

**1. Keywords**

**COBALT TELETHERAPY SOURCE  
DA AUTHORIZATION RADIOISOTOPE  
DOSIMETRY RECORD  
EQUIPMENT  
MEDICAL RADIOACTIVE SEALED SOURCE  
MEDICAL USE, UNSEALED RADIOACTIVE SOURCE  
NRC LICENSED RADIOISOTOPE  
PACKING  
RADIOACTIVE MATERIAL STORAGE  
RADIOISOTOPE INVENTORY  
RADIOISOTOPE LABORATORY  
THORIUM  
UNSEALED RADIOACTIVE SOURCE  
URANIUM**

**2. Start Date: FY 73 Quarter 4**

**End Date: FY 74 Quarter 1**

**3. HQ Division: 43 - HEALTH PHYSICS DIVISION**

**4. Phase:**

**5. Program NO: 28**

**6. Survey Type: RH - RADN PROTECTION SURVEY, HUMAN USE**

**7. INSTALLATION OR SOURCE OF INFORMATION (CITY & STATE OR  
COUNTY ARE ESSENTIAL)**

**HS - USA HEALTH SERVICES COMMAND**

**8. Authors:**

**9. ARLOC/Activity: 11933 001 - WALTER REED AMC**

**Location: WASHINGTON**

**State: DC**

**10. Project Control Number: 43-052-73/74**

**11. Title: HUMAN USE SURVEY**

**12. DSA: 61**

Folder  
14,000

2 AUG 1973

Commander  
Walter Reed Army Medical Center  
6292 16th Street NW  
WASH DC 20012

FOR THE COMMANDER:

$$\frac{6}{5} \div \frac{1}{6}$$

CF  
Cdr, USA Health Svc Command (HSC-PA-H)  
HODA (DASG-HCH)

✓

Writer }  
C. HPO EB 31 MAY 73  
Dir \_\_\_\_\_  
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DEPARTMENT OF THE ARMY  
WALTER REED ARMY MEDICAL CENTER  
WASHINGTON, D.C. 20012

REPLY TO  
ATTENTION OF:

26 MAR 1973

MEDEC-YHP

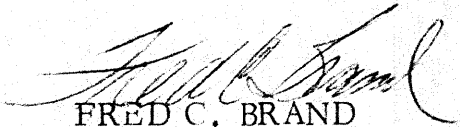
SUBJECT: Radiation Protection Survey, WRAMC

Commander  
US Army Environmental Hygiene Agency  
Aberdeen Proving Ground, MD 21010

1. Reference your letter of 6 March 1973, subject as above. The following documents are provided for your planning.
  - a. Inventory of sealed sources (incl 1)
  - b. Inventory of ionizing radiation-producing devices (incl 2)
2. The Center Radiation Protection Program document is under complete revision and should be available upon your arrival. For planning purposes, request the present document on file at your office be used.
3. Questions and comments pertaining to this transmittal should be directed to the Health Physics Officer, Walter Reed Army Medical Center, IDS Code 198-5161 or AUTOVON 346-5161.

FOR THE COMMANDER

2 Incl  
as stated

  
FRED C. BRAND  
LTC, MSC  
Adjutant

91-NG file  
105-DEES

43-052-73

ABERDEEN PROVING GROUND, MD 21010

USAEHA-RH

1 MAR 1973

SUBJECT: Radiation Protection Survey (RS), Walter Reed Army Medical Center, Washington, DC 20012

Commander  
Walter Reed Army Medical Center  
6292 16th Street NW  
Washington, DC 20012

1. Under the provisions of paragraph 11-5, AR 40-5, 13 March 1969; paragraph 4b, AR 700-52, 22 May 1968; and with prior concurrence of The Surgeon General, a radiation protection survey has been scheduled for the period 2-11 April 1973. Coordination for this survey was accomplished between LTC Vandy Miller, Health Physics Officer, WRAMC, and LTC Edward Blackburn, this Agency.

2. The survey will include an evaluation of the overall radiation protection program including all tenants at Walter Reed Army Medical Center, and all sources of ionizing radiation which may be located there.

