branch, Supply and Service Division, who was represented by Mr. Samuel Nethery, General Procurement Section, Supply and Service Division

Minutes of the last meeting of the Radioisotope Committee were read by the Recorder, and were approved as read.

OLD BUSINESS:

1. It is noted that the requested amendments to the Radioisotope License (1) Request for Approval for Human Use of Radioisotopes in Tracer Amounts in Volunteer Experimental Research Subjects; (2) Request for Approval for Human Use of C-14 in Volunteer Experimental Research Subjects at Fort Devens, Massachusetts and on the Summit of Pikes Peak, Colorado; and (3) Request for Approval of I-131 and I-125 in Experimental Animals on the Summit of Pikes Peak, Colorado have been approved by the Atomic Energy

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Commission. (Copies of amendments attached as Appendices 1, 2, and 3.)

2. Curriculum Vitae and bibliography of Colonel David E. Thomas, MC, Chief, Department of Surgery, and member of the Radioisotope Committee has been received by the Committee and is attached hereto as Appendix 4.

3. Curriculum Vitae and Bibliography of Colonel Edwin L. Overholt MC, Chief, Department of Medicine, and member of the Radioisotope Committee has been received by the Committee and is attached hereto as Appendix 5.

NEW BUSINESS:

1. It is agreed that the next meeting of the Radioisotope Committee will be held at 1315 hours, Tuesday 5 Jan 1965 in the Bruns Room.

2. Application was submitted by Capt. Martin I. Surks, MC, requesting approval for use of individual radioactive isotopes in USAMRNL as outlined in the protocol. Certification was unanimously approved by the Radioisotope Committee and the Commanding General, Fitzsimons General Hospital. Approved application, together with documentation of Capt. Surks' training and experience is affixed to minutes as Appendix 6.

3. Application was submitted requesting George J. Klain, Ph.D., be certified as user for non-human use of Carbon-14, phosphorous, sulfur-35, and hydrogen-3. Requested certification was approved by the Committee. (Application is attached hereto as appendix 7).

4. Major De Nardo, Chief, Radioisotope Section, submitted a request for an amendment to the Radioisotope license for additional human use of radioisotopes. It has been unanimously agreed upon by all Committee members present that this amendment be forwarded to the Atomic Energy Commission for approval thru the Surgeon General's Office. Interim clearance will be ob-

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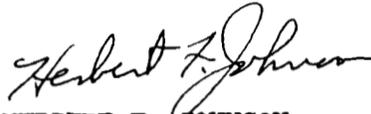
File: 901-03 AMEDS Radioisotope Committee

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tained from the Surgeon General's Office and Atomic Energy Commission by telephone. Descriptions of the new studies attached hereto as Appendix 8.

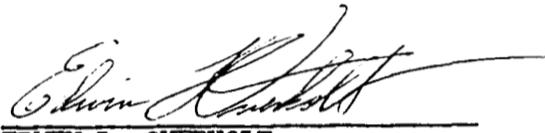
5. Reports of radioisotopes procured, on hand, and disposed of during quarter 1 July through 30 September 1964 were submitted by the Radiological Safety Officer. Amounts on hand did not exceed limitation of AEC license at any time. The reports were approved by the Committee and are attached as Appendix 9.

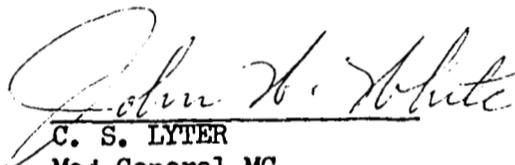
The meeting adjourned at 1345 hours.


HERBERT F. JOHNSON
Major MC
Recorder, Radioisotope Committee

APPROVED: Radioisotope Committee
Fitzsimons General Hospital

16 October 1964


EDWIN L. OVERHOLT
Colonel MC
Chief, Department of Medicine


C. S. LYTER
Maj General MC
Commanding

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BYPRODUCT MATERIAL LICENSE

Supplementary Sheet

License Number 5-46-13
(A66)

APPENDIX 2

AMENDMENT NO. 2

Department of the Army
Fitzsimon General Hospital and
U.S. Army Medical Research
and Nutrition Laboratory
Denver, Colorado

In accordance with undated application received September 2, 1964, License No. 5-46-13 is amended as follows:

Add the following condition:

- 17. Carbon 14 as Ascorbic acid may be used at Fort Devens, Massachusetts and on the summit of Pikes Peak, Colorado for nutrition and metabolism studies in accordance with procedures in undated application received September 2, 1964

Date SEP 11 1964

For the U. S. Atomic Energy Commission

[Signature]
Isotopes Branch

by Division of Materials Licensing

~~XXXXXXXXXXXXXXXXXXXX~~
Washington, D. C. 20545

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Supplementary Sheet

License Number 5-46-13
(A66)

APPENDIX 3

AMENDMENT NO. 3

Department of the Army
Fitzsimon General Hospital and
U.S. Army Medical Research
and Nutrition Laboratory
Denver, Colorado

In accordance with application dated August 12, 1964, License No. 5-46-13
is amended as follows:

Add the following condition:

- 18. 0.5 millicuries of Iodine 131 as Iodide and 0.5 millicuries of Iodine 125 as Iodide may be used on the summit of Pikes Peak, Colorado for studies in lower animals.

Date SEP 1964

For the U. S. Atomic Energy Commission
[Signature]
Isotopes Branch
by Division of Materials Licensing
Washington 25, D. C.

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APPENDIX I

License Number 5-46-13
(A66)

This copy is for your files

AMENDMENT NO. 1

Department of the Army
Fitzsimons General Hospital and
U.S. Army Medical Research
and Nutrition Laboratory
Denver, Colorado

In accordance with application dated March 12, 1964, License No. 5-46-13 is amended as follows:

Items 6, 7, 8, and 9 are amended to add:

6. 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
FF. Carbon 14	FF. Vitamins	FF. 10 millicuries
GG. Carbon 14	GG. Amino Acids	GG. 10 millicuries
HH. Carbon 14	HH. Lipids	HH. 10 millicuries
II. Carbon 14	II. Acetate	II. 10 millicuries
JJ. Carbon 14	JJ. Carbohydrates	JJ. 10 millicuries
KK. Carbon 14	KK. Methylmalonic Acid	KK. 10 millicuries
LL. Carbon 14	LL. Bicarbonate or Carbon Dioxide	LL. 10 millicuries
MM. Hydrogen 3	MM. Vitamins	MM. 50 millicuries
NN. Magnesium 28	NN. Magnesium Oxide, Magnesium Chloride, Magnesium Citrate	NN. 10 millicuries
OO. Calcium 47	OO. Calcium Chloride	OO. 10 millicuries
PP. Calcium 45	PP. Calcium Chloride	PP. 10 millicuries

9. Authorized use

FF. through PP. Nutrition and metabolism tracer studies.

Condition 16 is amended to read:

16. 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 applications dated December 6, 1963, and March 12, 1964.

Date JUL 31 1964

For the U. S. Atomic Energy Commission

Nathan Bassin
Isotopes Branch

by Division of Materials Licensing

Washington 25, D. C.

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RADIOISOTOPE	CHEMICAL OR PHYSICAL FORM	APPLICATION	MAXIMUM AMOUNT ON HAND	DOSAGE
I-131	Iodipamide	Liver and Gall Bladder scanning	25 mc	200-300 u.c.c.
I-131	Iodipamide	Brain Scanning	25 mc	500-1000 u.c.c.
Hg 203	Bromomercurihydroxy propane	Spleen Scanning	25 mc	100 u.c.c.
Hg 197	Bromomercurihydroxy propane	Spleen Scanning	25 mc	200-400 u.c.c.
Cr-51	Macroaggregated human serum albumin	Lung Scanning	25 mc	300-500 u.c.c.
I-125	Macroaggregated human serum albumin	Lung scanning	25 mc	500 u.c.c.
I-131	Macroaggregated human serum albumin	Lung Scanning	25 mc	300-500 u.c.c.

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APPENDIX 9

RADIOISOTOPES PROCURED DURING QUARTER 1 JULY - 30 SEPTEMBER 1964

<u>RADIOISOTOPE</u>	<u>TOTAL ACTIVITY</u>	
I-125	Human Serum Albumin	2.0 mc
Sr-85	Strontium	1.0 mc
P-32	Chromic Phosphate	30.0 mc
C-51	Chromate	9.0 mc
Au-198	Aurcoloid	20.0 mc
I-131	Hippuran	11.0 mc
I-131	Oriodide	194.0 mc
Hg-203	Neohydrin	31.0 mc
I-131	Triolein Capsules	5 capsules
I-131	Rose Bengal	2.0 mc
P-32	Sodium Phosphate	105.0 mc
T-3	Diagnostic Kits	45 kits
XE-133	Xenon	4 curies
I-131	Sodium Iodohippurate	9.0 mc
Se-75	Strotope	4.0 mc
Co-57	Radio Cyanocobalamin	5 capsules
1-C-14	Acetic Acid	1.5 mc
7-C-14	Nicotinamide	0.1 mc
C-14	D-Glucose	0.5 mc
C-14	Toluene Standard Source 3.83x10 ⁵ DPM/ml 10 ml/ vial, 10 vials	17.252 uc
I-131	Radio-L-Thyroxine	0.5 mc
I-131	Sodium Radio-Iodine	1.0 mc
I-125	Iodine	1.0 mc
1-C-14	D-Glucose	0.2 mc
6-C-14	D-Glucose	0.2 mc
C-14	Toluene, Standard Source	17.252 uc
C-14	L-Alanine	50 uc
C-14	L-Glutamic	50 uc
C-14	L-Lysine	50 uc
C-14	L-Methionine-Methyl	50 uc
1-C-14	L-Ascorbic Acid	0.5 mc
Ru-86	Rubidium	2 mc
Ru-86	Rubidium	2 mc
I-131	Radio-L-Thyroxine	0.5 mc
I-131	Sodium Radio-Iodine	1 mc
1-C-14	L-Ascorbic Acid	0.2 mc
1-C-14	Sodium Acetate	1.0 mc
I-131	Radio-Thyroxine	0.5 mc

Herbert F. Johnson
HERBERT F. JOHNSON

Major MC
Radiation Protection Officer

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SEWAGE DISPOSAL OF RADIOISOTOPES FOR QUARTER 1 JULY - 30 SEPTEMBER 1964

<u>RADIOISOTOPE</u>	<u>DATE DISCARDED</u>	<u>TOTAL ACTIVITY</u>
I-131 Oriodide	1 Jul 64	120 uc
C-45 Calcium	1 Jul 64	100 uc
Ca-45 Calcium	2 Jul 64	100 uc
I-131 Oriodide	8 Jul 64	100 uc
C-14 Carbon	9 Jul 64	10 uc
C-14 Carbon	9 Jul 64	5 uc
C-14 Carbon	13 Jul 64	500 uc
I-131 Oriodide	13 Jul 64	96 uc
C-14 Carbon	15 Jul 64	50 uc
C-14 Carbon	16 Jul 64	50 uc
C-14 Carbon	18 Jul 64	50 uc
C-14 Carbon	19 Jul 64	50 uc
H-3 Hydrogen	20 Jul 64	100 uc
C-14 Carbon	22 Jul 64	30 uc
I-131 Oriodide	24 Jul 64	100 uc
C-14 Carbon	25 Jul 64	3 uc
C-14 Carbon	25 Jul 64	3 uc
I-131 Oriodide	28 Jul 64	30 uc
Ca-45 Calcium	29 Jul 64	50 uc
C-14 Carbon	3 Aug 64	10 uc
C-14 Carbon	5 Aug 64	55 uc
C-14 Carbon	6 Aug 64	500 uc
C-14 Carbon	27 Aug 64	10 uc
C-14 Carbon	3 Sep 64	10 uc
I-131 Oriodide	4 Sep 64	27 uc
C-14 Carbon	9 Sep 64	10 uc
C-14 Carbon	10 Sep 64	500 uc
Cr-51	11 Sep 64	262 uc
I-13 Oriodide	11 Sep 64	80 uc
C-14 Carbon	16 Sep 64	10 uc
C-14 Carbon	17 Sep 64	500 uc
Ca-45 Calcium	21 Sep 64	4 uc
I-131 Oriodide	22 Sep 64	100 uc
C-14 Carbon	23 Sep 64	55 uc
I-131 Oriodide	25 Sep 64	98 uc

One shipment of solid waste was made to U.S. Army Edgewood Arsenal, Maryland in accordance with AR-755-380 containing a total of 8.989 millicuries. Shipment vouchers accompany this report.



