ITEM 13-PROCEDURES FOR ODERING AND RECEIVING RADIOACTIVE MATERIAL

ITEM 14-PROCEDURES FOR SAFELY OPENING PACKAGES CONTAINING RADIOACTIVE MATERIALS

HEALTH PHYSICS
WALTER REED ARMY MEDICAL CENTER
Washington, D.C. 20012

HSWP-QHP
MEMO #6

12 July 1979

PROCEDURES FOR ORDERING, RECEIVING AND SAFELY OPENING PACKAGES CONTAINING RADIOACTIVE MATERIAL

1. GENERAL Radioactive material for Walter Reed Army Medical Center (WRAMC) and tenant activities will be ordered, received and secured in accordance with U.S. Army Regulations, Title 10, Code of Federal Regulations, and the provisions of WRAMC's Nuclear Regulatory Commission License.

2. HEALTH PHYSICS OFFICE RESPONSIBILITIES The Health Physics Office is responsible for assuring that all radioactive material is ordered and received in accordance with the above directives.

3. PRINCIPAL USER'S RESPONSIBILITIES WRAMC Principal Users are responsible for ordering and receiving radioactive material in accordance with the enclosed instructions (Annexes A & B).

4. MILITARY POLICE'S RESPONSIBILITIES WRAMC Military Police are responsible for receiving radioactive materials delivered during non-duty hours in accordance with the enclosed instructions (Annex B).

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2 Incls
1. Annex A-Procedures for Procurement of Radioactive Material
2. Annex B-Procedures for Receiving and Safely Opening Packages Containing Radioactive Material

This Memo supersedes SOP 4-2, dated 31 October 1977.

HEALTH PHYSICS
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MEMO #6
Annex A

12 July 1979

PROCEDURES FOR PROCUREMENT OF RADIOACTIVE MATERIAL

ANNEX A

1. GENERAL

a. A Principal User may procure for use at WRAMC only those radioisotopes currently authorized for his use by the WRAMC Radiation Control Committee, subject to the limitations of his authorization.

b. Unless specific prior arrangements have been made with the Health Physics Officer, the maximum quantity which may be ordered at any one time is limited by the maximum activity of that radioisotope which the User is authorized to possess less the amount of activity the user will have on hand at the time the new order is received.

c. Specific prior approval of the Health Physics Officer shall be required before receiving and/or transfering gifts containing radioactive material. This particular application pertains to those instances where normal supply channels are not utilized. All gifts will be delivered to the locations shown in para. 5 (2)b.

2. ORDERING PROCEDURES

a. The Principal User shall submit a completed DA Form 3953 (Purchase Request and Commitment) through normal supply channels for the procurement of all radioactive materials.

b. In addition to the information required by WRAMC Procurement Regulations, each DA Form 3953 shall contain the following:

(1) Radionuclide, chemical form, and total activity (Activity is given

as microcurie (uCi), millicurie (mCi), or curie (Ci); for natural radioactive materials microgram (ug), milligram (mg), gram (g), or kilogram (kg) may be used; for radium equivalent sources such as Cesium-137 milligram radium equivalent (mg Ra eq) may be used where appropriate).

(2) The WRAMC Radioisotope Authorization Number will be indicated in the "Attention Line" of the "Ship To" address.

(3) Date required or delivery date

(4) Instructions to the vendor to ship to the location shown in para (5) below.

(5) One of the proper shipping addresses designated below:

(a) For items to be delivered by mail:

Health Physics Officer
Bldg 188, Forest Glen Section
Walter Reed Army Medical Center
ATTN: Authorization No. _____
Washington, D.C. 20012

(b) For items to be delivered by all other means:

Health Physics Officer
Bldg 188, 2681 Linden Lane
Forest Glen Section
Walter Reed Army Medical Center
ATTN: Authorization No. _____
Silver Spring, Maryland

(c) For item destined for USAMRIID, Ft. Detrick, Maryland

Radiation Protection Officer
US Army Medical Research Institute of Infectious Diseases
South Loading Dock, Bldg 1425
Fort Detrick
Fredrick, Maryland 21701