3. Survey Officers

Security Clearance

LTC Edward W. Blackburn, MSC  
162-28-0841

Secret

MAJ Gordon M. Lodde, MSC  
728-05-8505

Secret

4. To facilitate planning of the survey, request an inventory of all ionizing radiation sources, a copy of the radiation protection program, and the name of a contact officer be forwarded. The survey officers may be contacted on AUTOVON 584-3526/3502.

CF:  
DASG-HE  
HQDA (SGRD-ZA)  
Cdr, WRAIR  
Dir, AFIP

Writer	} EB 2 MAR 73
C. HPD	
RES 4 5 MAR 73	
15	

# RECORD OF PROCESSING

TITLE OF REPORT

REPORT NUMBER

WRITER

RPS, Walter Reed Army Medical Center

43-052-73

MAJ Lodde

## INITIAL DRAFT

DATE	COORDINATION WITH **	INITIALS	CONCUR	NON-CONCUR *

## FINAL DRAFT

DATE	COORDINATION WITH	INITIALS	CONCUR	NON-CONCUR *

## TYPIST RECORD

	INITIALS	DATE	
		IN	OUT
FIRST DRAFT	<i>[Signature]</i>	14 May	
FINAL DRAFT	<i>[Signature]</i>	25 May	

DATE FINAL REPORT TYPED

DATE DISPATCHED FROM DIVISION

DATE DISPATCHED FROM DIRECTORATE

DATE DISPATCHED TO PRINTING PLANT

DATE DISPATCHED FROM AEAH

2 AUG 1973

## FINAL REPORT

	INITIALS	DATE	
		IN	OUT
WRITER			
DIVISION CHIEF	<i>E.B.</i>	31 May 1973	
DIRECTOR	<i>[Signature]</i>	3 Jun	
COMMANDING OFFICER	<i>[Signature]</i>	5 Jun	

REMARKS: Use Reverse Side

\* Explain on reverse side

\*\* Resolve all professional, technical, administrative and policy matters while report is in initial draft stage to minimize repetitive writing and typing.

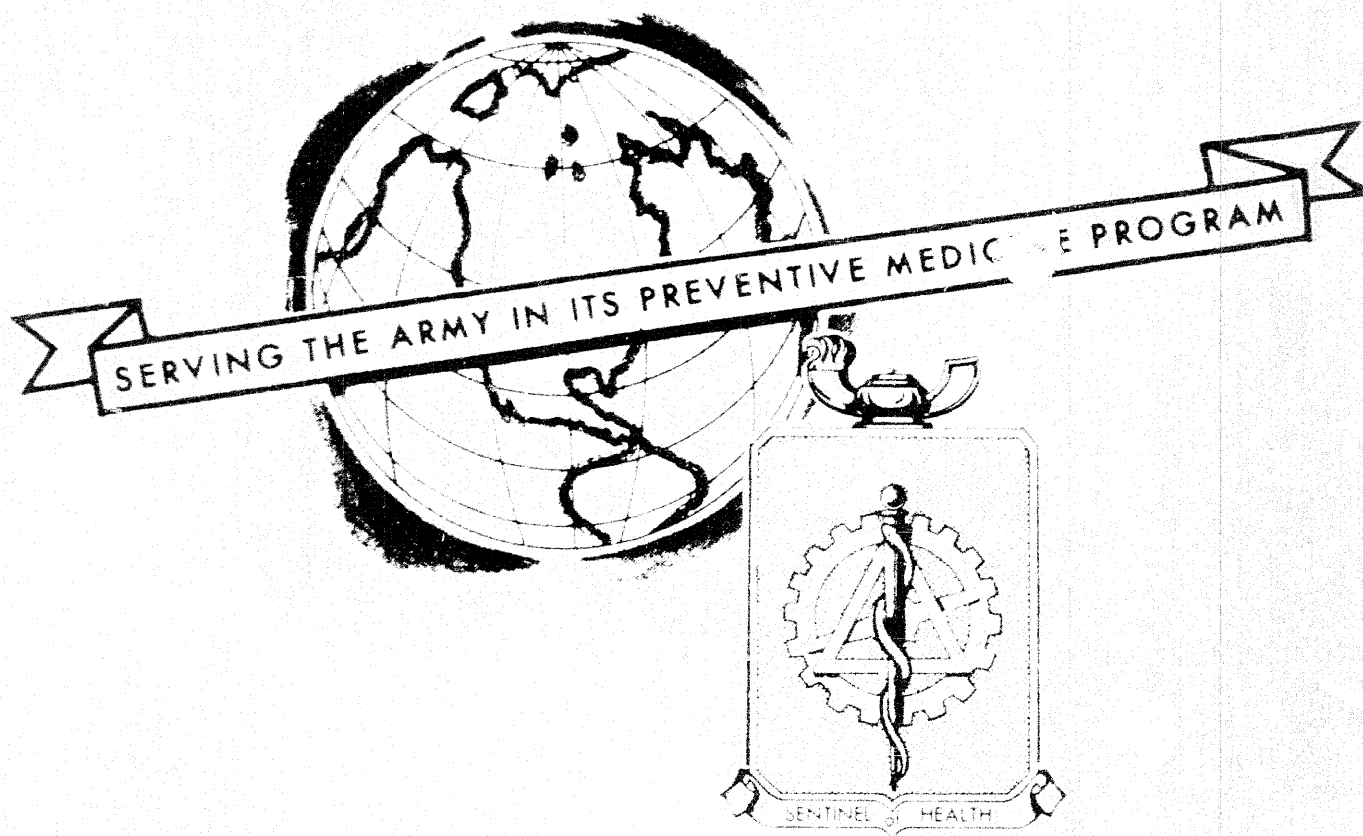
This report replaces an existing report in Central Files? Yes ☒ No ☐