HERBERT F. JOHNSON
Major MC
Radiation Protection Officer

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RADIOISOTOPES ON HAND AS OF 30 SEPTEMBER 1964

<u>RADIOISOTOPE</u>		<u>AMOUNT ON HAND</u>
Sr-85	Strotope	2.9 mc
Co-57	B-12	6 Capsules
Cr-51	Chromium	1.4 mc
Au-198	Colloidal	0.1 mc
I-131	Oriodide	3.1 mc
Hg-203	Neohydrin	3.5 mc
P-32	Sodium Phosphate	2.8 mc
I-131	Hippuran	.608 mc
Xe-133	Xenon	2.0 curies
I-131	Cholegrafin	2.4 mc
I-125	Serum Albumin	1.6 mc
Se-75	Sethotope	0.88 mc
I-125	Hippuran	0.98 mc
P-32	Chromic Phosphate	8.8 mc
Th-70	Thulium	19.0 mc
Ca-45	Calcium	2,825 uc
C-14	Carbon	76,639.064 uc
C-14	Carbon, Standard	168.8276 uc
Cr-51	Chromium	6.10 uc
Co-60	Cobalt	1 uc (less than)
I-125	Iodine	606 uc
I-131	Iodine	951 uc
Fe-59	Iron	12.36 uc
Mo-99	Molybdenum-99	none
Ru-86	Rubidium	2,243.18 uc
Sr-89	Strontium	1,557 uc
Sr-90	Strontium	1 uc (less than)
Se-75	Selenium	none
Na-22	Sodium	398 uc
S-35	Sulfur	32.81 uc
S-35	Sulfur, standard	1 uc (less than)
Th-204	Thallium	1 uc (less than)
H-3	Hydrogen	4 curies
H-3	Hydrogen, Standard	1 uc (less than)
Zn-65	Zinc	1 uc

H.F. Johnson

H. F. JOHNSON
Major MC
Radiation Protection Officer

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Fitzsimons Gen. Hosp 1964

Drum No. 1

Date: 31 July 1964

Instrument Reading 0.23 mr/hr
at surface and 0.09 mr/hr at
one meter

No.	Isotope	Activity in μ c	Date	Material
1	C-14	1	21 Jul 64	paper
2	C-14, Zn-65, Mo-99	10	13 Jun 64	paper
3	Zn-65, Mo-99, C-14	10	10 Jun 64	paper
4	Cr-51	10	3 Jul 64	plastic, paper
5	Cr-51	10	3 Jul 64	plastic, paper
6	C-14	150	2 Jun 64	paper, feces
7	C-14	150	2 Jun 64	paper, feces
8	C-14	150	2 Jun 64	paper, feces
9	C-14	150	2 Jun 64	paper, feces
10	C-14	150	28 May 64	paper, feces
11	C-14	150	22 May 64	paper, feces
12	C-14	150	18 May 64	paper, feces
13	C-14	150	15 May 64	paper, feces
14	Zn-65, Fe-59, H-3, C-14	10	8 Jun 64	paper
15	C-14, Zn-65	20	10 Jun 64	paper, plastic
16	Zn-65	10	3 Jun 64	paper, feces
17	Zn-65	5	4 Jun 64	paper, plastic
18	Zn-65	5	8 Jun 64	paper, plastic
19	C-14, H-3	10	6 May 64	paper, plastic
20	C-14, Fe-59	20	22 May 64	paper
21	C-14, Fe-59	5	27 Apr 64	paper
22	Zn-65	3	10 Jun 64	paper, plastic
23	Zn-65	5	12 May 64	paper
24	Zn-65	3	9 Jun 64	paper, plastic
25	C-14, Zn-65, Fe-59, H3	10	13 May 64	paper, plastic

Weight of Drum: 123 Pounds

Activity of Content: 1,347 Microcuries

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Fitzsimons Gen. Hosp 1964

Drum No. 2

Date: 31 July 1964

Instrument Reading 0.07 mr/hr
at surface and 0.04 mr/hr at
one meter

No.	Isotope	Activity in μc	Date	Material
1	C-14, H-3 Fe-59	10	1 May 64	glass, paper
2	C-14	5	17 Jul 64	glass
3	C-14	5	17 Jul 64	glass
4	C-14	15	15 Jul 64	glass, paper
5	C-14	10	10 Jun 64	glass, paper
6	C-14	10	10 Jun 64	glass, paper
7	C-14	10	10 Jun 64	glass, paper
8	C-14, H-3	20	23 Apr 64	glass, plastic
9	C-14	5	17 Jun 64	glass, paper
10	C-14, H-3	2	24 Apr 64	glass, plastic
11	C-14, Zn-65	10	10 Jun 64	glass, paper
12	H-3, C-14, Fe-59, S-35	10	22 May 64	glass, paper
13	Sr-89, Zn-65, C-14	20	14 May 64	glass, paper
14	C-14	4	9 Jul 64	glass
15	Ca-45	100	30 Jun 64	glass
16	C-14	75	11 Jun 64	glass
17	C-14	20	11 Jun 64	glass

Weight of Drum: 161 Pounds

Activity of Content: 331 Microcuries

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Drum No. 3

Date: 31 July 1964

Instrument Reading 0.16 mg/hr
at surface and 0.07 mr/hr at
one meter

No.	Isotope	Activity in μc	Date	Material
1	C-14, Zn-65, Fe-59	50	12 May 64	gauze, paper
2	C-14, Zn-65	10	7 May 64	gauze, plastic
3	Zn-65	10	10 Jun 64	paper, plastic
4	Zn-65	5	5 Jun 64	paper, plastic
5	Zn-65	10	10 Jun 64	paper, feces
6	C-14, Zn-65	5	15 May 64	paper, plastic
7	Zn-65	10	13 May 64	paper, plastic
8	Zn-65, Fe-59, C-14	150	12 May 64	paper, plastic
9	Zn-65	5	7 Jun 64	paper, plastic
10	C-14, Fe-59	5	8 May 64	paper
11	Zn-65	1	3 Jun 64	paper, plastic
12	Zn-65	5	9 May 64	paper
13	Zn-65	10	11 May 64	paper
14	C-14, Zn-65	10	14 May 64	paper, plastic
15	Zn-65, C-14	20	14 May 64	gauze, paper
16	Fe-59, C-14	5	18 May 64	paper
17	C-14, Zn-65	30	11 May 64	paper
18	C-14, Fe-59	10	1 Jun 64	paper
19	Zn-65, Mo-99	10	2 Jul 64	feces, paper, food
20	Zn-65, Mo-99	15	30 Jun 64	paper, plastic
21	H-3, Zn-65	10	12 Jun 64	paper, plastic
22	C-14, Zn-65	5	22 Jun 64	paper, plastic
23	C-14, H-3, Zn-65, Ca-45	2	12 Jun 64	paper, plastic
24	Zn-65, C-14	1	12 Jun 64	paper
25	C-14, Zn-65	3	12 Jun 64	paper
26	C-14, Ca-45, S-35, Zn-65	10	2 Jun 64	paper
27	C-14, Zn-65	1	12 Jun 64	paper
28	C-14, Zn-65, S-35	20	12 Jun 64	paper

Weight of Drum: 108 Pounds

Activity of Contents: 428 Microcuries

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Drum No. 4

Date: 31 July 1964

Instrument Reading 0.7 mr/hr
at surface and 0.2 mr/hr at
one meter

No.	Isotope	Activity in μc	Date	Material
1	Zn-65	50	13May64	blood, glass
2	Fe-59	100	13Jul64	rat urine, plastic
3	C-14	270	14Jul64	chickens, aluminum foil
4	Zn-65, S-35	250	3Mar64	glass, feces
5	C-14, Ca-45	138	24Jul64	glass

Weight of Drum: 102 Pounds

Activity of Contents: 808 Microcuries

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Drum No. 5

Date: 31 July 1964

Instrument Reading 0.65 mr/hr at surface and 0.2 mr/hr at one meter

No.	Isotope	Activity in μ c	Date	Material
1	Fe-59	200	12Mar64	organs, rats, plasma, plastic
2	Ca-45	2000	24Apr64	eggs
3	Fe-59	50	2Jun64	urine, plastic
4	Ca-45	1400	18Apr64	eggs
5	C-14	50	9Jun64	rats
6	Zn-65	10	15May64	rats
7	Zn-65	100	14May64	rats
8	C-14	150	27May64	rats
9	C-14	100	27May64	rats
10	C-14	50	9Jun64	rats, paper
11	Ca-45	200	28Jun64	eggs

Weight of Drum: 121 Pounds

Activity of Contents: 4,310 Microcuries

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File: 901-03 AMEOS Radioisotope Committee

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Drum No. 6

Date: 31 July 1964

Instrument Reading 0.40 mr/hr
at surface and 0.12 mr/hr at
one meter

No.	Isotope	Activity in μc	Date β	Material
1	Zn-65	300	8 Jun 64	rats
2	Fe-59	250	10 Jun 64	rat tissue
3	Zn-65	15	5 Jun 64	rat
4	Zn-65	15	4 Jun 64	rat
5	C-14	100	6 May 64	rats
6	Zn-65	15	6 Jun 64	rat
7	Zn-65	15	5 Jun 64	rat
8	C-14	150	3 Jun 64	chickens
9	Zn-65	150	13 May 64	rats
10	C-14	125	12 Jun 64	rats
11	C-14	10	15 Jul 64	paper
12	C-14	10	22 Jun 64	rats
13	C-14	50	26 Jun 64	rats, plastic
14	Mo-99	60	2 Jul 64	rats

Weight of Drum: 130 Pounds

Activity of Contents: 1,265 Microcuries

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Drum No. 7

Date: 31 July 1964

Instrument Reading 0.90 mr/hr at
the surface and 0.18 mr/hr at
one meter

No.	Isotope	Activity in μ c	Date	Material
1	Mixed I-131, Co-57, Cr-51, Fe-59, Au-198, P-32, Sr-90, Se-75	500	25 Jun 64	paper, plastic, needles, vials

Weight of Drum: 96 lbs

Activity of Contents: 500 microcuries

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Fitzsimons Gen. Hosp 1964

MEDEO-X

17 July 1964

SUBJECT: Quarterly Report of the Fitzsimons
General Hospital Radioisotope Committee

TO: The Surgeon General
Department of the Army
ATTN: MEDPS-PO
Washington D.C. 20315

The following material comprises the Radioisotope Committee Quarterly Report in accordance with AR-40-37.

Herbert F. Johnson

HERBERT F. JOHNSON
Major MC
Recorder, Radioisotope Committee

*Johnson, Edward D.
197-3*

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Fitzsimons Gen. Hosp 1964

MINUTES OF RADIOISOTOPE COMMITTEE MEETING

The third meeting of the Radioisotope Committee, Fitzsimons General Hospital, was called to order at 1320 hours, 7 July 1964, in the Bruns Room, Fitzsimons General Hospital. Colonel Robert B. Franklin, Acting Chief, Department of Medicine, as Senior Medical Officer present, presided as Chairman.

All members were notified of the meeting. Members present were:

Lt. Col. Marion E. McDowell, MC, Commanding Officer,
USAMRNL
Major Paul E. Siebert, MC, Chief, Radiology Service
Major Gerald L. DeNardo, MC, Chief, Radioisotope
Section, Radiology Service
Major Herbert F. Johnson, Post Radiation Safety Officer
Capt. Kenneth E. Kinnamon, VC, Chief, Radioisotope
Section, USAMRNL

Members absent were:

Chief, Department of Medicine, who was represented by
Colonel Robert B. Franklin, Acting Chief, Department
of Medicine
Chief, Department of Surgery
Chief, Pathology Service, who was represented by Lt. Col.
Glen A. West, Assistant Chief, Pathology Service
Chief, Purchasing and Contracting Branch, Supply and Service
Division, who was represented by Mr. Samuel Nethery,
General Procurement Section, Supply and Service Division

Minutes of the last meeting of the Radioisotope Committee were read by the Recorder, and motion was made and carried that they be approved as read.

OLD BUSINESS:

The present status of the requested amendment to the Radioisotope license was discussed. It has been approved by Department of Army and The Surgeon General's Office, and is now in the hands of the Advisory Committee of the Atomic Energy Commission awaiting action.

NEW BUSINESS:

1. It is agreed that the next meeting of the Radioisotope Committee will be held at 1315 hours Tuesday, 6 October 1964, in the Research and Development Conference Room, USAMRNL, Building 603.
2. A recently published Hospital Regulation (HR 15-1, dated 8 June 1964) has indicated that only two members from the USAMRNL are to be active

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members of the Radioisotope Committee. This is in variation with the originally published order (Special Order #194) constituting the committee, and no change in orders has been published. It is assumed that the Chief of the Chemistry Division of USAMRNL and the Chief of the Physiology Division, USAMRNL, are no longer members of this committee. It is also noted that HR 15-1 makes an addition of one new member to the committee--Chief, Department of Surgery, and documentation of his training and experience will be obtained from him. Documentation att. as Appendix I.