(d) For any item destined for Andrew Rader Clinic, Ft. Myer, Virginia:

Andrew Rader Army Clinic
Bldg 1425
Ft. Myer, Virginia 22211

(e) For any item destined for Army Medical Laboratory, Ft. Meade Maryland:

Radiation Protection Officer
Army Medical Laboratory
Building 2490
Ft. Meade, Maryland 20755

c. Any item requiring special handling or pick-up by the Health Physics Office, WRAMC, must be coordinated with the Health Physics Officer. Principal Users are responsible for notifying the Radioactive Materials Control Branch, Health Physics Office (427-5104) when any order for radioactive materials is placed for quantities in excess of the "Exempt Quantity Limits" with exceptions listed in Appendix 2, Annex B; or when any order for radioactive materials is placed for quantities in excess of the "Type A Quantity Limits" listed in Appendix 2, Annex B. Any questions concerning these limits should be directed to the Radioactive Materials Control Branch (427-5104).

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Annex B

PROCEDURES FOR RECEIVING AND SAFELY OPENING PACKAGES CONTAINING RADIOACTIVE MATERIAL

1. GENERAL

a. All incoming shipments of radioactive material to Walter Reed Army Medical Center will be received by the Health Physics Office during duty hours, or by the Military Police, WRAMC Forest Glen Section during non-duty hours. Shipments to Fort Detrick, Ft. Meade or Ft. Myer will be delivered to the address shown in Annex A.

b. All incoming packages of radioactive material will be examined for damage immediately upon receipt. Any packages that appear to be wet, punctured, crushed, or otherwise damaged will be considered to be contaminated. Do not handle such packages. Follow the instructions contained in paragraph 3, Appendix 1 to this Annex.

c. Incoming radioactive material shipments must be continuously secured against unauthorized removal and the radiation levels adjacent to the secured storage area may not exceed the limits in Paragraph 20.105, Title 10, Code of Federal Regulations, Part 20.

d. Unless prior approval has been granted by the Health Physics Office all WRAMC incoming shipments will be secured in the following areas:

(1) Normal Duty Hours: Health Physics Office, Bldg 188, WRAMC, FGS

(2) Non-Duty Hours: Bldg 149-A, WRAMC, FGS

e. Approved receiving areas will be posted with the appropriate caution signs as specified in Paragraph 20.203, Title 10, Code of Federal Regulations,

Part 20.

f. No incoming shipment of radioactive material may be refused when delivered.

2. SHIPMENT MONITORING & DELIVERY TO AUTHORIZED RECIPIENTS

a. Each package containing more than an "Exempt Quantity" of radioactive material (less exceptions) as specified in Appendix 2 of this Annex shall be monitored by the Health Physics Office for removable contamination within three (3) hours after it is received, if received during normal duty hours or within eighteen (18) hours after it is received, if received during non-duty hours. If removable radioactive contamination in excess of 0.01 microcuries (22,000 disentegrations per minute) per 100 square centimeters of package surface is found on the external surface of the package, the Health Physics Office shall immediately notify the final delivering carrier and the Nuclear Regulatory Commission Inspection and Enforcement Office for Region 1 (215/337-1150).

b. Each package containing quantities of radioactive material in excess of the "Type A Quantities" specified in Appendix 2 of this Annex shall be monitored by the Health Physics Office within three (3) hours after it is received, if received during normal duty hours, or within eighteen (18) hours after it is received, if received during non-duty hours. If radiation levels found on the external surface of the package are in excess of 200 millirem per hour, or at three (3) feet from the external surface of the package are in excess of 10 millirem per hour, the Health Physics Office shall immediately notify the final delivering carrier and the Nuclear Regulatory Commission Inspection and Enforcement Office for Region 1 (215/337-1150).

c. All shipments of radioactive material will be inspected by the Health Physics Office to insure that the shipment does not exceed the possession limits of the Auth-

orization under which it is ordered. Unauthorized shipments will be returned to the vendor when possible, disposed of as radioactive waste, or held until the Principal User obtain an amended Radioactive Material Authorization allowing receipt of the material. Unauthorized shipments will not be held by Health Physics for more than ninety (90) days.

d. The following package opening procedure will be utilized by Health Physics personnel:

(1) Put on gloves.