If yes, please list report numbers 43-054-17

INACTIVE

75

RADIATION PROTECTION SURVEY NO. 43-052-73 '74  
IONIZING RADIATION SOURCES  
WALTER REED ARMY MEDICAL CENTER  
WASHINGTON, DDC 20012  
2 - 11 APRIL 1973



43-052-73/76  
61445-15

US ARMY  
ENVIRONMENTAL HYGIENE AGENCY  
ABERDEEN PROVING GROUND, MD 21010

61445-15



DEPARTMENT OF THE ARMY  
U. S. ARMY ENVIRONMENTAL HYGIENE AGENCY  
ABERDEEN PROVING GROUND, MARYLAND 21010

USAEHA-RH

16 JUL 1973

RADIATION PROTECTION SURVEY NO. 43-052-73  
IONIZING RADIATION SOURCES  
WALTER REED ARMY MEDICAL CENTER  
WASHINGTON, DC 20012  
2 - 11 APRIL 1973

ABSTRACT

During the survey, six Atomic Energy Commission licenses, two Department of the Army Authorizations, standard military sources, the personnel dosimetry program, the use of radioactive materials in humans and the overall radiation protection program were evaluated. A review of the findings indicated that the most significant problem areas were the need to:

- a. Insure that a copy of the Authorization to use radioactive materials in humans is posted in the individual's 201 file.
- b. Develop better methods for packing sensitive equipment belonging to the REIT.
- c. Amend AEC License SUB 603 to permit the possession and use of uranium and thorium compounds at US Army Medical Research Institute for Infectious Diseases, Ft. Detrick.
- d. Affix DA Label 80, overprinted with "I&C" on all dosimeters used for health and safety purposes.





DEPARTMENT OF THE ARMY  
U. S. ARMY ENVIRONMENTAL HYGIENE AGENCY  
ABERDEEN PROVING GROUND, MARYLAND 21010

USAEHA-RH

RADIATION PROTECTION SURVEY NO. 43-052-73  
IONIZING RADIATION SOURCES  
WALTER REED ARMY MEDICAL CENTER  
WASHINGTON, DC 20012  
2 - 11 APRIL 1973

1. REFERENCES.

- a. AR 40-5, Preventive Medicine, 13 March 1969.
- b. AR 40-14, Control and Recording Procedures Occupational Exposure to Ionizing Radiation, 29 September 1966.
- c. AR 40-37, Radioisotope License Program (Human Use), 12 August 1963.
- d. AR 700-52, Licensing and Control of Sources of Ionizing Radiation, 22 May 1963.
- e. Letter, USAEHA-RH, this Agency, 6 March 1973, subject: Radiation Protection Survey (RS), Walter Reed Army Medical Center, Washington, DC 20012.