3. Colonel Orbison, Chief, Department of Medicine, will soon depart this post, to be replaced by Colonel Edwin L. Overholt, and documentation as to the training and experience of Colonel Overholt will be obtained upon his arrival.

4. Motion is made and unanimously approved that redefinition of a quorum shall now consist of a majority of the voting members present.

5. It is noted that no additional radioisotope users have applied for certification by this committee, and that no new procedures or dosages are to be added since the last quarterly report.

6. It is also noted that Capt. Marvin L. Tanzer, USAMRNL, a certified user of radioisotopes, has departed this post. (Request for his certification was attached to Minutes of the previous quarterly report as Appendix VII.)

7. Reports of radioisotopes procured, on hand, and disposed of during quarter 1 April through 30 June 1964 were submitted by the Radiological Safety Officer. Amounts on hand did not exceed limitation of AEC license at any time. The reports were approved by the committee and are attached as Appendix II.

8. Mr. Nethery reports no difficulties in the receipt and distribution of supplies.

The meeting adjourned at 1410 hours.



HERBERT F. JOHNSON
Major, MC
Recorder, Radioisotope Committee

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Fitzsimons Gen. Hosp 1964

17 July 1964

APPROVED: Radioisotope Committee
Fitzsimons General Hospital

Robert B. Franklin

ROBERT B. FRANKLIN
Colonel, MC
Chairman, Radioisotope Committee

Robert D. Anderson

ROBERT D. ANDERSON
Colonel, MC
Acting Commander

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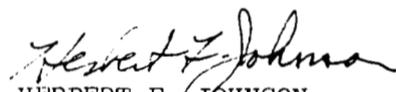
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Fitzsimons Gen. Hosp 1964

APPENDIX II - Part 1

RADIOISOTOPES PROCURED DURING QUARTER 1 April - 30 June 1964

<u>Radioisotope</u>	<u>Total Activity</u>
I-125 Sodium Radioiodide, Oral	5.0 mc
I-125 Human Serum Albumin	2.0 mc
Sr 85 Strontium	0.32 mc
P32 Chromic Phosphate	38.0 mc
I 131 RISA	2.9 mc
I-131 Raovin	.7 mc
Cr 51 Chromate	3.06 mc
Fe 59 Ferrous Citrate	0.1 mc
Au 198 Aurcoloid	20.0 mc
I-131 Hippuran	7.0 mc
I-131 Oriodide	198.0 mc
Hg 203 Neohydrin	25.0 mc
I-131 Triolein Capsules	0.55 mc
I-131 Rose Bengal	2.0 mc
P32 Sodium Phosphate	50 mc
T-3 Diagnostic Kits	0.036 mc
XE133 Xenon	4.0 curies
Sr-89 Strontium	5.0 mc
Ru-96 Rubidium	2.0 mc
Cr-51 Chromium	2.0 mc
Zn-65 Zinc	1.0 mc
C-14 Toluene	13.0 uc
C-14 Sodium Acetate - 1	1.0 mc
C-14 Cholesterol - 1	400.0 mc
C-14 D-Glucose	500.0 uc
Ca-45 Calcium	5.0 mc
C-14 Glycerol Tripalmitate -	100.0 uc
C-14 Acetic - 1	500.0 uc



HERBERT F. JOHNSON
Major MC
Radiological Safety Officer

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File: 901-03 AMEDS Radioisotope Committee

Fitzsimons Gen. Hosp 1964

APPENDIX II - Part II

RADIOISOTOPES ON HAND AS OF 30 JUNE 1964

<u>Radioisotope</u>	<u>Amount on Hand</u>
I-125 Iodide	0.125 mc
Sr 85 Strotope	0.405 mc
I-131 RISA	0.0 mc
I-131 Raovin	0.0 mc
Co57 B12	0.0 mc
Cr 51 Chromium	0.423 mc
Fe 59 Ferrous Citrate	0.039 mc
Au 198 Colloidal	0.0 mc
I-131 Oriodide	0.448 mc
Hg 203 Neohydrin	1.0 mc
I-131 Rose Bengal	0.0 mc
P32 Sodium Phosphate	4.8 mc
I-131 Hippuran	0.789 mc
Xe-133 Xenon	0.2 curies
I-131 Cholografin	0.09 mc
I-125 Serum Albumin	1.516 mc
Se 75 Sethotope	0.14 mc
Carbon-14	77,544.064 uc
Carbon-14, standard source	163.522 uc
Calcium-45	5.5 mc
Chromium-51	1.4 mc
Cobalt 60	<1.0 uc
Iron-59	125.0 uc
Rubidium 86	1,211.00 uc
Strontium 90	<1.0 uc
Strontium 89	5.0 mc
Sodium 22	454.0 uc
Sulfur 35	126.0 uc
Sulfur 35, standard source	<1.0 uc
Thallium 204	<1.0 uc
Hydrogen 3	4.0 curies
Hydrogen 3, standard source	<1.0 mc
Zinc 65	1.0 mc

Herbert F. Johnson
HERBERT F. JOHNSON

Major MC
Radiological Safety Officer

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Fitzsimons Gen. Hosp 1964

APPENDIX II - Part III

SEWAGE DISPOSAL OF RADIOISOTOPES FOR QUARTER 1 April - 30 June 1964

<u>Radioisotope</u>	<u>Date Discarded</u>	<u>Total Activity</u>
I-131 Oriodide	3 Apr 64	100 uc
I-131 Oriodide	4 Apr 64	96 uc
I-131 Oriodide	7 Apr 64	7 uc
I-131 Oriodide	10 Apr 64	93 uc
I-131 Oriodide	13 Apr 64	93 uc
I-131 Oriodide	17 Apr 64	88 uc
I-131 Oriodide	18 Apr 64	93 uc
I-131 Oriodide	20 Apr 64	96 uc
I-131 Oriodide	23 Apr 64	96 uc
I-131 Oriodide	24 Apr 64	100 uc
I-131 Oriodide	30 Apr 64	100 uc
I-131 Oriodide	1 May 64	100 uc
I-131 Oriodide	5 May 64	40 uc
I-131 Oriodide	7 May 64	374 uc
I-131 Hippuran	8 May 64	12 uc
I-131 Raevin	8 May 64	5 uc
Hg 203 Neohydrin	8 May 64	26 uc
I-131 Oriodide	11 May 64	126 uc
Cr 51 Chromium	12 May 64	40 uc
I-131 Oriodide	12 May 64	20 uc
I-131 Oriodide	18 May 64	40 uc
I-131 Oriodide	19 May 64	150 uc
I-131 Oriodide	25 May 64	150 uc
I-131 Oriodide	3 Jun 64	93 uc
I-131 Oriodide	4 Jun 64	150 uc
I-131 Oriodide	12 Jun 64	120 uc
Cr 51 Chromium	12 Jun 64	5 uc
Fe 59 Ferrous	12 Jun 64	10 uc
Fe 59 Ferrous	15 Jun 64	3 uc
I-131 Oriodide	18 Jun 64	127 uc
I-131 Oriodide	22 Jun 64	88 uc
Cr 51 Chromium	23 Jun 64	16 uc

1. Liquid waste disposal during the period 1 April thru 30 June 1964 at the U.S. Army Medical Research and Nutrition Laboratory consisting of approximately 6.038 millicuries was as follows: a. Calcium-45, b. Carbon-14, c. Hydrogen-3, d. Sulfur-35, e. Iron-59.

2. One shipment of solid waste was made to U.S. Army Edgewood Arsenal, Maryland in accordance with AR-755-380 containing a total of 26,358.5 uc. Shipment vouchers accompany this report.

Herbert F. Johnson
 HERBERT F. JOHNSON
 Major MC
 Radiological Safety Officer

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REQUISITION AND INVOICE/SHIPPING DOCUMENT

1. FROM: U.S. Army Medical Research and Nutrition Laboratory
Fitzsimons General Hospital, Denver, Colorado 80240

SHEET NO. OF SHEETS: 1
5. REQUISITION DATE: 20 April 1964

6. REQUISITION NUMBER: 001 No. C-1849472

2. TO: Transportation Officer
U.S. Army Edgewood Arsenal, Maryland
Depot Operations Division
M/Y Radioactive Material Disposal Facility

7. DATE MATERIAL REQUIRED: 20 April 1964
8. AUTHORITY OR PURPOSE: Loc 1nd SOUTA-SSDA, dtd 24Mar64
USA Edgewood Arsenal, Edgewood Arsenal, MD

3. SHIP TO - MARK FOR: U.S. Army Edgewood Arsenal, Maryland
Depot Operations Division
M/Y Radioactive Material Disposal Facility

9. SIGNATURE: [Signature]

10. BILL OF LADING NUMBER: 001 No. C-1849472

4. ACCOUNTING AND FUNDING DATA

11. DATE SHIPPED: 20 April 1964
12. MODE OF SHIPMENT: Denver-Chicago
13. TRUCKING CO. [Name]

SECTION II

ITEM NO.	STOCK NUMBER AND DESCRIPTION OF MATERIAL AND/OR SERVICES	UNIT ISSUE	QUANTITY REQUESTED	SUPPLY ACTION	TYPE CON. TAINER	CON. TAINER NOS.	UNIT PRICE	TOTAL COST
1	RADIOACTIVE WASTE MATERIAL (Unclassified) ////////////////////////////////////	DR	8	8	DR 1-8			

KENNETH E. KIRKMAN, CAPT., VC
Radioisotope Branch, Physiology Div
U.S. Army Med Resch & Nutr Lab
FGR, Denver, Colo., 80240

RECEIVED BY:

ISSUED BY	TOTAL CONTAINERS	TYPE CON. TAINER	DESCRIPTION	TOTAL WEIGHT	TOTAL CUBE
Checked by: K.E. Kirkman	0	DR	Radioactive Waste Mat.	1394 lbs	
Packed by: K.E. Kirkman					
			TOTAL		

RECEIPT		CONTAINERS RECEIVED EXCEPT AS NOTED		QUANTITIES RECEIVED EXCEPT AS NOTED	
DATE	BY	DATE	BY	DATE	BY

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U. S. ARMY MEDICAL RESEARCH AND NUTRITION LABORATORY

FITZSIMONS GENERAL HOSPITAL

DENVER ~~88~~, COLORADO 80240

IN REPLY REFER TO:

Drum No. 1

Date: 14 April 1964

Instrument Reading: 3 mr/hr
at surface and 0.77 mr/hr at
one meter

No.	Isotope	Activity in μ c	Date	Material
1	Cr-51	1 mc	27 Mar 64	paper, syringes, vials
	Fe-59	1 mc	27 Mar 64	paper, syringes, vials
	Na-22	100	27 Mar 64	paper, syringes, vials
	I-131	1 mc	27 Mar 64	paper, syringes, vials
	Ca-45	1 mc	27 Mar 64	paper, syringes, vials
2	C-14, S-35	10	31 Mar 64	paper, trash
3	C-14, Fe-59	10	30 Mar 64	paper, trash
4	Fe-59	50	31 Mar 64	paper, syringes, vials
5	C-14, Fe-59	5	1 Apr 64	paper, trash
6	C-14	10	31 Mar 64	glass bottles
7	Sr-35	20	31 Mar 64	glass vials, tin cans
8	Fe-59	5	27 Mar 64	plastic cups
9	Sr-89	10	27 Mar 64	paper, trash
10	Fe-59, C-14	20	27 Mar 64	paper, plastic syringes, vials
11	H-3, C-14	25	3 Mar 64	paper, plastic syringes, vials
12	H-3	5	24 Feb 64	paper, plastic syringes, vials
	C-14	10	24 Feb 64	paper, plastic syringes, vials
13	C-14	5	20 Feb 64	paper, plastic syringes, vials
14	Cr-51	15	9 Mar 64	paper, plastic syringes, vials
15	C-14	100	4 Mar 64	paper, plastic syringes, vials
	Ca-45	100	4 Mar 64	paper, plastic syringes, vials
	H-3	10	4 Mar 64	paper, plastic syringes, vials
16	C-14	1	20 Feb 64	paper
17	C-14	1	4 Mar 64	paper
18	C-14	5	4 Mar 64	paper, gauze
19	C-14	5	4 Mar 64	paper
	H-3	10	4 Mar 64	paper
	Ca-45	10	4 Mar 64	paper
20	C-14	5	11 Mar 64	glass, plastic, bottles
21	C-14	5	17 Feb 64	paper, plastic
22	C-14	5	24 Feb 64	paper, glass
	Fe-59	10	24 Feb 64	paper, glass
	S-35	15	24 Feb 64	paper, glass
23	Fe-59	10	13 Mar 64	Paper
	C-14	5	13 Mar 64	paper
24	Fe-59	25	24 Feb 64	paper
25	C-14	0.5	8 Jan 64	sand
26	C-14	5	10 Feb 64	paper, plastics
	Fe-59	10	10 Feb 64	paper, plastics
27	C-14	10	30 Jan 64	paper, plastics
	H-3	30	30 Jan 64	paper, plastics
28	C-14	40	8 Jan 64	glass bottles, tin cans
	H-3	10	8 Jan 64	glass bottles, tin cans