(2) Open outer package (following manufacturer's directions if supplied) and remove packing slip. Open inner package and verify that the contents are as listed on the packing slip.

(3) Check integrity of source container: inspecting for breakage of seals or vials, loss of liquid, discoloration of packaging material, etc.

(4) Perform a wipe test on the external surface of the final source container when a shipment requires contamination surveys of the external surface of the shipping package (See Appendix 2).

3. FINAL SOURCE CONTAINER CHECK

The Principal User is responsible for making a check of the final radioactive materials source container. This check will follow the steps outlined in sub paragraph 2d(1) through (3) above. In addition the Principal User will perform a wipe test of the final source container upon receipt to determine if contamination is present.

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MEMO #6 (Annex B, Appendix 1)

RECEIPT OF RADIOACTIVE MATERIAL SHIPMENTS BY MILITARY POLICE DURING NON-DUTY HOURS

1. GENERAL. Federal law requires that certain categories of radioactive material shipments be monitored by the Health Physics Office within eighteen (18) hours of receipt. To meet the requirement, all radioactive material shipments will be received by the Military Police, WRAMC, Forest Glen Section.

2. RECEIVING INSTRUCTIONS. Military Police personnel receiving shipments will:

a. Annotate the shipping receipt with his/her name, time and date received.

b. Maintain all shipping receipts at the Military Police Station, FGS until picked up by Health Physics personnel.

c. Examine each package for damage immediately upon receipt.

d. If the package is undamaged, take it to Building 149-A, unlock door, place package in the refrigerator located immediately to the left of the door and relock the entrance door.

3. SAFETY PROCEDURES FOR DAMAGED PACKAGES. Any package that appears to be wet, punctured, crushed or otherwise damaged requires the following action:

a. Call the Health Physics Office Duty NCO immediately (TELEPHONE: 427-5107).

b. Ask the carrier to remain at the Military Police Station, WRAMC, FGS until it can be determined that neither he/she nor the delivery vehicle is contaminated.

c. Do not handle the package. Place a large piece of plastic sheeting on the floor. Put a piece of absorbent paper on the plastic (paper side up if backed). Have the carrier put on a pair of gloves and place the package on the absorbent paper.

d. Do not allow personnel to occupy the same room in which the package is located until the Health Physics Office Duty NCO determines that no safety hazard exists.

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Annex B
Appendix 2

QUANTITIES OF RADIOACTIVE MATERIAL EXEMPTED FROM SHIPMENT MONITORING

1. Certain shipments of radioactive materials are exempted from the monitoring procedures required by Paragraph 20.205, Title 10, Code of Federal Regulations, Part 20.

2. The following shipments are not required to be monitored for radioactive contamination and excessive radioactive exposure rates.

a. Packages containing no more than the exempt quantities shown in the table in paragraph 3 below:

b. Packages containing no more than 10 mCi of radioactive material consisting solely of 3-H, 14-C, 35-S or 125-I.

c. Packages containing only radioactive material as gases or in special form.

d. Packages containing only radioactive material in other than liquid form (including Mo-99/Tc 99m generator) and not exceeding the Type A quantity limit specified in the table below.

e. Packages containing only radionuclides with half-lives of less than 30 days and a total quantity of no more than 100 millicuries.

3. Table of Exempt and Type A Quantities

Transport Group*	Exempt Quantity Limit (In millicuries)	Type A Quantity Limit (In curies)
I	0.01	0.001
II	0.1	0.050
III	1.0	3
IV	1.0	20
V	1.0	20
VI	1.0	1000
VII	25,000.0	1000

* A Table of Radioactive Material Transport Groups is set forth in Appendix C, Title 10, Code of Federal Regulations, Part 71 (attached).