2. Purpose. The survey was made to determine the presence and extent of any health hazards resulting from the use of radioactive materials and other sources of ionizing radiation at WRAMC. Further, it was made to evaluate the adequacy of the overall radiation protection program established for conformance with current directives and standards for radiation protection with special emphasis on the radioisotopes in human use activities.

3. GENERAL.

- a. An entrance interview and an exit briefing were held with LTC Vandy L. Miller, Health Physics Officer, WRAMC. The exit briefing included a discussion of the findings and recommendations made during the survey.
- b. The most recent evaluation of the overall radiation protection program at WRAMC, by this Agency, was conducted during the Special General Inspection, FY 72, during the period 10-21 April 1972 [Radiation Protection Program, Walter Reed Army Medical Center (Action No. 43-054-72)].
- c. A list of abbreviations used are given in Appendix A. Elements of the radiation protection program which were surveyed are given in Appendix B.

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#### 4. FINDINGS.

##### a. Overall Radiation Protection Program.

(1) WRAMC possessed a specific AEC License of Broad Scope and several other AEC licenses of limited scope as well as a DA Radioactive Material Authorization of Broad Scope. These licenses and authorization permitted the use of radioactive materials at various locations and activities assigned to or located at WRAMC. The use of radioactive materials was controlled by the WRAMC Radioisotope Committee.

(2) A Radioisotope Committee was established in accordance with AR 40-14, AR 40-37, and AR 700-52. The Committee was established by position and responsibilities were delineated by WRAMC Regulation 40-19. Minutes were available for review.

(3) LTC Vandy L. Miller, WRAMC Health Physics Officer, was the principal staff officer responsible for surveillance and implementation of the radiation protection program established for the control of health hazards associated with the use of radioactive materials and other sources of ionizing and non-ionizing radiation.

(4) WRAMC Regulation 40-10, Health Physics Regulation, is currently under revision. This regulation establishes the procedure for the safe use of radioactive sources, whereas various Health Physics SOP's and memorandums were provided for the implementation of pertinent directives and standards for protection.

(5) In addition to the routine health physics support, WRAMC Health Physics Activity provided several training programs for principal users and technicians in the health physics aspects associated with the use of radioactive materials.

##### b. Personnel Dosimetry Program.

(1) All personnel occupationally exposed to ionizing radiation were observed to be wearing film badges.

(2) A review of DD Forms 1141, Record of Occupational Exposure to Ionizing Radiation, indicated they were being maintained separately from the health records by the WRAMC Health Physics Officer. A review of selected records indicated that they were current and complete. A review of selected records indicated that locator sheets had been placed in subject records as required by AR 40-403.

c. AEC Licenses and DA Authorizations.

- (1) B'L 08-01738-02, expiration date August 1974.
- (2) B'L 08-01733-03, expiration date August 1975.
- (3) B'L 08-01733-04, expiration date September 1974.
- (4) B'L 08-01733-05, expiration date July 1974.
- (5) S'III 472, expiration date April 1975.
- (6) SUB 603, expiration date April 1973, an amendment has been submitted to extend the expiration date.
- (7) DA Authorization A-08-17-01, expiration date May 1974.
- (8) Letter, MED-C-RS, WRAHC, 4 October 1965, to The Surgeon General, subject: Request - Authorization to Use Accelerator-Produced Radioactive Material and indorsement thereto.

d. Radioisotopes in Human Activities.

(1) A review of records and reports indicated that the Radioisotope Committee met at periodic intervals to discuss major issues and to review actions taken by the subcommittees.

(2) The reports, Radioisotopes in Human Use Activities, RCS MED-197, were being prepared and submitted in accordance with the provisions of AR 40-37.

(3) A copy of the users' authorization to use radioisotopes had been placed in the appropriate 201 files of the individuals concerned, except for MAJ Snukovsky, as required by AR 40-37.

e. Nuclear Medicine Service, Department of Radiology, WRAHC.