WEIGHT OF DRUM: 145 lbs

ACTIVITY OF CONTENT: 4,727.5 Microcuries

U. S. ARMY MEDICAL RESEARCH AND NUTRITION LABORATORY

FITZSIMONS GENERAL HOSPITAL

DENVER 86, COLORADO 80240

PLEASE REFER TO:
Drum No. 2

Date: 14 April 1964

Instrument reading, 15 mR/hr
surface and 0.07 mR/hr at
meter

No.	Isotope	Activity in μ c	Date	Material
1	C-14, Fe-59, S-35	50	27 Mar 64	high level hood filter
2	H-3	15	28 Nov 63	glass
	C-14	5	28 Nov 63	glass
3	Fe-59	10	10 Feb 64	paper
	S-35	15	10 Feb 64	paper
4	Fe-59	10	10 Feb 64	paper, plastics
	S-35	20	10 Feb 64	paper, plastics
5	C-14	100	30 Jan 64	paper, plastics
6	C-14	20	10 Mar 64	paper, plastics
	H-3	10	10 Mar 64	paper, plastics
	Fe-59	60	10 Mar 64	paper, plastics
7	Zn-65	50	10 Mar 64	paper, plastics
8	Cr-51	10	9 Mar 64	paper, plastics
9	Zn-65	25	9 Mar 64	paper, plastics
	S-35	75	9 Mar 64	paper, plastics
	Fe-59	15	9 Mar 64	paper, plastics
10	C-14	10	9 Mar 64	paper, gauze
	H-3	5	9 Mar 64	paper, gauze
	S-35	10	9 Mar 64	paper, gauze
	Ca-45	25	9 Mar 64	paper, gauze
11	Zn-65	100	11 Mar 64	glass vials
12	Fe-59	10	17 Mar 64	paper
13	C-14, H-3, S-35, Ca-45	100	16 Mar 64	paper, gauze
14	C-14	10	10 Mar 64	paper, plastics
15	Fe-59	100	23 Mar 64	paper, plastics
16	C-14	10	12 Mar 64	paper, plastics
	H-3	25	12 Mar 64	paper, plastics
	Zn-65	20	12 Mar 64	paper, plastics
17	S-35, C-14, H-3	10	4 Mar 64	paper, plastics
18	Sr-89	200	24 Mar 64	paper, glass
19	H-3, Ca-45, C-14, Sr-89	100	23 Mar 64	paper, plastics
20	C-14, Fe-59	100	21 Mar 64	paper, plastics
21	Ca-45, C-14	50	17 Mar 64	paper, plastics
22	C-14	100	18 Mar 64	paper, plastics
23	Zn-65	30	9 Mar 64	paper
24	Sr-89, C-14	50	1 Mar 64	paper, plastics
25	Fe-59, C-14	50	13 Mar 64	paper, plastics
26	C-14	5	17 Mar 64	glass vials
27	Ca-45, C-14, H-3	50	4 Mar 64	paper

WEIGHT OF DRUM: 148 lbs

ACTIVITY OF CONTENT: 1,655 Microcuries

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FITZSIMONS GENERAL HOSPITAL

DENVER 66, COLORADO 80240

IN REPLY REFER TO:

Drum No. 3

Date: 14 April 1964

Instrument Reading *0.07* mr/hr at surface and *0.07* mr/hr at one meter

No.	Isotope	Activity	Date	Material
1	C-14, H-3	5	1 Apr 64	glass vials
2	C-14, H-3	5	7 Apr 64	paper, gauze
	S-35, Fe-59	10	7 Apr 64	paper, gauze
	Sr-89	5	7 Apr 64	paper, gauze
3	C-14	1	8 Apr 64	paper
4	C-14, H-3	3	8 Apr 64	paper
	Sr-89, Fe-59,			
	Ca-45	7	8 Apr 64	paper, glass, plastics
5	C-14, H-3	2	6 Apr 64	paper
	S-35, Fe-59	8	6 Apr 64	paper
6	C-14, H-3, S-35,			
	Fe-59	5	3 Apr 64	paper, gauze, glass, plastic-
7	C-14, H-3, S-35,			
	Fe-59	2	7 Apr 64	paper
8	C-14, Fe-59,			
	Ca-45	10	6 Apr 64	paper
9	C-14, Fe-59,			
	S-35, H-3	10	6 Apr 64	paper, gauze
10	C-14	10	7 Apr 64	glass
11	C-14, H-3,			
	Ca-45	100	13 Mar 64	paper, gauze, glass
12	C-14, H-3,			
	Ca-45	100	13 Mar 64	paper, gauze, glass
13	C-14, Fe-59	5	9 Apr 64	vials, paper
14	C-14	500	19 Mar 64	ground chickens
15	C-14	20	13 Apr 64	glass vials, paper

WEIGHT OF DRUM: 151 lbs

ACTIVITY OF CONTENT: 808 Microcuries

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FITZSIMONS GENERAL HOSPITAL

DENVER 3d. COLORADO 80240

IN REPLY REFER TO:

Instrument Reading 0.20 mi/hr at
surface and 0.12 mi/hr at one
meter

Drum No. 4

Date: 14 April 1964

No.	Isotope	Activity in μ c	Date	Material
1	Sr-89	1000	3 Apr 64	rats
2	Fe-59	10	13 Mar 64	rats
3	Fe-59	50	13 Mar 64	rats
4	Fe-59	50	13 Mar 64	rats, paper
5	Fe-59	100	13 Mar 64	rats, paper
6	Ca-45	650	28 Feb 64	chicks
7	Zn-65	100	28 Feb 64	glass, plastic, liquids
8	Fe-59	1	28 Feb 64	rats, gauze, plastic
9	Ca-45	650	28 Feb 64	chickens
10	Zn-65	100	28 Feb 64	glass, plastic, liquids
11	Ca-45	750	21 Mar 64	eggs
12	Ca-45	1.5 mc	28 Mar 64	eggs
13	H-3 (3.4)	800	26 Mar 64	guinea pigs, paper
14	H-3 (3.4)	800	23 Mar 64	guinea pigs, paper
15	H-3	800	24 Mar 64	guinea pigs, paper

WEIGHT OF DRUM: 145 lbs

ACTIVITY OF CONTENT: 7,361 Microcuries

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FITZSIMONS GENERAL HOSPITAL

DENVER ~~30~~, COLORADO 80240

IN REPLY REFER TO:

Instrument Reading *0.15* mr/hr at
surface and *0.09* mr/hr at one
meter

Drum No. 5

Date: 14 April 1964

No.	Isotope	Activity in μc	Date	Material
1	Cr-51	110	17 Mar 64	dog (sex on)

WEIGHT OF DRUM: 300 lbs
ACTIVITY OF CONTENT: 110 Microcuries

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File: *901-03 AMRAD Radioisotope Committee*

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FITZSIMONS GENERAL HOSPITAL

DENVER 66, COLORADO 80240

IN REPLY REFER TO:

Instrument Reading 1.6 mr/hr at surface and 0.16 mr/hr at one meter

Drum No. 6

Date: 14 April 1964

No.	Isotope	Activity in μ c	Date	Material
1	Ca-45	10	28 Feb 64	glass, plastic, liquid
	Zn-65	10		
	C-14	100		
2	Sr-89	1	20 Mar 64	rats
3	H-3 (3.4)	1600	26 Mar 64	guinea pigs
4	Sr-89	.5 mc	17 Mar 64	rats
5	Ca-45	750	21 Mar 64	chickens
6	Fe-59	10	28 Feb 64	paper, plastic, glass, liquids
7	Fe-59	1.5 mc	28 Feb 64	paper, plastic, glass, liquids
8	Ca-45	.5 mc	28 Mar 64	eggs
9	C-14	60	5 Mar 64	chicks
10	C-14	45	4 Mar 64	chicks
11	Zn-65	100	3 Mar 64	rats, guinea pigs, glass
	S-35	150		
12	S-35	180	31 Mar 64	rats, guinea pigs, glass
	Zn-65	100		
13	Sr-89	15	2 Jul 63	rat
14	Fe-59	1 mc	6 Mar 64	liquids, plastic, gauze, paper
15	Fe-59	2 mc	5 Mar 64	rats, paper
16	C-14	30	15 Mar 64	chicks
17	Zn-65	100	3 Mar 64	plastic, liquids
18	C-14	2	27 Aug 63	hamster
19	C-14	50	6 Mar 64	rats
20	Fe-59	6	24 Feb 64	paper
21	Fe-59 C-14	5	16 Mar 64	paper, plastic
22	C-14 Sr-89	10	10 Mar 64	paper, glass

EIGHT OF DRUM: 146 lbs
 ACTIVITY OF CONTENT: 8,623 Microcuries
 ten no. 12 removed from drum

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Accession #: 681A 3359

Box #: 47/25

File: 901-03 Amros Radioisotope Committee

Fitzsimons Gen. Hosp 1964

U. S. ARMY MEDICAL RESEARCH AND NUTRITION LABORATORY

FITZSIMONS GENERAL HOSPITAL

DENVER 16, COLORADO 80240

IN REPLY REFER TO:

Instrument Reading: 20mr/hr at
surface and 0.25mr/hr at one
meter

Drum No. 7

Date: 14 April 1964

No.	Isotope	Activity	Date	Material
1	Sr-89	1.8 mc	8 Apr 64	paper, rat feces
2	C-12	5 μ c	17 Feb 64	glass, plastic

DRUM WEIGHT 153 lbs
ACTIVITY OF CONTENT: 1,805 Microcuries

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Accession #: 168A 3359

Box #: 47/25

File: 901-03 AMRAD Radioisotope Committee

Fitzsimons Gen Hosp 1964

U. S. ARMY MEDICAL RESEARCH AND NUTRITION LABORATORY
 FITZSIMONS GENERAL HOSPITAL
 DENVER, COLORADO, 80240

IN REPLY REFER TO

Drum No. 2

Date: 17 April 1964

Instrument reading m/hr at
 surface and m/hr at one meter

No.	Isotope	Activity in μ c	Date	Material
1	mixed	10	1 Apr 64	plastics, needles, glass, paper
2	mixed	15	3 Mar 64	plastics, needles, glass, paper
3	mixed	20	3 Mar 64	plastics, needles, glass, paper
4	mixed	25	13 Apr 64	plastics, needles, glass, paper
5	C-14	1	17 Apr 64	paper
6	C-14	5	17 Apr 64	paper, glass
7	Ca-45	3	17 Apr 64	paper
8	C-14	80	16 Apr 64	paper, faces
9	C-14	80	16 Apr 64	paper, faces
10	Ca-45	5	17 Apr 64	glass, gauze, paper
11	Ca-45	5	17 Apr 64	glass
12	Ca-45	900	10 Apr 64	eggs
13	C-14	10	9 Apr 64	rats
14	C-14	110	16 Apr 64	chickens

1269

Those isotopes marked "mixed" may be a combination of two or more of the following:

I-131 Co-57 Cr-51 Fe-59 Au-198 Hg-203
 P-32 Sr-90 Se-75

Weight of Drum: 136 lbs

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Accession #: 128A 3359

Box #: 47/75

File: 901-03 Amros Radioisotope Committee

Fitzsimons Gen. Hosp 1964

DISPOSITION FORM

(AR 340-15)

OFFICE SYMBOL OR FILE REFERENCE	SUBJECT
MEDPS-PO	Radioisotope Committee Report - Fitzsimons General Hospital

TO Chief, Consultant Division FROM Preventive Medicine Div DATE 23 April 1964 CMT 1
ATTN: ~~Col Rhea~~ Major Goldstein/61581/gew
Chief, Medical Consultant Br
ATTN: Col Arney
Chief, Nuclear Medicine Br
ATTN: Col Goldstein
Chief, Radiology Branch
ATTN: Col Harrell
Chief, Occupational Health Br
ATTN: Col Daniels
IN TURN

1. Forwarded for information, action and comment are subject reports dated 10 March 1964 and 7 April 1964.
2. Institutional license for Fitzsimons General Hospital was issued 3 February 1964.
3. Reference paragraph 3, Minutes of Committee Meeting dated 10 March. Application for amendment of license (volunteer study) forwarded to AEC on 27 March 1964. Inquiry into status at AEC indicated subject action is still under review of the Medical Advisory Committee to AEC.

