Form AEC-417
(4-58)

UNITED STATES ATOMIC ENERGY COMMISSION

COMPLIANCE INSPECTION REPORT

I-62
12

1. Name and address of licensee	2. Date of inspection
Veterans Administration Center GM and S Hospital X-ray Department Los Angeles 25, California	May 12, 1960
	3. Type of inspection Initial
	4. 10 CFR Part(s) applicable -20 and -30

5. License number(s), issue and expiration dates, scope and conditions (including amendments)

4-191-8	April 5, 1957	April 30, 1959
Amendment No. 1	April 16, 1959	April 30, 1964

6. Inspection findings (and items of noncompliance)

A 50 mc Tracerlab sealed source medical applicator is used by Dr. Gore at the Wadsworth General Hospital for the treatment of corneal vascularization and pterygia. The source is said to be used on the average of once every two months. The source is stored inside a locked metal locker in room 1-203 of Wing E on the second floor of the hospital. Records of each treatment are recorded in a log book which lists date, name of patient, condition, and total dose administered. Records were available from 1956. Dr. Gore stated patients normally receive 1800 rep with treatments averaging 30-45 seconds. An examination of the source indicated it was last calibrated on February 12, 1959 and was found to emit 35.4 rep/second. Dr. Gore stated the source is leak tested every six months by Dr. Moses Greenwell, physicist of UCLA. No records of leak test results were available in the office of Dr. Gore. The words "Danger - Radioactivity" were imprinted with 1/4" letters on the outside of the wooden Strontium-90 source container. The only items of noncompliance observed or noted during the course of the inspection are as set out below.

License 4-191-8, Condition 7(b), Leak Testing requirements - in that no records of leak tests were maintained by the licensee, as specified.

10-CFR 20.203 Caution signs, labels, and signals (f)(1) - In that the outside of the 50 mc Strontium-90 source container was labeled with the words "Danger - Radioactivity" rather than the prescribed words "Caution - (or Danger) - Radioactive Material".

7. Date of last previous inspection	8. Is "Company Confidential" information contained in this report? Yes ☐ No ☒ (Specify page(s) and paragraph(s))
None	

DISTRIBUTION:

1 - Division of Inspection, Washington
2 - Division of Licensing & Regulation, Washington
3 - Inspection Division, SAN
4 - Inspection Division, HA

C. R. Isberger (Inspector)

Approved by: R. W. Smith, Director
Inspection Division
San Francisco Operations Office (Operations office)

JUL 6 1960

June 2, 1960 (Date report prepared)

If additional space is required for any numbered item above, the continuation may be extended to the reverse of this form using foot to head format, leaving sufficient margin at top for binding, identifying each item by number and noting "Continued" on the face of form under appropriate item.

16—73316-2 U.S. GOVERNMENT PRINTING OFFICE

RECOMMENDATIONS SHOULD BE SET FORTH IN A SEPARATE COVERING MEMORANDUM

Form AEC-417
(4-48)

UNITED STATES ATOMIC ENERGY COMMISSION

COMPLIANCE INSPECTION REPORT

1. Name and address of licensee

Veterans Administration
Radioisotope Service
Wilshire and Sawtelle Boulevards
Los Angeles 25, California

2. Date of inspection

May 12, 1960

3. Type of inspection Initial

4. 10 CFR Part(s) applicable

Parts 20 and 30

5. License number(s), issue and expiration dates, scope and conditions (including amendments)

4-101-4
Amend. #14 Nov. 30, 1959 July 31, 1960
Amend. #15 Dec. 4, 1959 July 31, 1960

6. Inspection findings (and items of noncompliance)

The Radioisotope Service at the Veterans Administration Hospital utilizes Iodine-131, Phosphorus-32, Cobalt-60, Hydrogen-3, Carbon-14, Iron-59, and Chromium-51 in their research, diagnostic, and therapeutic programs. The Hospital has a radioisotope committee consisting of six members associated with the staff. Routine monitoring surveys, as well as special surveys, are made with results being recorded. Film badges are supplied to 40 persons on a monthly basis with personnel exposures averaging less than 25 mr/month. A maximum monthly exposure of 270 mr plus 2 rads (soft beta) was recorded for one person. Records of receipt and use were well kept. The only items of noncompliance observed or noted during the course of the inspection are as set out below:

10-CFR-20.201(a) - General Requirements - Waste Disposal
20.204(a)(b)(c) - Disposal by burial in soil

In that radioactive waste was disposed of by burial without knowledge as to the amount, depth, or spacing of burials. (See par. 16, Details).