Americium (95)	Am 241	I
	Am 242	I
	Am 242 m	I
	Am 243	I
Argon (18)	Ar 37	VI
	Ar 41	II
	Ar 41 (uncompressed) **	V
Arsenic (33)	As 72	IV
	As 74	IV
	As 76	IV
	As 77	IV
Astatine (85)	At 211	III
Barium (56)	Ba 131	IV
	Ba 133	II
	Ba 140	III
Berkelium (97)	Bk 249	I
Beryllium (4)	Be 7	IV
Bismuth (83)	Bi 206	IV
	Bi 207	III
	Bi 210	II
	Bi 212	III
Bromine (35)	Br 82	IV
Cadmium (48)	Cd 109	IV
	Cd 115 m	III
	Cd 115	IV
Calcium (20)	Ca 45	IV
	Ca 47	IV
Californium (98)	Cf 249	I
	Cf 250	I
	Cf 252	I
Carbon (6)	C 14	IV
Cerium (58)	Ce 141	IV
	Ce 143	IV
	Ce 144	III
Cesium (55)	Cs 131	IV
	Cs 134 m	III
	Cs 134	III
	Cs 135	IV
	Cs 136	IV
	Cs 137	III
Chlorine (17)	Cl 36	III
	Cl 38	IV
Chromium (24)	Cr 51	IV
Cobalt (27)	Co 56	III
	Co 57	IV
	Co 58 m	IV
	Co 58	IV
	Co 60	III
Copper (29)	Cu 64	IV
Curium (96)	Cm 242	I
	Cm 243	I
	Cm 244	I
	Cm 245	I
	Cm 246	I
Dysprosium (66)	Dy 154	III
	Dy 165	IV
	Dy 166	IV
Erbium (68)	Er 169	IV
	Er 171	IV
Europium (63)	Eu 150	III
	Eu 152 m	IV
	Eu 152	III
	Eu 154	II
	Eu 155	IV
Fluorine (9)	F 18	IV
Gadolinium (64)	Gd 153	IV
	Gd 159	IV
Gallium (31)	Ga 67	III
	Ga 72	IV
Germanium (32)	Ge 71	IV
Gold (79)	Au 193	III
	Au 194	III
	Au 195	III
	Au 196	IV
	Au 198	IV
	Au 199	IV
Hafnium (72)	Hf 181	IV
Holmium (67)	Ho 166	IV
Hydrogen (1)	H 3 (see tritium)	
Indium (49)	In 113 m	IV
	In 114 m	III
	In 115 m	IV
	In 115	IV
Iodine (53)	I 124	III
	I 125	III
	I 126	III
	I 129	III
	I 131	III
	I 132	IV
	I 133	III
	I 134	IV
	I 135	IV