2 Incl
as


BERNARD L. GOLDSTEIN
Major, MSC
Preventive Medicine Division

DA FORM 1 FEB 62 2496 REPLACES DD FORM 96, EXISTING SUPPLIES OF WHICH WILL BE ISSUED AND USED UNTIL 1 FEB 63 UNLESS SOONER EXHAUSTED. * U.S. GOVERNMENT PRINTING OFFICE: 1962 O-629168

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Accession #: 168A 3359
Box #: 47/75
File: 901-03 AMEOS Radioisotope Committee
Fitzsimons Gen. Hosp 1964

RADIOLOGY SERVICE
FITZSIMONS GENERAL HOSPITAL
U. S. ARMY
DENVER, COLORADO, 80240

IN REPLY REFER TO
MEDEO-X

15 April 1964

SUBJECT: Quarterly Report of the Fitzsimons
General Hospital Radioisotope Committee

TO: The Surgeon General
Department of the Army
ATTN: MEDPS-PO
Washington D.C. 20315

The following material comprises the Radioisotope Committee Quarterly Report in accordance with AR-40-37.


HERBERT F. JOHNSON
Major MC
Recorder, Radioisotope Committee

ADDRESS ALL COMMUNICATIONS TO THE COMMANDING GENERAL
FITZSIMONS GENERAL HOSPITAL

Washington National Record Center
Office of the Army Surgeon General
Record Group 112

Accession #: 68A 3359

Box #: 47/75

File: 901-03 AMEOS Radioisotope Committee

Fitzsimons Gen. Hosp 1964

SMUSA-SSDO (17 Mar 64) 1st Ind
SUBJECT: Disposition of Radioactive Waste

US ARMY EDGEWOOD ARSENAL, Edgewood Arsenal, Md 21010, 24 March 1964

TO: Commanding General, USA Medical Research and Nutrition Laboratory,
Fitzsimons General Hospital, ATTN: MELEN-RI, Denver, Colorado 80210

1. The radioactive material reported in basic letter may be shipped to Transportation Officer, US Army Edgewood Arsenal, Maryland, Depot Operations Division, M/F Radioactive Material Disposal Facility, with TWO COPIES of shipping document.
2. The material must be securely packed, sealed airtight in strong outside containers and shipped in accordance with Title 49, Parts 71 to 78, Code of Federal Regulations, Transportation, in regard to external dose rates, removable contamination on the package surface, container structure, marking, and labeling. The material also must be shipped by refrigerated van. The local transportation officer should be able to supply appropriate shipping criteria.
3. It is required that the shipping documents contain the following signed certification:
"This is to certify that the above-named articles are properly described, and are packed, and marked and are in proper condition for transportation according to the regulations prescribed by the Interstate Commerce Commission."
4. Two DA 51 labels, properly filled out, should be applied to the exterior of each shipping container.
5. In accordance with paragraph 6, AR 755-380, 10 April 1962, cost for packaging, handling and transportation are a funding responsibility of the shipping installation.
6. It is requested that two copies of the shipping document be forwarded to consignee in advance of shipment. Shipment by Parcel Post or any other US Mail is not authorized. Package(s) shipped should be marked to indicate consignee, consignor and content nomenclature. Shipment should be completed prior to 24 April 1964.

FOR THE COMMANDER

HERMAN L. LAUTZ
Acting Chief
Depot Operations Division

Washington National Record Center
Office of the Army Surgeon General
Record Group 112

Accession #: 128A 3359

Box #: 17/75

File: 901-03 Amc03 Radioisotope Committee

Fitzsimons Gen Hosp 1964

MINUTES OF RADIOISOTOPE COMMITTEE MEETING

The first meeting of the Radioisotope Committee, Fitzsimons General Hospital, as constituted by Special Orders 194, paragraph 12, dated 26 September 1963, was called to order at 1415 hours, 10 March 1964. Colonel James A. Orbison, Chief, Department of Medicine, as Senior Medical Officer present, presided as Chairman.

All members were notified of the meeting. Members absent were Lt. Colonel J. E. Hansen, Chief, Physiology Division, U. S. Army Medical Research and Nutrition Laboratory (USAMRNL); and Chief, Purchasing and Contracting Branch, Supply and Service Division, who was excused.

The following action was taken:

1. It is unanimously agreed that a quorum will consist of five members of this Committee.

2. It was noted that the studies utilizing radioisotopes in human volunteer subjects, as proposed by USAMRNL, was approved by the Secretary of the Army in letter, dated 22 February 1964, Subject: Request for Approval for Human Use of Radioisotopes in Tracer Amounts in Volunteer Experimental Research Subjects.

3. It is recommended by the Chairman of the Committee and unanimously agreed upon by all committee members present that the requested amendment to the Radioisotope license be forwarded to the Atomic Energy Commission for approval; and further that the individuals listed in the protocol (if the project is approved) be certified by this committee as users of the following:

Carbon 14
Hydrogen 3
Magnesium 28
Calcium 47
Calcium 45

4. A discussion was held as to the desirability of naming a permanent chairman for the Committee, but it was decided the present system of having the senior officer present acting as chairman would best serve the requirements.

5. The Chairman, in the absence of any other guidance, hereby appoints the Post Radiation Safety Officer as Recorder for this committee.

6. In accordance with AR 40-37, paragraph 4a, which requires a quarterly report of the proceedings of the Radioisotope Committee, it is decided that meetings should be established on a quarterly basis and that they be held no later than the 8th day of the month following the end of the reporting period.

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Fitzsimons Gen. Hosp 1964

7. It is agreed upon that the next meeting of the Radioisotope Committee will be held at 1315 hours 7 April 1964 in the Bruns Room. The members will be so notified by the Recorder.

8. Within our current operational program, the quantities of radioisotopes procured are a matter of record with the Post Radiation Safety Officer. With respect to the amounts used, disposed of, and in storage, this is a matter of record in the Radioisotope Clinic and the USAMRNL. Their respective reports are to be forwarded to the Post Radiation Safety Officer, where they will be consolidated and submitted to this committee.

9. A copy of the minutes of each Radioisotope Committee meeting will be included in the committee's quarterly report.

10. Each user's 201 file will contain a copy of his current qualifications and his certification as a user by this committee.

11. Each individual user will prepare a list of procedures, with each radioisotope used, for consideration by this committee at its next meeting.

The meeting was adjourned at 1640 hours.

Herbert F. Johnson
HERBERT F. JOHNSON
Major, MC
Recorder, Radioisotope Committee

APPROVED: Radioisotope Committee
Fitzsimons General Hospital

10 March 1964

James A. Orbison
JAMES A. ORBISON
Colonel, MC
Chairman, Radioisotope Committee

C. S. Lyter
C. S. LYTER
Maj General, MC
Commanding

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File: 901-03 AMEOS Radioisotope Committee

Fitzsimons Gen. Hosp 1964

FITZSIMONS GENERAL HOSPITAL
Denver, Colorado 80240

SPECIAL ORDERS
NUMBER 194

E X T R A C T

26 September 1963

10. TC 322. UP para 10c AR 370-5 & para 111 AR 672-5-1 FNI USA MP Det this sta qual badge--course--
weapon--score indic on 17 Sep 63 awd Badges indic.

Sharpshooter Badges w/Pistol Bar		Weapons	Crs	Score
WILLIAMS, JERRY D	US55705680	PFC E3 Cal 45 1911 A-1	III	315
VANDERBILT, STEPHEN E	US55730118	PFC E3 Do.	Do.	306

11. TC 371. Fol orders REVOKED.
SMO: Para 10 SO 192 this Hq CS
Pert to: Appointment of Radioisotope Committee

12. TC 350. Following indiv Hq Comp UNOINDC this sta APPOINTED.

Chief, Radiology Svc
Chief, Radioisotope Sec
Chief, Pathology Svc
Chief, Dept of Medicine
Post Radiation Safety Officer
Chief, Radioisotope Sec Physiology Div USAMRENL
Chief, Chemistry Division Do.
Chief, Physiology Division Do.
Commanding Officer Do.
Chief, Purchasing & Contracting Branch Supply & Svc Div
Apt to: Radioisotope Committee Pdr Indef Purpose: Auth & Supervise isotope utilization Auth: AR 40-37
Sp Instr: Para 11 SO 81 this Hq CS is rescinded. The Senior Medical Officer present will act as committee
chairman.

FOR THE COMMANDER:

OFFICIAL:



E D DURAN
1st Lt, AGC
Asst Adjutant

PAUL A MAXSON
Major, MSC
Adjutant

DISTRIBUTION:

- 1 - Cen Post ClnC
- 1 - Hsg Ofc
- 2 - APO
- 2 - CO USA MP Det
- 2 - Enl 201
- 1 - Str & Actg
- 2 - Adj
- 2 - XO
- 20 - Sec & Conc (Para 12) 2 ea

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Record Group 112

Accession #: 68A 3359

Box #: 47/75

File: 901-03 AMEOS Radioisotope Committee

Fitzsimons Gen. Hosp 1564

MINUTES OF RADIOISOTOPE COMMITTEE MEETING

The second meeting of the Radioisotope Committee, Fitzsimons General Hospital was called to order at 1315 hours, 7 April 1964. Lt. Col. Marion E. McDowell, MC, Commanding Officer of the USAMRNL, as Senior Medical Officer present, presided as Chairman.

All members were notified of the meeting. Members absent were Colonel James A. Orbison, Chief, Department of Medicine; Colonel Arthur Steer, Chief, Pathology Service, who was represented by Lt. Col. Glen A. West, Assistant Chief of Pathology Service; and the Chief of Purchasing and Contracting Branch, Supply and Service Division, who was represented by Mr. Samuel Nethery of the Supply and Service Division.

Minutes of the last meeting of the Radioisotope Committee were read by the Recorder, and motion was made and carried that they be approved as read.

The following new actions were taken:

1. Guide lines for the procurement of radioisotopes (Section I) and for individual authorization to use radioisotopes (Section II) were drafted and approved by the Committee, and are affixed hereto as Appendix I.
2. Application was made by Major Gerald L. DeNardo, MC, Chief, Radioisotope Section, Fitzsimons General Hospital, requesting authorization by the Committee for broad general usage of radioisotopes in humans as specified in License No. 5-46-13, and for product materials with atomic numbers 1-83 inclusive in animal and in vitro applications. Certification of Major DeNardo was unanimously approved by the Committee. (Application is affixed hereto as Appendix II.)
3. Request was submitted by Major Herbert F. Johnson, MC, Chief, Radiation Therapy Section, Fitzsimons General Hospital, for authorization to use any radioisotopes specified in License No. 5-46-13 for human use according to limitations of license. This authorization was approved by the Committee. (Application is affixed hereto as Appendix III.)
4. Request for certification was submitted by Major Paul E. Siebert, MC, Chief, Radiology Service, for certain specific procedures (human use only), as listed in Appendix IV attached hereto. The requested certification was approved by the Committee.
5. Application was submitted requesting Major Joseph J. Darlak, MC, Radiology Service, be certified for limited usage of radioisotopes as

Incl 5

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Fitzsimons Gen. Hosp 1964

listed in his request, attached hereto as Appendix V. The requested certification was approved by the Committee.

6. Application was submitted requesting the following individuals from USAMRNL be certified as users for non-human use of all radioisotopes with atomic numbers 1-83 inclusive: Howerde E. Sauberlich, Ph. D.; Zigmund Z. Ziporin, Ph. D.; and Capt. Kenneth E. Kinnamon, D.V.M., M.S. The requested certification was approved by the Committee. (Application is attached hereto as Appendix VI.)

7. Request was submitted for certification of nine individuals from USAMRNL as users for non-human use of specific radioisotopes. (Individuals and radioisotopes for which they are to be certified are listed in request attached hereto as Appendix VII.) The requested certification was approved by the Committee.

8. Request was submitted for certification of five individuals from USAMRNL as users of radioisotopes in humans, subject to conditions outlined in "Request for Approval for Human Use of Radioisotopes in Tracer Amounts in Volunteer Experimental Research Subjects" submitted by the USAMRNL and Fitzsimons General Hospital. (Individuals listed in request affixed hereto as Appendix VIII.) Requested certification was approved by the Committee.

9. It is moved and unanimously agreed upon that the certifications of the individuals listed in Items 2 through 8, together with their qualifications, be placed in their respective 201 files or equivalent civilian files.