10-CFR-20.401(c) - Records of disposal

In that no records of radioactive waste disposal were maintained. (See par. 16, Details.)

(Continued)

7. Date of last previous inspection

None

8. Is "Company Confidential" information contained in this report? Yes ☐ No ☒
(Specify page(s) and paragraph(s))

DISTRIBUTION:

1 - Division of Compliance, Washington
2 - Division of Licensing and Regulation, Wash.
3 - Inspection Division, SAN
4 - Inspection Division, HOO

G. E. Warberger
(Inspector)

Approved by: E. W. Smith, Director
Inspection Division
San Francisco Operations Office
(Operations office)

June 14, 1960
(Date report prepared)

If additional space is required for any numbered item above, the continuation may be extended to the reverse of this form using foot to head format, leaving sufficient margin at top for binding, identifying each item by number and noting "Continued" on the face of form under appropriate item.

16-73814-2 U.S. GOVERNMENT PRINTING OFFICE

RECOMMENDATIONS SHOULD BE SET FORTH IN A SEPARATE COVERING MEMORANDUM

[illegible]

[illegible]

(c)(1) - In that rooms T-[illegible] and [illegible] in which licensed material was stored in amounts exceeding 10 times that specified in Appendix C were not posted as specified and that the sign in room [illegible] did not contain the words "Caution (or Danger) Radioactive Materials" as required.

(d)(2) - In that the refrigerator in room [illegible] and radioactive waste containers were not labeled as specified. (See par. 17, Details).

DETAILS

Inspection Party

9. An announced initial inspection of the licensee was made on May 12, 1960, by G. R. Hasberger of the Hanford Operations Office. The California State Department of Public Health was not represented.

Organization

10. The Veterans Administration Hospital is said to have a radioisotope committee composed of the following members:

William H. Blahd, M.D. - Internist
Chief, Radioisotope Service - Chairman

John H. Buchanan, M.D., Internist
Director, Professional Services - Ex Officio

James S. Glotfelty, M.D.
Center Medical Director - Ex Officio

William A. Gore, M.D. - Radiologist
Chief, X-ray Therapy Section

Lucien D. Guse, M.D. - Internist
Asst. Director, Professional Services for Research

Leo Prod, M.D. - Internist
Chief, Medical Service

James S. Clarke, M.D. - Surgeon
Chief, Surgical Service

Ben G. Fishbin, M.D. - Pathologist
Acting Chief, Pathology Service

Dr. Blahd stated the committee has several functions including:

1. Approval for all research work with radioisotopes. This function has been delegated, for convenience, to the Hospital Education and Research Committee, since most of the members of this group are members of the Hospital Radioisotope Committee.

2. Approval for all human applications of radioisotopes.

3. Approval of a radiation safety program and the appointment of a radiation safety officer.

It was stated that meetings are held when needed for the discussion and determinations of matters of policy. The last meeting of the group was held on February 10, 1959. Minutes of the meeting were taken and copies sent to each of the committee members. The committee appointed Dr. John Erickson, biophysicist, as radiation safety officer at the meeting held on February 10, 1959. Dr. Erickson has been associated with the VA Hospital for 11 years.

According to Dr. Erickson, he spends approximately 50% of his time concerning radiation protection functions, and 50% with electron microscope research activities. He also stated he receives copies of all protocols the Hospital Education and Research Committee approves.

Training

11. The Radioisotope Service employs 30 people and there are three general working areas as noted on Exhibit #1. According to Dr. Blahd, there are 14 major research projects going on within the Radioisotope Service. These range from gall bladder localization with Iodine-131 (Rose Bengal) to the study of the metabolism of Carbon-14 labeled compounds in muscular dystrophic mice. It was stated there were several additional joint projects in progress. The information concerning the clinical activities of the Radioisotope Service, as listed below, was furnished by Dr. Blahd:

July 1, 1958 thru June 30, 1959

I. DIAGNOSIS

1.1 Tabulation of diagnostic procedures used during report period

Radioisotope Used	Form Administered	Dosage Range	Purpose	No. Patients	No. Tests
I-131	Sodium Iodide	2-5 uc	Thyroid uptake	547	579
"	"	100 uc-1 mc	Thyroid scan	113	120
"	"	3-5 uc	Thyroid half-life	27	38
"	"	3-5 uc	Thyroid release curve	16	16
"	"	5-10 uc	Body scan for metastatic lesions	19	31
"	"	5-10 uc	48 hour urinary excretion (thyroid cancer metastasis)	18	22
"	Iodinated human serum albumin	10 uc	Blood volume	206	227
"	"	10-20 uc	Cardiac output	17	17
"	"	150-200 uc	Liver survey	3	3
"	Rose bengal	25-100 uc	Liver function	161	212
"	"	25-100 uc	Liver, gall-bladder scan	12	12
I-131	Triiodothyronine in vivo suppression test		Thyroid function	41	49
"	Triolein	25-50 uc	Intestinal absorption test	53	61
"	Oleic acid	25-50 uc	" "	21	21
Co-60	Vitamin B-12	.05 uc	Schilling test	47	59
Cr-51	Sodium chromate	100 uc	Red cell survival and sequestration	43	43
Fe-59	Ferrous citrate	10 uc	Iron turnover and in vivo localization	9	29
I-131	Urokon	25 uc	Renogram	14	19
"	Hippuran	25 uc	"	17	22
"	"	200 uc	Cerebral circulation	35	50

2. THERAPY

2.1 Tabulation of treatment procedures used during report period

Radioisotope Used	Form Administered	Dosage Range	Purpose	No. Patients	No. Doses
I-131	Sodium iodide	2-20 mc	Hyperthyroidism	21	28
"	"	75-150 mc	Carcinoma of thyroid	5	5
"	"	20-60 mc	Euthyroid cardiac disease	1	1
P-32	Sod. Phosp.	2-5 mc	Polycythemia vera	9	17
"	"	2-5 mc	Chronic lymphatic leukemia	1	4
"	Sod. Phosp. (oral or I.V.)	1.5-3 mc	Bone metastases	2	9
"	"	1.5-2 mc	Reticulum cell sarcoma	1	4
"	Chrom. Phosp.	8-12 mc	Pleural effusion	3	3
"	"	0.5-2 mc	Carcinoma of tongue	3	3

Administrative Instructions

12. A radiation safety manual was said to be issued to each person using radioactive materials. The Manual was examined and found to contain such items as responsibilities, general rules for safe handling of radioisotopes, emergency procedures, surveys, and waste disposal. It was stated that each individual user of radioisotopes was required to sign a sheet verifying the fact they received and read the Manual. These signed sheets were on file in the office of the Radiation Safety Officer. A copy of the Radiation Safety Manual is included as Exhibit #2. A copy of the annual report of VA Medical and Radioisotope Research activities for the period July 1, 1958, through June 30, 1959, was also provided the inspector. The report contains an analysis of the research activities, budget, and list of research investigators. This report will be retained by the SAI Inspection Division office for backup purposes.

Surveys

13. A log book is maintained by Dr. Erickson which notes any unusual incidents involving the use of byproduct materials. There were three such entries made in the book and consisted of: 1-29-59 - survey of a body which was to be taken to the mortuary; 1-27-59 - survey and decontamination of a 1 uc P-32 spill; and 2-24-59 - surveyed sink in radioisotope laboratory prior to maintenance work. A second log book is maintained by Dr. Erickson which lists routine area monitoring surveys which are made by Dr. Erickson or Henriette Thomas, the radioisotope technician. Surveys are said to be made on a monthly basis with all Laboratory work surfaces, sinks, and equipment being surveyed. Information on the individual pages in the survey record book included: location, names of personnel, and radioisotopes used in laboratory. No contamination was noted in the laboratories to date. Monthly surveys were said to be made in following locations:

Building	Room	Radioisotopes used
114	209,210,210A,211,211A (Research Labs)	C-14, I-131, H-3
114	227 (Clinical lab)	I-131
114	216, 217 (gastroenterology)	Cr-51, C-14, I-131
114	Ward B (hematology)	Fe-59, Cr-51
114	233 (endocrinology)	I-131, C-14
T-42B	Quonset Hut (hematology res.)	P-32, H-3, Fe-59, Cr-51
T-42A	Quonset Hut (metabolism)	P-32
Wadsworth	Room 5 (clinical lab)	I-131, Cr-51, Co-60, Fe-59
Wadsworth	A-3 (hematology res.)	I-131, Cr-51, Fe-59, Co-60

The laboratory surveys were said to be made with a Universal Atomics Model 400 (end window) survey instrument with ranges from 0-.05 mr/hr, 0-.5 mr/hr, and 0-5 mr/hr. The instrument is calibrated with an attached small radium source. The following instruments were also available for use:

Number	Type	Range
3	Cp (Tracerlab)	0-25 mr/hr, X10, X100
10	Civil Defense CD-700	0-05 mr/hr, X10, X100
10	Civil Defense CD-710	0-.5 R/hr, X10, X100
5	Civil Defense CD-720	0-5 R/hr, X10, X100

A total of five Ludlums (Nuclear-Chicago) stationary monitors were noted in the laboratories. These were said to be used for personnel monitoring, monitoring glassware, etc. The laboratories were well equipped with remote handling tongs, shielding materials, and shielded radioisotope storage containers. The laboratory work surfaces were covered with white absorbant paper. Protective clothing consisting of rubber gloves and laboratory coats was also said to be available for use when working with byproduct material. Disposable syringes are said to be used for the majority of the therapeutic injections of radioisotopes.

Personnel Monitoring

14. Film badges are supplied on a monthly basis to forty personnel by the Nucleonic Corporation of America. The film badges are distributed and picked up by Ponchita Thoms of the Radioisotopes Service. She maintains a log book which lists badge number, date issued, date returned, name, reading report, and comments. Film badge reports are returned to the radiation safety officer who, after reviewing the results, initials the report and gives it to the radioisotope technician for transcribing the results into the log book and then filing. A maximum monthly exposure of 270 mr + 2 rads (soft beta) was recorded for one employee for the month of August 1959. Dr. Bluhd stated corrective action was initiated after notification by the vendor, and shielding was added which eliminated the beta exposure to the employee. A review of the film badge results revealed average monthly exposures less than 25 mr for the radioisotope users.

Records of Receipt and Use

15. A standard order of 100 mc of Iodine-131 (iodide) is received from Oak Ridge every week. Ponchita Thomas standardizes each individual shipment. Standard orders are also received for the following isotopes over 2½ weeks:

Supplier	Byproduct Material	Chemical form	Amount
Abbott	I-131	Rina	5 mc
Abbott	I-131	Rose Bengal	5 mc
Abbott	I-131	Triolein	2 mc
Abbott	I-131	Oleic Acid	1 mc
Squibb	I-131	Hippuran	5 mc
Squibb	P-32	Colloidal chromic phosphate	50 mc

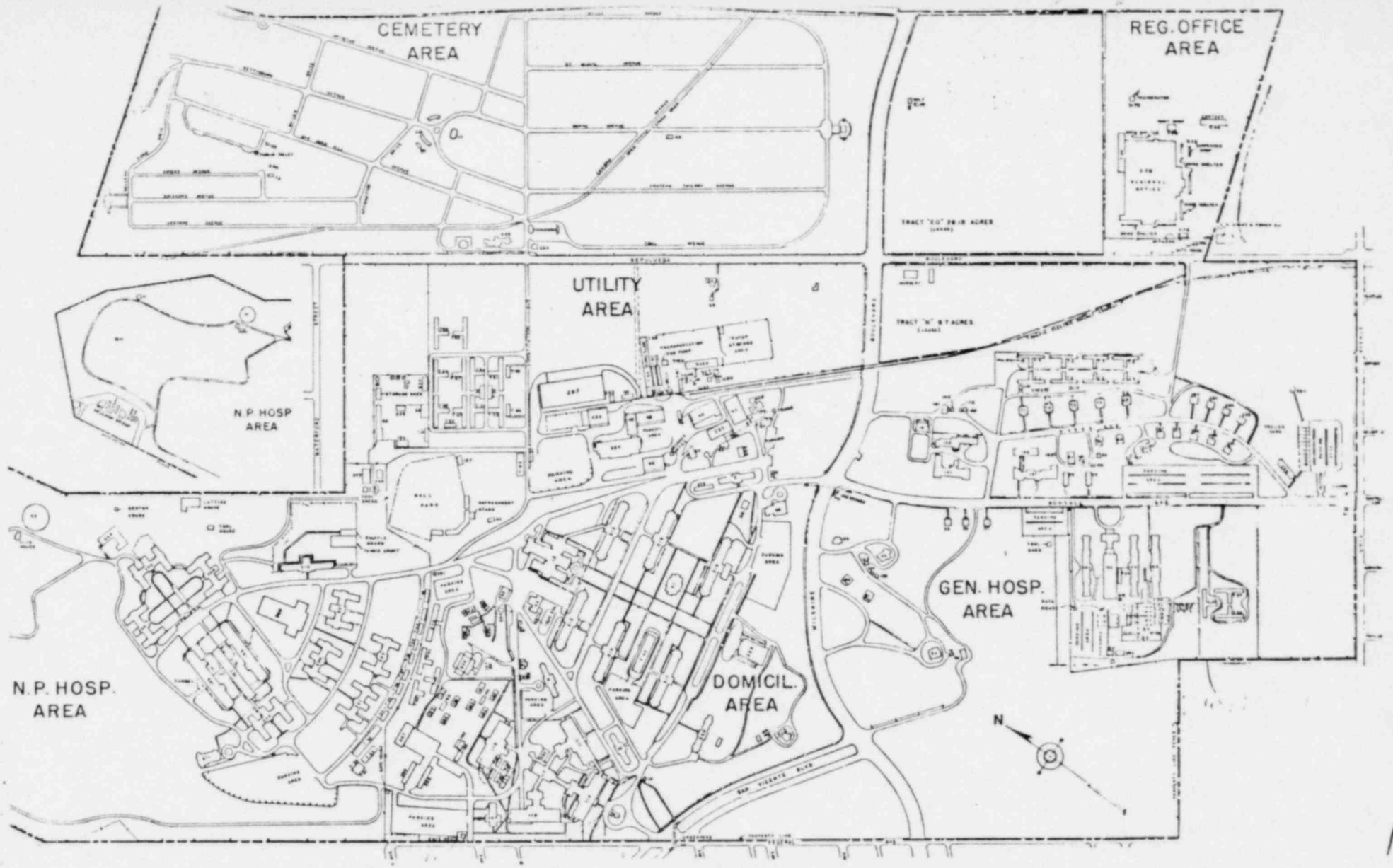
All byproduct material is distributed from room 226A in Building 114 by Ponchita Thomas. Radioisotope requests are submitted on a prescription form which contains the following: Name of patient, Date, radioisotope, dosage, method and date of administration, and doctor's signature. A dispensing book is maintained for diagnostic and therapeutic uses in which the name of the patient, date of treatment, doctor, dosage, batch number, and standardization are noted.