Iron (26)	Fe 52	IV
	Fe 55	IV
	Fe 59	IV
Krypton (36)	Kr 85 m (uncompressed) **	V
	Kr 85	III
	Kr 85 (uncompressed) **	VI
	Kr 87	II
	Kr 87 (uncompressed) **	V
Lanthanum (57)	La 140	IV
Lead (82)	Pb 203	IV
	Pb 210	II
	Pb 212	II
Lutecium (71)	Lu 172	III
	Lu 177	IV
Magnesium (12)	Mg 28	III
Manganese (25)	Mn 52	IV
	Mn 54	IV
	Mn 56	IV
Mercury (80)	Hg 197 m	IV
	Hg 197	IV
	Hg 203	IV
Mixed fission products MFP.		II
Molybdenum (42)	Mo 99	IV
Neodymium (60)	Nd 147	IV
	Nd 149	IV
Neptunium (93)	Np 237	I
	Np 239	I
Nickel (28)	Ni 56	III
	Ni 59	IV
	Ni 63	IV
	Ni 65	IV
Niobium (41)	Nb 93 m	IV
	Nb 95	IV
	Nb 97	IV
Osmium (76)	Os 185	IV
	Os 191 m	IV
	Os 191	IV
	Os 193	IV
Palladium (46)	Pd 103	IV
	Pd 109	IV
Phosphorus (15)	P 32	IV
Platinum (78)	Pt 191	IV
	Pt 193	IV
	Pt 193 m	IV
	Pt 197 m	IV
	Pt 197	IV
Plutonium (94)	Pu 238 (F)	I
	Pu 239 (F)	I
	Pu 240	I
	Pu 241 (F)	I
	Pu 242	I
Polonium (84)	Po 210	I
Potassium (19)	K 42	IV
	K 43	III
Praseodymium (59)	Pr 142	IV
	Pr 143	IV
Promethium (61)	Pm 147	IV
	Pm 149	IV
Protactinium (91)	Pa 230	I
	Pa 231	I
	Pa 233	II
Radium (88)	Ra 223	II
	Ra 224	II
	Ra 226	I
	Ra 228	I
Radon (86)	Rn 220	IV
	Rn 222	II
Rhenium (75)	Re 183	IV
	Re 186	IV
	Re 187	IV
	Re 188	IV
	Re Natural	IV
Rhodium (45)	Rh 103 m	IV
	Rh 105	IV
Rubidium (37)	Rb 86	IV
	Rb 87	IV
	Rb Natural	IV
Ruthenium (44)	Ru 97	IV
	Ru 103	IV
	Ru 105	IV
	Ru 106	III
Samarium (62)	Sm 145	III
	Sm 147	III
	Sm 151	IV
	Sm 153	IV
Scandium (21)	Sc 46	III
	Sc 47	IV
	Sc 48	IV

Selenium (34)	Se 75	IV
	Se 79	IV
Silver (47)	Ag 105	IV
	Ag 110 m	III
	Ag 111	IV
Sodium (11)	Na 22	III
	Na 24	IV
Strontium (38)	Sr 85 m	IV
	Sr 85	IV
	Sr 89	III
	Sr 90	II
	Sr 91	III
	Sr 92	IV
Sulphur (16)	S 35	IV
Tantalum (73)	Ta 182	III
Technetium (43)	Tc 96 m	IV
	Tc 96	IV
	Tc 97 m	IV
	Tc 97	IV
	Tc 99 m	IV
	Tc 99	IV
Tellurium (52)	Te 125 m	IV
	Te 127 m	IV
	Te 127	IV
	Te 129 m	III
	Te 129	IV
	Te 131 m	III
	Te 132	IV
Terbium (65)	Tb 160	III
Thallium (81)	Tl 200	IV
	Tl 201	IV
	Tl 202	IV
	Tl 204	III
Thorium (90)	Th 227	II
	Th 228	I
	Th 230	I
	Th 231	I
	Th 232	I
	Th 234	II
	Th Natural	III
Thulium (69)	Tm 168	III
	Tm 170	III
	Tm 171	IV
Tin (50)	Sn 113	IV
	Sn 117 m	III
	Sn 121	III
	Sn 125	IV
Tritium (1)	H 3	IV
	H 3 (as a gas, as luminous paint, or adsorbed on solid material)	VII
Tungsten (74)	W 181	IV
	W 185	IV
	W 187	IV
Uranium (92)	U 230	II
	U 232	I
	U 233 (F)	II
	U 234	II
	U 235 (F)	III
	U 236	II
	U 238	III
	U Natural	III
	U Enriched (F)	III
	U Depleted	III
Vanadium (23)	V 48	IV
	V 49	III
Xenon (54)	Xe 125	III
	Xe 131 m	III
	Xe 131 m (uncompressed). **	V
	Xe 133	III
	Xe 133 (uncompressed). **	VI
	Xe 135	II
	Xe 135 (uncompressed). **	V
Ytterbium (70)	Yb 175	IV
Yttrium (39)	Y 88	III
	Y 90	IV
	Y 91 m	III
	Y 91	III
	Y 92	IV
	Y 93	IV
Zinc (30)	Zn 65	IV
	Zn 69 m	IV
	Zn 69	IV
Zirconium (40)	Zr 93	IV
	Zr 95	III
	Zr 97	IV