10. In compliance with AR 40-37, the following list of procedures is submitted by Major DeNardo, in which the dosage used exceeded that of Table 1 of the Appendix to AR 40-37 during quarter 1 January 1964 through 31 March 1964:

<u>Diagnostic Studies</u>	<u>Dosage Range as listed in AR</u>	<u>Actual Dosage Used</u>
I-131 - RISA (Plasma Volume)	5-10 uc	10-15 uc
I-131 - Hippuran	5-10 uc	10-15 uc
I-131 - Oleic Acid	25 uc	50-100 uc
I-131 - Triolein	25 uc	50-100 uc
Cr-51 - Sodium Chromate (Red cell mass)	25-35 uc	25-50 uc
(Red cell survival)	50-75 uc	50-100 uc

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Fitzsimons Gen. Hosp 1964

<u>Diagnostic Studies</u>	<u>Dosage Range as listed in AR</u>	<u>Actual Dosage Used</u>
Gold-198 - Colloidal Gold	70-100 uc	100-200 uc
Hg 203 - Chlormerodrin	100-150 uc	150-200 uc
I-131 - Sodium Iodide (Hyperthyroid)	5-10 mc	3-15 mc
P-32 - Colloidal Chromic Phosphate	5-10 mc	5-15 mc

The following additional radioisotopes were used:

I-131 Polyvinylpyrrolidone (for testing protein loss from GI tract)	50-100 uc
P-32 Soluble Phosphate (for treatment of bone metastasis)	2 mc
Mercury 203 (for brain scanning)	700-800 uc
Selenium 75 (for pancreatic scanning)	300-400 uc
Strontium 85 and strontium nitrate (for bone scanning)	50 uc

The above deviations were discussed and approved by the Committee. It was agreed that the above-mentioned deviations will not be reviewed at any future meetings of the Radioisotope Committee--that it will be necessary to report and approve only new deviations not previously mentioned.

It is also agreed it would be desirable to reduce the usage of the aforementioned radioisotopes to the AR range. However, the value of the studies are such that it is necessary to exceed dosage range. (Deviation is due to peculiarities of our equipment and is within limits of AEC license.)

11. Reports of radioisotopes procured, on hand, and disposed of during quarter 1 January through 31 March 1964 were submitted by the Radiological Safety Officer. It is noted that amounts on hand did not exceed limitations of AEC license at any time. The reports were approved by the Committee and are attached as Appendix IX.

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File: 901-03 AMEOS Radioisotope Committee

Fitzsimons Gen. Hosp 1964

12. It is agreed that the next meeting of the Radioisotope Committee will be held at 1315 hours 7 July 1964 in the Research and Development Conference Room.

The meeting adjourned at 1520 hours.

Herbert F. Johnson
HERBERT F. JOHNSON
Major, MC
Recorder, Radioisotope Committee

APPROVED: Radioisotope Committee
Fitzsimons General Hospital

7 April 1964

M E McDowell by J. H. Hemen
MARION E. MC DOWELL
Lt. Col., MC
Chairman, Radioisotope Committee

C. S. Lyter
C. S. LYTER
Maj General, MC
Commanding

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File: 901-03 AMEDS Radioisotope Committee

Fitzsimons Gen. Hosp 1964

I. The Radiological Safety Officer will be notified of all radioisotopes acquired by any user on post. Any radioisotope acquired by an individual assigned to USAMRNL will be acquired by the Chief, Radioisotope Section, USAMRNL. Radioisotopes acquired by any individual assigned to Fitzsimons General Hospital will be acquired by the Chief, Radiology Service or his authorized representative. The Chief, Radioisotope Section, USAMRNL and the Chief, Radiology Service or his authorized representative will be responsible for making the appropriate reports to the Radiological Safety Officer.

II. Radioisotope Committee guide lines for individual authorization to use radioisotopes.

A. Introduction. Rigid criteria for authorization to use radioisotopes cannot be established, because they vary widely with circumstances. The requirements which follow should be interpreted as minimal requirements which in general should be exceeded by the individuals desiring authorization to use radioisotopes. Periods of training, preceptorship and experience with radioisotopes of less than four months will generally be certified by the preceptor if he so desires. Endorsement will be rendered by the radioisotope committee when such experience and training exceeds four months. Authorization for unsupervised use by an individual of radioisotopes under license No. 5-46-13 will be rendered by separate action, when indicated.

B. Radioisotope Use in Animals and In Vitro.

1. General use of any and all radioisotopes authorized by license No. 5-46-13.

a. Minimum training and experience of one year to include extensive use of radioisotopes and a period of formal or preceptor training.

b. Minimum educational level of a Bachelor's Degree.

c. Experience and knowledge of radioisotope instrumentation, protection, handling, usage and health physics.

d. Experience with radioisotopes of varying physical, chemical and biological characteristics.

e. Maximum amount of radioisotopes on hand to be determined by the limitations of license No. 5-46-13.

2. Use of specific radioisotopes.

a. Minimum training and experience of six months to include extensive use of radioisotopes and a period of formal or preceptor training.

b. Minimum educational level of a Bachelor's Degree.

c. Experience and knowledge of radioisotope instrumentation, protection, handling, usage and health physics.

d. Experience with radioisotopes with similar physical, chemical and biological characteristics.

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Fitzsimons Gen. Hosp 1964

e. Maximum amount of radioisotopes on hand to be specified by the Radioisotope Committee.

f. Specific radioisotopes authorized for use without regard for chemical form.

C. Human Use.

1. An individual authorized to use radioisotopes in humans must be a physician.

2. Authorization to use radioisotopes in humans will specify the radioisotope, the use, the chemical form, the dosage range, and the maximum amount on hand.

3. Limitation of User.

a. Use of all radioisotopes approved for human use by license No. 5-46-13.

(1) Minimum training and experience of one year to include extensive use of radioisotopes and a period of formal or preceptor training. In vitro and animal experience may be considered as fulfilling part, but not all, of this requirement.

(2) Experience and knowledge of radioisotope instrumentation, protection, handling, usage and health physics.

(3) Experience with radioisotopes of varying physical, chemical and biological characteristics.

(4) Maximum amounts of radioisotopes on hand to be determined by the limitations of license No. 5-46-13.

b. Limited use of radioisotopes for human use under license No. 5-46-13, but not covered in II, C, 3, c.

(1) Minimum training and experience of four months to include extensive use of radioisotopes and a period of formal or preceptor training.

(2) Experience and knowledge of radioisotope instrumentation, protection, handling, usage and health physics.

(3) Experience with radioisotopes with physical, chemical and biologic characteristics similar to those authorized for use.

(4) Maximum amounts of radioisotopes on hand to be determined by the limitations of license No. 5-46-13.

c. Use of an individual radioisotope, specified by physical and chemical form.

(1) Approval determined by the radioisotope committee upon submission of detailed protocol to include health physics, purpose, goals, dosage range, route of administration, site of the study and method of radioactive waste disposal.

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Accession #: 68A 3359

Box #: 47/75

File: 901-03 AMEOS Radioisotope Committee

Fitzsimons Gen. Hosp 1964

8 April 1964

SUBJECT: Disposition of Radioactive Waste

Solid radioactive waste by shipment to Edgewood Arsenal, Maryland in accordance with AR-755-380, paragraphs 15 thru 18 and as directed in letter SMJEA-SSDU dated 22 January 1964, from Acting Chief, Depot Operations Division, Edgewood Arsenal Maryland.

A total of approximately 26,961 millicuries were shipped.

The radioactivity consisted of the following:

- a. Calcium-45
- b. Carbon-14
- c. Chromium-51
- d. Hydrogen-3
- e. Iodine-131
- f. Sodium-22
- g. Strontium-89
- h. Sulfur-35
- i. Zinc-65


HERBERT F. JOHNSON
Major MC
Radiological Safety Officer

Washington National Record Center
Office of the Army Surgeon General
Record Group 112

Accession #: 68A 3359

Box #: 47/75

File: 901-03 AMEDS Radioisotope Committee

Fitzsimons Gen. Hosp 1964

Form No. 2	Date: 3 Feb 63	Instrument Reading surface and	mr/hr at mr/hr at one meter	
No	Isotope	Activity in uc	Date	Material
1	S35	25 uc	7 Dec 63	Paper, Vials & Syringes
	C14	10 uc	7 Dec 63	Paper & Syringes
	H3	15 uc	7 Dec 63	Paper, Vials & Syringes
2	S35	75 uc	31 Oct 63	Paper, Vials & Syringes
	C14	30 uc	31 Oct 63	Paper & Vials
	H3	40 uc	31 Oct 63	Paper, Vials & Syringes
3	S35	50 uc	20 Dec 63	Paper, Vials & Syringes
4	S35	45 uc	7 Dec 63	Paper, Vials & Syringes
	Sr89	50 uc	7 Dec 63	Paper, Vials & Syringes
	H3	5 uc	7 Dec 63	Paper & Syringes
	C14	5 uc	7 Dec 63	Paper
	Ca45	45 uc	7 Dec 63	Paper, Vials & Syringes
5	S35	50 uc	7 Nov 63	Paper, Vials & Syringes
6	S35	50 uc	18 Nov 63	Paper, Vials & Syringes
7	H3	10 uc	4 Sep 63	Paper & Syringes
	S35	30 uc	4 Sep 63	Paper, Vials & Syringes
8	Sr89	50 uc	7 Oct 63	Paper & Syringes
9	C14	45 uc	3 Dec 63	Paper & Trash
	H3	30 uc	3 Dec 63	Paper, Vials & Syringes
	S35	20 uc	3 Dec 63	Paper, Vials & Syringes
10	H3	10 uc	11 Oct 63	Paper & Trash
	C14	15 uc	11 Oct 63	Paper & Trash
	Sr89	30 uc	11 Oct 63	Paper, Vials & Syringes
	Ca45	10 uc	11 Oct 63	Paper & Syringes
	S35	30 uc	11 Oct 63	Paper, Vials & Syringes
11	S35	50 uc	5 Nov 63	Wax
12	H3	15 uc	11 Oct 63	Paper & Vials
	S35	20 uc	11 Oct 63	Paper, Vials & Syringes
	C14	10 uc	11 Oct 63	Paper, Trash & Syringes
	Sr89	15 uc	11 Oct 63	Paper, Trash & Syringes
	Ca45	40 uc	11 Oct 63	Paper, Vials & Syringes
13	S35	50 uc	24 Oct 63	Paper, Vials & Syringes
14	S35	100 uc	24 Oct 63	Paper, Vials & Syringes
15	H3	20 uc	31 Oct 63	Paper, Vials & Syringes
	S35	45 uc	31 Oct 63	Paper, Vials & Syringes
	C14	15 uc	31 Oct 63	Paper, Vials & Syringes
16	H3	15 uc	11 Oct 63	Paper, Vials & Syringes
	C14	10 uc	11 Oct 63	Paper
	S35	50 uc	11 Oct 63	Paper, Vials & Syringes
	Sr89	50 uc	11 Oct 63	Paper, Syringes & Gauze
	Ca45	25 uc	11 Oct 63	Paper, Syringe, Vials & Gauze
17	H3	15 uc	11 Nov 63	Paper, Vials & Glass
18	C14	50 uc	22 Sep 63	Glass & Trash
19	S35	50 uc	11 Nov 63	Paper & Joses
20	S35	100 uc	11 Dec 63	Paper & Vials
21	H3	10 uc	3 Dec 63	Paper & Syringes
	Na22	25 uc	3 Dec 63	Paper & Syringes
	Cr51	15 uc	3 Dec 63	Paper & Syringes
22	C14	5 uc	19 Dec 63	Paper & Syringes
	H3	5 uc	19 Dec 63	Paper & Syringes
23	Cr51	15 uc	17 Dec 63	Paper & Syringes
24	C14	5 uc	4 Dec 63	Glass, Syringes & Gauze
25	H3, Na22, Cr51	50 uc	3 Dec 63	Paper, Vials & Syringes
26	C14	5 uc	3 Dec 63	Paper & Glass
27	C14	10 uc	7 Dec 63	Paper & Trash
28	C14	10 uc	21 Oct 63	Gauze
29	S35	10 uc	5 Dec 63	Gauze
30	C14	5 uc	20 Dec 63	Paper & Gauze
31	Ca45	25 uc	10 Dec 63	Paper, Vials & Syringes
32	C14, H3	20 uc	5 Dec 63	Paper & Trash
33	C14	15 uc	3 Dec 63	Paper & Trash
34	C14	10 uc	3 Dec 63	Wood Board

80910

Drum No 3

Date: 3 Feb 64

Instrument Reading mR hr at
Surface and mR hr at 100 meter

No.	Isotope	Activity in uc	Date	Material
1	²²⁶ Ra	150 uc	24 Sep 63	Books & Paper
	²³² Th	400 uc	24 Sep 63	Books & Paper

Weight of Drum: 132 lbs

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File: 901-03 Army's Radioisotope Committee