Waste Disposal

16. Short-lived liquid radioisotopes, i.e., P-32 and I-131, which are not used for therapeutic, diagnostic, or research work are said to be disposed in the sanitary sewage system. Dr. Erickson stated: "The Hospital releases a million gallons of sewage into the system each day". Contaminated syringes, glassware, animal carcasses, and refuse are held in 5-gallon covered, galvanized cans within the using laboratories. When necessary, these cans are said to be picked up by the radioisotope technician or Dr. Erickson and given to the truck driver (Lawrence Johnson) who puts the containers in a pickup truck and transports them to the Brentwood area for burial. According to Dr. Erickson, Mr. Johnson dumps the contents into the area to be covered that day and then returns the empty galvanized can. The Brentwood area is said to be owned by the VA Hospital and is used only for the disposal of Hospital waste. Dr. Erickson stated the radioactive waste is covered with from 3' - 10' of cover, and that a maximum of two cans a month are disposed of by burial. No record was maintained noting number of burials, depth, spacing, or name and quantity of byproduct materials. All Carbon-14 waste was said to be buried.

Posting

17. The radioisotope storage area in room 226A was posted with a yellow and magenta commercial sign with the conventional radiation symbol and the words "Radiation Hazard" rather than "Caution (or Danger) - Radioactive Materials". The refrigerator in room 209 containing 4.5 mc I-131 (NIH) was not posted. No radiation caution signs were observed in rooms T-423, 227, or on radioactive waste disposal containers in which licensed material exceeding ten times that specified in Appendix C were noted.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Date _____

TO:

FROM: Chief, Radioisotope Service

SUBJECT: Memo to all users of radioactive materials

The attached Radiation Safety Program Manual was adopted by the Hospital Radioiostope Committee on February 10, 1959. Dr. John O. Erickson was appointed Radiation Safety Officer at this Veterans Administration Center.

The Committee has directed that, as of the date of distribution of this Manual, all persons at this Center using radioactive materials must adhere to the provisions therein. Accordingly, you are requested to read this Manual and acquaint yourself with its provisions. Your signature in the space below will indicate that you have received and read the Manual.

Return this signed sheet, with the additional information requested below, to the Radiation Safety Officer, Radioisotope Service, Bldg. 114.

_____
W. H. Blahd, M.D.
Chief, Radioisotope Service

Additional Information

_____
Signature