(1) A review of the radioisotope receipt and dispensary records indicated that they were being maintained and used in accordance with the procedures prescribed by the conditions of AEC License 08-01738-02. Radioisotope inventory records were being maintained on DA Forms 8-212, Narcotic and Controlled Drug Record, as well as locally produced forms with a separate form for each lot number of the specific radio-pharmaceutical.

(2) A survey was made of the areas where radioactive materials were used, stored, and disposed of and the following comments are made with respect to the survey:

(a) All the areas surveyed were found to be free of radioactive contamination and all stored materials were adequately shielded.

(b) Radiation caution signs and labels were properly posted as required by AR 385-30, 18 November 1971, and Title 10, CFR, Part 20.

(c) A current copy of Title 10, CFR, Part 20; a copy of the AEC Licenses; DA Authorization; and a copy of the Health Physics Regulation for the radiation protection program were available.

f. Radiation Therapy Service, Department of Radiology, WRAMC.

(1) Located in this Service is a Cobalt-60 teletherapy unit; a 4 MeV Clinic; a Strontium-90 eye applicator, SN 119; a teletherapy simulator; and a 300 kVp x-ray unit. Approximately 370 mg of Radium-226 and approximately 400 mg radium equivalent of Cesium-137, mostly in small capsules, needles, or cells, were stored in a separate, well-ventilated and secured room.

(2) All radiation therapy units are calibrated annually by MAJ Robert Quillen, Radiological Physicist, assigned to the Department of Radiology, WRAMC.

(3) A survey was made of the areas where radioactive materials were used or stored and the following comments are made with respect to the survey:

(a) All the areas surveyed were found to be free of radioactive contamination and all stored materials were adequately shielded.

(b) Radiation caution signs and labels were properly posted as required by AR 385-30 and Title 10, CFR, Part 20.

(c) A current copy of Title 10, CFR, Part 20; a copy of the AEC Licenses; DA Authorization; and a copy of the Health Physics Regulation for the radiation protection program were available.

g. Radiological Emergency Medical Team.

(1) The REMT had been properly organized and adequate equipment was provided to perform the mission as required by AR 40-13. WRAMC Regulation 40-13 implemented the requirements of AR 40-13.

(2) Although there is adequate equipment to perform the mission, sensitive equipment was not properly packed to withstand transportation by airlines and off-road wheeled vehicle operations.

(3) The REIT last participated in an exercise as part of the First Army NAICP on 24 March 1971 at APG, MD. During the DORF Reactor Facility Inspection, 16-18 April 1973, the WRAMC-REIT participated in an emergency exercise.

h. US Army Medical Research Institute for Infectious Diseases, Fort Detrick, MD.

(1) USAMRIID uses radioactive materials under the following AEC Licenses and DA Authorization:

(a) BNL 08-01738-02, expiration date August 1974.

(b) BNL 08-01738-05, expiration date July 1974.

(c) DA Authorization A-08-17-01, expiration date May 1974.

(2) USAMRIID Memo 40-11 established the policies and procedures for radioisotope utilization and supplements WRAMC Regulation 40-10.

(3) USAMRIID was in the possession of approximately 3/4 of a pound of thorium oxide and approximately 3/4 of a pound of uranyl acetate. Possession and use is not authorized by AEC License SUB 603.

i. Calibration and Maintenance of Radiation Detection Instrumentation.  
The dosimeter used for health and safety purposes did not have a DA Label 80 affixed and overprinted with "I&C" as required by paragraph 3a(2), TB 750-242-3, 21 November 1969.

5. DISCUSSION. Considerable effort has been put forth to review and update WRAMC Regulations and Health Physics, SOP's, and Memorandums; however, there was a definite need to review each AEC License and DA Authorization to determine that all supporting documentation on file with appropriate agencies was current and relevant.

6. CONCLUSION. A review of the findings revealed that there were no health hazards resulting from the use of ionizing radiation sources at WRAMC. The overall radiation protection program was adequate with a few exceptions for which recommendations are provided.