Transmission Gen. Hosp 1964

Drugs No 4

Date: 3 Feb 64

Instrument: Geiger counter
surface and air by 20 one meter

No	Isotope	Activity in uc	Date	Material
1	C14	80 uc	30 Dec 63	Gauze & Paper
2	H3	100 uc	23 Mar 63	Rats, Eggs & Trash
	C14	125 uc	23 Mar 63	Rats, Eggs & Trash
	Hr89	75 uc	23 Mar 63	Rats, Eggs & Trash
3	C14	10 uc	30 Jul 63	Waste in cans
4	Hr89	4,500.00 uc	20 Sep 63	Rats
5	C14	115 uc	8 Jan 64	Rats & Paper
6	C14	20 uc	30 Dec 63	Gauze
7	C14	20 uc	16 Dec 63	Paper, Gauze & Syringes
	Hr89	100 uc	16 Dec 63	Paper, Gauze & Syringes
8	Hr89	100 uc	5 Dec 63	Paper, Gauze & Syringes
9	C14	300 uc	6 Jan 64	Collagen
10	C14	20 uc	15 Jan 64	Paper & Trash
11	Cs137	240 uc	26 Dec 63	Eggs
12	Cs137	500 uc	21 Dec 63	Eggs
13	Cs137	450 uc	24 Dec 63	Eggs
14	H3	3,600 uc	16 Oct 63	Eggs
15	Cs137	550 uc	24 Dec 63	Eggs
16	Cs137	800 uc	19 Dec 63	Eggs
17	H3	2000 uc	8 Oct 63	Eggs
18	C14	300 uc	2 Dec 63	Rats
19	C14	700 uc	21 Oct 63	Guinea Pigs
	H3	400 uc	21 Oct 63	Guinea Pigs
20	C14	105 uc	12 Nov 63	Rats
21	Cs137	100 uc	22 Dec 63	Paper & Waste
22	Zn65	25 uc	10 Oct 63	Vials & Paper
23	Zn65	5 uc	10 Oct 63	Vials & Plastic
24	Zn65	5 uc	10 Oct 63	Vials & Plastic
25	H3	10 uc	25 Nov 63	Paper
26	H3	5 uc	12 Feb 63	Paper & Vials

Weight of Drugs 93 lbs

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File: 901-03 Amros Radioisotope Committee

Tilsumer Gen Hosp 1964

Drum No 5

Date 3 Feb 64

Instrument Model
surface and .05
motor

No.	Isotope	Activity in uc	Date	Material
1	Ca 45	87 uc	19 Dec 63	Eggs
2	H-3	3,600uc	16 Oct 63	Eggs
3	Ca45	20 uc	10 Oct 63	Eggs
4	Ca45	20 uc	5 Oct 63	Eggs
5	Ca45	420 uc	21 Oct 63	Rats
6	Ca45	152uc	8 Oct 63	Eggs
7	C 14	300 uc	8 Oct 63	Rats
8	Ca45	10 uc	8 Oct 63	Rats
9	C-14	150 uc	3 Dec 63	Rats
10	Sr89	300 uc	3 Dec 63	Rats
11	S 35	150 uc	27 Sept63	Rats
12	S 35	150 uc	22 Sept63	Rats
13	C 14	150 uc	9 Jan 64	Chickens
14	C 14	150 uc	9 Jan 64	Chickens
15	S 35	400 uc	27 Sep 63	Rats
16	Zn65	25 uc	10 Oct 63	Plastic, Vials
17	Zn65	5 uc	10 Oct 63	" "
18	S 35	1 uc	6 Nov 63	Paper
19	S 35	1 uc	10 Nov 63	Paper
20	Ua45	730 uc	31 Jan 64	Eggs
21	Ca45	730 uc	31 Jan 64	Eggs

Weight of Drum: 120 lbs

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File: 901-03 Amers Radioisotope Committee

Massachusetts Gen. Hosp 1964

Drum No. 6

Date: 3 Feb 64

Instrument Reading surface and ... at ...

No	Isotope	Activity In uc	Date	Material
1	H3-C14	75 uc	4 Dec 63	Paper & Trash
2	H3-C14	5 uc	29 Jan 64	Vials, Syringes & Paper
3	H3	5 uc	3 Dec 63	Vials & Paper
4	H3-C14	75 uc	4 Dec 63	Vials, Paper & Syringes
5	C14	10 uc	19 Dec 63	Trash
6	C14	15 uc	21 Dec 63	Paper, Vials & Syringes
7	C14-H3	10 uc	14 Dec 63	Paper & Waste
8	H3	10 uc	3 Dec 63	Trash & Paper
9	Mix	20 uc	24 Jan 64	Glass, Plastics, Paper Needles
10	Mix	15 uc	16 Sep 63	Paper, Glass, Plastics & Needles
11	Mix	10 uc	24 Oct 63	Paper, Glass, Plastics & Needles
12	Mix	5 uc	1 Sep 63	Paper, Glass, Plastics & Needles
13	Mix	10 uc	26 Jan 64	Paper, Glass, Plastics & Needles
14	Mix	10 uc	3 Sep 63	Paper, Glass, Plastics & Needles
15	Mix	5 uc	24 Aug 63	Paper, Glass, Plastics & Needles
16	Mix	15 uc	10 Sep 63	Paper, Glass, Plastics & Needles
17	Mix	10 uc	18 Dec 63	Paper, Glass, Plastics & Needles
18	Mix	5 uc	23 Dec 63	Paper, Glass, Plastics & Needles
19	C14	15 uc	29 Jan 64	Paper & Gauze
20	H3	50 uc	14 Oct 63	Paper

* These isotopes marked "Mix" may be a combination of two or more of the following:

¹³¹I, ¹⁹⁹Au, ²⁵²Cf, ⁵⁹Fe

Weight of Drum 115 lbs

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File: 901-03 AMEDS Radioisotope Committee

Fitzsimons Gen Hosp 1964

Form No 1 Date: 3 Feb 1964 Instrument: adding surface and number at one meter

No.	Isotope	Activity in uc	Date	Material
1	C14	50 uc	23 Jan 64	Paper
2	C14	50 uc	14 Jan 64	Paper & Vials
	835	50 uc	14 Jan 64	Paper & Vials
3	C14	60 uc	22 Jan 64	Paper & Vials
	835	40 uc	22 Jan 64	Paper & Vials
4	C14	20 uc	23 Jan 64	Paper, Vials & Syringes
	835	30 uc	23 Jan 64	Paper, Vials & Syringes
	1255	25 uc	23 Jan 64	Paper, Vials & Syringes
5	C14	40 uc	23 Jan 64	Paper, Vials & Syringes
	835	20 uc	23 Jan 64	Paper, Vials & Syringes
	1255	40 uc	23 Jan 64	Paper, Vials & Syringes
6	C14	40 uc	24 Jan 64	Paper, Vials & Syringes
	835	60 uc	24 Jan 64	Paper, Vials & Syringes
7	C14	50 uc	17 Jan 64	Paper, Vials & Syringes
8	C14	25 uc	9 Jan 64	Paper & Vials
9	C14	20 uc	15 Jan 64	Paper
	1255	40 uc	15 Jan 64	Paper & Vials
	835	40 uc	15 Jan 64	Paper, Vials & Syringes
10	C14	20 uc	20 Jan 64	Paper, Vials & Syringes
11	C14	10 uc	23 Jan 64	Paper
	835	40 uc	23 Jan 64	Paper & Syringes
	1255	10 uc	23 Jan 64	Paper & Syringes
12	Na22	50 uc	17 Jan 64	Paper, Vials & Syringes
13	C14	25 uc	12 Jan 64	Paper, Vials & Syringes
14	C14	25 uc	6 Jan 64	Paper & Vials
	835	25 uc	6 Jan 64	Paper, Vials & Syringes
15	C14	20 uc	14 Jan 64	Paper
	835	40 uc	14 Jan 64	Paper, Vials & Syringes
16	1255	40 uc	23 Jan 64	Paper & Syringes
	835	40 uc	23 Jan 64	Paper, Vials & Syringes
17	C14	20 uc	14 Jan 64	Paper
	835	60 uc	14 Jan 64	Paper, Vials & Syringes
	1255	20 uc	14 Jan 64	Paper, Vials & Syringes
18	C14	20 uc	23 Jan 64	Paper & Syringes
	1255	30 uc	23 Jan 64	Paper, Vials & Syringes
19	C14	10 uc	15 Jan 64	Paper
20	C14	10 uc	27 Jan 64	Paper
21	C14	5 uc	4 Jan 64	Paper
22	H3	10 uc	19 Dec 63	Glass
23	C14	10 uc	2 Jan 64	Paper & Glass
24	Na22	30 uc	2 Jan 64	Paper, Vials & Syringes
25	Na22	20 uc	3 Jan 64	Paper, Vials & Syringes
26	C14	15 uc	16 Jan 64	Paper & Glass
27	I 131	10 uc	24 Jan 64	Glass
28	C14	15 uc	3 Jan 64	Paper, Glass & Syringes
29	835	50 uc	7 Jan 63	Paper & Syringes
30	835	50 uc	11 Nov 63	Paper & Syringes
31	835	25 uc	3 Dec 63	Paper, Vials & Syringes

Weight of Drums: 103 lbs

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 File: 901-03 Amros Radioisotope Committee
 Fitzsimons Gen. Hosp 1964

DISPOSITION FORM

APPENDIX VI

(AR 340-13)

OFFICE SYMBOL OR FILE REFERENCE

SUBJECT

MEDEN-RI

Radioisotope User Certification

TO Recorder, Radioisotope
Committee of FGH &
USAMRNLFROM Chief, Radioisotope
Branch, USAMRNLDATE 6 Apr 64
KEK/jg/26111

CMT 1

1. Request that the following three (3) named individuals be certified as users for non-human use of all radioisotopes with atomic numbers 1-83 inclusive in any chemical and/or physical form. The maximum amount of radioactivity which may be handled by any of the individuals will be the maximum amounts authorized for the licensee by the Atomic Energy Commission and Department of the Army.

- a. Howerde E. Sauberlich, Ph. D.
- b. Zigmund Z. Ziporin, Ph. D.
- c. Kenneth E. Kinnamon, D. V. M., M. S.

2. A summary of the training and experience of these individuals is attached.

Incl
as

Kenneth E. Kinnamon
KENNETH E. KINNAMON
Captain, VC
Chief, Radioisotope Branch
Physiology Division
USAMRNL

APPROVED: Radioisotope Committee
Fitzsimons General Hospital

7 April 1964

Marion E. Mc Dowell
MARION E. MC DOWELL
Lt Col MC
Chairman, Radioisotope Committee

C.S. Lyter
C.S. LYTER
Maj General MC
Commanding

DA FORM 2496
1 FEB 62REPLACES DD FORM 96, EXISTING SUPPLIES OF WHICH WILL BE
ISSUED AND USED UNTIL 1 FEB 63 UNLESS SOONER EXHAUSTED. * U.S. GOVERNMENT PRINTING OFFICE: 1962 O-629168

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Record Group 112

Accession #: 68A 3359

Box #: 47/75

File: 901-03 AMEOS Radioisotope Committee

Fitzsimons Gen. Hosp 1964

Name and Title	Isotope	Location & Duration	Use of Isotopic Material	Training (including principles & practices of radiation protection, radioactivity measurement standardization & monitoring techniques & instruments, & mathematics & calculations basic to the use & measurement of radioactivity)	On the Job	Other Pertinent Information
H. E. Sauberlich, Ph. D. Ch, Chemistry Div USAMRNL	Ca ⁴⁵ ₆₀ C ⁹² ₃₂ P ⁵⁵ ₅₅ Fe ⁵⁹ F ¹⁴ ₄ C ³⁵ Zn ³¹ I	U. of Tenn. (5 mos) Auburn U. (6 yrs) U. of Indonesia (18 mos) USAMRNL (5 yrs)	tracer amts in micro- biology, analytical research nutrition studies	U of Tennessee Auburn University U. of Indonesia	USAMRNL	Holder of individual AEC license No. 5-46-8 authorizing the non- human use of Carbon-14 (50 mc); Hydrogen-3 (5 curies); Calcium-45 (5 mc); Phosphorus-32 (5 mc); Strontium-89 (5 mc); Strontium-90 (5 mc); and Sulfur-35 (5 mc).
Z. Z. Ziporin, Ph. D. Biochemistry Br, Chemistry Div, USAMRNL	C ¹⁴ C ³ H ³ I ³¹	USAMRNL (6 yrs)	tracer amts in metabolism studies	Oak Ridge, Tenn. Georgetown Univ.	USAMRNL	

DISPOSITION FORM - Page 1

(AR 340-15)

OFFICE SYMBOL OR FILE REFERENCE

SUBJECT

MEDEN-RI

Radioisotope User Certification

TO Recorder, Radioisotope
Committee of FGH &
USAMRNL

FROM Chief, Radioisotope
Branch, USAMRNL

DATE 6 Apr 64
KEK/jg/26111

CMT 1

Request that the nine (9) individuals named under "A" below be certified as users for non-human use of radioisotopes named under "B" opposite the individual's name. The maximum amount of each radioisotope that each individual may possess is in parentheses following the name of the radioisotope.