7. RECOMMENDATIONS.

a. Insure that a copy of the Authorization (Certifications) to use radioactive materials in humans is posted in the individual's 201 file as required by paragraph 3c(6) and paragraph 3d(2), AR 40-37.

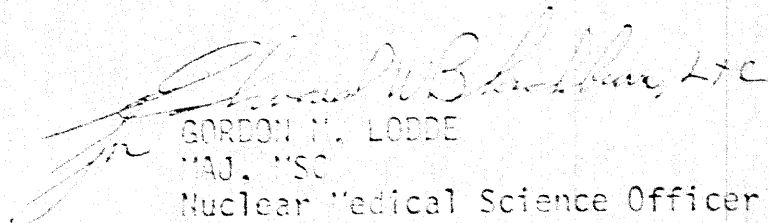
b. Participate in an exercise at least annually to evaluate the REMT capabilities as required by paragraph 15, AR 40-13, 2 November 1972.

c. Develop better methods for packing sensitive equipment belonging to the REMT.


d. Amend AEC License SUB 603 to permit possession and use of uranyl acetate and thorium oxide at USAMRIID, Fort Detrick, MD.

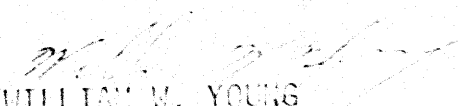
e. Affix DA Labels 80 overprinted with "I&C" on all dosimeters used for health and safety purposes as required by paragraph 3a(2), TB 750-242-3.

f. Assure that all AEC Licenses and Authorizations are supported by current and relevant regulations, SOP's, and Memorandums and that appropriate agencies have copies of current documentation.

  
GORDON M. LODDE  
MAJ, MSC  
Nuclear Medical Science Officer  
Health Physics Division

APPROVED:

  
EDWARD M. BLACKBURN  
LTC, MSC  
Chief, Health Physics Division

  
WILLIAM M. YOUNG  
COL, MSC  
Director, Radiation & Environmental Sciences

APPENDIX A

ABBREVIATIONS

1. REMT - Radiological Emergency Medical Team
2. USAMRIID - United States Army Medical Research Institute for Infectious Diseases
3. AEC - Atomic Energy Commission
4. DA - Department of the Army
5. SOP - Standing Operating Procedures
6. MeV - Million electron Volts
7. kVp - kilovolt peak
8. mg - milligram
9. NAIC - Nuclear Accident and Incident Control Plan
10. APG - Aberdeen Proving Ground
11. DORF - Diamond Ordnance Reactor Facility
12. I&C - Inspection and Certification
13. SN - Serial Number
14. WRAMC - Walter Reed Army Medical Center

USAEHA-RH Radn Prot Surv No. 43-052-73, Ionizing Radn Sources, WRAMC,  
WASH, DC 20012, 2-11 Apr 73

## APPENDIX B

### Elements of the Radiation Protection Program Survey

<u>Element</u>	<u>Applicable Reference</u>
Radiological Emergency Medical Team	AR 40-13
Personnel Dosimetry Program	AR 40-14; AR 40-27, 11 Jun 69; AR 40-403, 18 Aug 69
Human Use of Radioactive Material	AR 40-37
Clinical Investigation Using Radioactive Material	AR 40-38, 30 Aug 71
Radioactive Material Control	AR 40-61, 4 Apr 69 and AR 700-52
Shipment and Receipt Records	AR 55-55, 12 Nov 70
Human Volunteers	AR 70-25, 26 Nov 62
Radiation Labeling and Posting	AR 385-30
Monthly Surveys	AR 700-52
Inventory of Radiation Sources	AR 700-52
Registry of Radiation Producing Devices	AR 700-52
Records of Leak Testing of Sealed Sources	AR 700-52
Appointment of Radiation Protection Officer and An Alternate	AR 700-52, AR 40-14, AR 40-37
Radioisotope Committee	AR 700-52, AR 40-14, AR 40-37
Control of Radioactive Calibration and Test Items of Supply	AR 725-1, 22 Sep 70
Radioactive Waste Disposal	AR 755-15, 4 Nov 66; TM 3-261, 20 May 66
TS-784/PD	TM 11-6665-204-12, 1 Mar 73