A

B

- | | |
|--------------------------------|--|
| 1. Eugene M. Baker, Ph. D. | 1. a. Carbon-14 (one millicurie)
b. Hydrogen-3 (five millicuries) |
| ✓ 2. John R. Handy, M. D. | 2. a. Calcium-45 (five millicuries)
b. Carbon-14 (one millicurie)
c. Hydrogen-3 (five millicuries)
d. Sulfur-35 (five millicuries) |
| 3. John P. Hannon, Ph. D. | 3. a. Rubidium-86 (two millicuries) |
| 4. Richard W. Hanson, Ph. D. | 4. a. Carbon-14 (five millicuries)
b. Hydrogen-3 (five millicuries) |
| 5. Richard S. Harding, B. S. | 5. a. Carbon-14 (five millicuries)
b. Hydrogen-3 (five millicuries)
c. Sulfur-35 (five millicuries)
d. Iron-59 (five millicuries)
e. Zinc-65 (five millicuries) |
| 6. Gilbert A. Leveille, Ph. D. | 6. a. Carbon-14 (five millicuries)
b. Hydrogen-3 (15 millicuries) |
| ← 7. Robert A. Levine, M. D. | 7. a. Carbon-14 (one millicurie) |
| 8. Marvin L. Tanzer, M. D. | 8. a. Carbon-14 (one millicurie)
b. Hydrogen-3 (15 millicuries) |
| 9. James A. Vogel, Ph. D. | 9. a. Chromium-51 (one millicurie)
b. Hydrogen-3 (ten millicuries)
c. Iodine-131 (one millicurie)
d. Iodine-125 (one millicurie)
e. Rubidium-86 (two millicuries)
f. Sodium-22 (one millicurie) |

Kenneth E. Kinnamon
KENNETH E. KINNAMON, Captain, VC
Chief, Radioisotope Branch, Physiology Div

DA FORM 2496
1 FEB 62

REPLACES DD FORM 96, EXISTING SUPPLIES OF WHICH WILL BE
ISSUED AND USED UNTIL 1 FEB 63 UNLESS SOONER EXHAUSTED. * U.S. GOVERNMENT PRINTING OFFICE: 1962 O-625168

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Fitzsimons Gen. Hosp 1964

DISPOSITION FORM - Page 2

(AR 340-15)

OFFICE SYMBOL OR FILE REFERENCE

SUBJECT

Radioisotope Certification for Users
Listed on Page 1.

TO

FROM

DATE

CMT 1

APPROVED: Radioisotope Committee
Fitzsimons General Hospital

7 April 1964

M E Mc Dowell by J. H. ...
MARION E. MC DOWELL
Lt Col MC
Chairman, Radioisotope Committee

C. S. Lyter
C. S. LYTER
Maj General MC
Commanding

DA FORM 2496
1 FEB 62

REPLACES DD FORM 96, EXISTING SUPPLIES OF WHICH WILL BE
ISSUED AND USED UNTIL 1 FEB 63 UNLESS SOONER EXHAUSTED.

* U.S. GOVERNMENT PRINTING OFFICE: 1962 O-629168

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File: 901-03 AMEOS Radioisotope Committee

Fitzsimons Gen. Hosp 1964

DISPOSITION FORM

APPENDIX VIII

(AR 340-15)

OFFICE SYMBOL OR FILE REFERENCE

SUBJECT

MEDEN-RI

Radioisotope User Certification

TO Recorder, Radioisotope
Committee of FGH &
USAMRNLFROM Chief, Radioisotope
Branch, USAMRNLDATE 6 Apr 64
KEK/jg/26111

CMT 1

Request that the five (5) individuals named below be [REDACTED] certified as users of radioisotopes in humans subject to the conditions outlined under "Request for Approval for Human Use of Radioisotopes in Tracer Amounts in Volunteer Experimental Research Subjects" submitted by the U. S. Army Medical Research and Nutrition Laboratory, Denver, Colorado and Fitzsimons General Hospital, Denver, Colorado:

1. John E. Canham, M. D.
2. John R. Handy, M. D.
3. James E. Hansen, M. D.
4. Robert A. Levine, M. D.
5. Marion E. McDowell, M. D.

Kenneth E. Kinnamon
KENNETH E. KINNAMON
Captain, VC
Chief, Radioisotope Branch
Physiology Division
USAMRNL

APPROVED: Radioisotope Committee
Fitzsimons General Hospital

7 April 1964

Marion E. McDowell by J. J. Hauer
MARION E. MC DOWELL
Lt Col MC
Chairman, Radioisotope Committee

C. S. Lyter
C.S. LYTER
Maj General MC
Commanding

DA FORM 2496
1 FEB 62REPLACES DD FORM 96, EXISTING SUPPLIES OF WHICH WILL BE
ISSUED AND USED UNTIL 1 FEB 63 UNLESS SOONER EXHAUSTED. * U.S. GOVERNMENT PRINTING OFFICE: 1962 O-629168

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File: 901-03 AMEOS Radioisotope Committee

Fitzsimons Gen. Hosp 1964

Radioisotopes procured during the quarter 1 January 1964 thru 31 March 1964.

<u>RADIOISOTOPES</u>	<u>TOTAL AMOUNT PROCURED</u>
Acetic-1-C14 (Sodium Salt)	550 microcuries
Toluene-C14 Standard Source 3.83x10 ⁵ dpm/ml 10ml/vial 10 vials	17.2520 microcuries
D-Glucose-1-C14	50 microcuries
D-Glucose-6-C14	50 microcuries
Ethyl acetoacetate-3-C14	50 microcuries
Cholesterol-4-C14 (Steroids)	200 microcuries
Sodium D1-3-hydroxybutyrate 3-C14	50 microcuries
Radio-Ferric (Fe-59) Chloride	2 millicuries
Radio Selenomethionine Se-75	2 millicuries
Chromium (Cr-51)	4 millicuries
Calcium (Ca-45) Chloride	8 millicuries
Strontium Sr-89	9.5 millicuries
Rubidium (Rb-86)	2 millicuries
I-125 Iodine	0.5 millicuries
Sr 85 Strontium	0.5 millicuries
I-131 RISA	3.5 millicuries
I-131 Raovin	2.0 millicuries
Co 57 Cobalt	0.235 millicuries
Cr51 Chromium	3 millicuries
Fe59 Ferrous Citrate	0.1 millicuries
Au 198 Gold	60 millicuries
I-131 Hippuran	8 millicuries
I-131 Iodine	176 millicuries
Hg 203 Neohydrin	44 millicuries
I-131 Triolein	1 millicurie
I-131 Rose Bengal	2 millicuries
P-32 Chromic Phosphate	10 millicuries
P-32 Sodium Phosphate	95 millicuries
T-3 Diagnostic Kits	0.039 millicuries

Herbert F. Johnson
 HERBERT F. JOHNSON
 Major MC
 Radiological Safety Officer

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Fitzsimons Gen. Hosp 1964

Radioisotopes on hand as of 31 March 1964:

<u>RADIOISOTOPE</u>		<u>AMOUNT ON HAND</u>
1. Carbon-14		76,044.064 microcuries
2. Carbon-14, Standard Source		176.7739 microcuries
3. Calcium-45	Approx	8 millicuries
4. Chromium-51	Approx	2 millicuries
5. Cobalt-60	Less than	1 microcurie
6. Iron-59	Approx	1.8 millicuries
7. Rubidium-68	Approx	2.0 millicuries
8. Strontium-90	Less than	1 microcurie
9. Strontium-89	Approx	5 millicuries
10. Selenium-75		None
11. Sodium-22	Approx	0.5 millicuries
12. Sulfur-35	Approx	4.5 microcuries
13. Iodine-131		None
14. Sulfur-35, Standard Source	Less than	1 microcurie
15. Thallium-204	Less than	1 microcurie
16. Hydrogen-3	Approx	4 curies
17. Hydrogen-3 Standard	Less than	1 millicurie
18. Zinc-65	Approx	6.5 millicuries
19. I-125 Iodide		0.360 millicuries
20. Sr 85 Stotope		0.234 millicuries
21. I-131 RISA		0.549 millicuries
22. I-131 Raovin		0.238 millicuries
23. Co-57 B12		0.130 millicuries
24. Cr-51 Chromate		0.900 millicuries
25. Fe59 Ferrous Citrate		0.060 millicuries
26. Au 198 Colloidal		20 millicuries
27. I-131 Iodide		6.31 millicuries
28. Hg 203 Neohydrin		2 millicuries
29. I-131 Rose Bengal		0.215 millicuries
30. P-32 Sodium Phosphate		0.224 millicuries

Herbert F. Johnson
HERBERT F. JOHNSON
Major MC
Radiological Safety Officer

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File: 901-03 AMEOS Radioisotope Committee

FH25 Simons Gen. Hosp 1964

Sewage disposal of radioisotopes for quarter 1 January 1964 thru 31 March 1964:

<u>DATE</u>	<u>ISOTOPE</u>	<u>MATERIAL</u>	<u>ACTIVITY IN MICROCURIES</u>
1 Jan 64	S-35	Dioxane & Toluene	50
2 Jan 64	S-35	Dioxane & Toluene	50
6 Jan 64	C-14	Dioxane & Toluene	50
7 Jan 64	I-131	Iodide	96
8 Jan 64	I-131	Raovin	34
8 Jan 64	C-14	Dioxane & Toluene	30
9 Jan 64	C-14	Aqueous Solution	1
10 Jan 64	I-131	Raovin	34
14 Jan 64	I-131	Iodides	100
15 Jan 64	I-131	Raolein	1
15 Jan 64	Ca-45	Aqueous Solution	8
16 Jan 64	C-14 & H-3	Dioxane & Toluene	10
20 Jan 64	C-14 & H-3	Dioxane & Toluene	7
21 Jan 64	I-131	Iodide	96
22 Jan 64	C-14 & H-3	Dioxane & Toluene	5
23 Jan 64	C-14 & H-3	Dioxane & Toluene	7
27 Jan 64	C-14 & H-3	Dioxane & Toluene	8
28 Jan 64	I-131	Iodide	100
29 Jan 64	C-14	Aqueous Solution	3
29 Jan 64	C-14	Aqueous Solution	1
30 Jan 64	S-35, C-14, H-3	Dioxane & Toluene	50
1 Feb 64	I-131	RISA	25
3 Feb 64	I-131	RISA	25
3 Feb 64	S-35, C-14, H-3	Dioxane & Toluene	20
4 Feb 64	I-131	Iodide	100
5 Feb 64	I-131	Raovin	50
5 Feb 64	S-35, C-14, H-3	Dioxane & Toluene	50
5 Feb 64	C-14	Aqueous Solution	1
5 Feb 64	C-14	Aqueous Solution	2
6 Feb 64	C-14	Aqueous Solution	50
10 Feb 64	Zn-65	Urine	5
10 Feb 64	C-14	Aqueous Solution	10
11 Feb 64	I-131	Iodide	98
12 Feb 64	Zn-65	Urine	10
13 Feb 64	Zn-65	Urine	10
17 Feb 64	Zn-65	Urine	10
18 Feb 64	Cr-51	Chromium	150
18 Feb 64	I-131	Iodine	100
19 Feb 64	Zn-65	Urine	10
20 Feb 64	Zn-65	Urine	10
20 Feb 64	Cr-51	Chromium	300
24 Feb 64	Zn-65	Urine	10
25 Feb 64	I-131	Iodide	100
26 Feb 64	Zn-65	Urine	10
27 Feb 64	Zn-65	Urine	10
2 Mar 64	Zn-65	Urine	100

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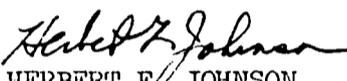
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Fitzsimons Gen. Hosp 1964

<u>DATE</u>	<u>ISOTOPE</u>	<u>MATERIAL</u>	<u>ACTIVITY IN MICROCURIES</u>
2 Mar 64	I-131	RISA	25
4 Mar 64	I-131	Raolein	25
4 Mar 64	Zn-65	Urine	100
5 Mar 64	C-14	Aqueous Solution	400
5 Mar 64	Co-57	Cobalt	0.3
6 Mar 64	I-131	Iodide	100
9 Mar 64	C-14	Aqueous Solution	200
9 Mar 64	C-14	Aqueous Solution	10
9 Mar 64	C-14	Aqueous Solution	5
11 Mar 64	Ca-45	Aqueous Solution	100
12 Mar 64	C-14	Aqueous Solution	10
13 Mar 64	I-131	Iodide	100
16 Mar 64	C-14	Aqueous Solution	200
16 Mar 64	C-14	Aqueous Solution	200
18 Mar 64	Ca-45	Aqueous Solution	100
19 Mar 64	C-14, Ca-45, H-3	Dioxane & Toluene	50
20 Mar 64	I-131	Iodide	100
23 Mar 64	C-14	Dioxane	40
26 Mar 64	I-131	RISA	25
27 Mar 64	I-131	Iodide	100
28 Mar 64	I-131	RISA	30
30 Mar 64	H-3 & S-35	Toluene	80


 HERBERT F. JOHNSON
 Major MC
 Radiological Safety Officer

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