RADIOISOTOPE ACQUISITION AND DISPOSITION

PURPOSE

This procedure specifies measures for the control of radioactive materials from initial acquisition to final disposition. It describes the prerequisites for acquiring radioactive materials. It specifies the procedures and forms for surveying and reporting the receipt of packages of radioactive materials, for maintaining radioactive inventory records, and for reporting all transfers and disposals of radioactive materials. Radioactive waste categories are described, along with acceptable methods for segregation, packaging, labeling and reporting the disposal of such wastes.

POLICY

Radioactive materials may be used for any legitimate educational, clinical or research purpose. However, they may be purchased, or otherwise obtained, only by individuals specifically authorized by the Radiation Safety Committee. **The use of radioactive materials is conditional upon compliance with specific procedures established by the Committee.**

The receipt of any radioactive material, regardless of the manner in which it is obtained, must be reported promptly to the RSO on a form provided for that purpose.

Each user of radioactive materials shall maintain a complete record of all acquisitions, uses, transfers and disposals of such materials and provide this data to the RSO in a timely manner. **Before any radioactive materials may be transferred to another responsible user, or to another organization, authorization must be obtained from the RSO.**

Radioactive waste materials must be properly segregated, packaged and labeled by the user prior to collection for disposal. For the safety of all personnel involved in radioactive waste disposal, users must take all reasonable precautions to deactivate, detoxify and neutralize hazardous waste materials. All radioactive waste materials must be prepared and labeled properly before they will be picked up for disposal; wastes found to be improperly prepared or labeled may be returned to the user for reprocessing or repackaging under the direction of the RSO.

DEFINITIONS

"Animal" waste means carcasses or parts of animals administered radioactive materials; it also includes collected excreta and combustible bedding materials, e.g. shavings or sawdust.

"Aqueous" means a liquid that is soluble or readily dispersible in water and which **contains no chemicals classified as toxic or hazardous**; within the limits for release of radioactivity, aqueous liquid wastes may be discarded to the sewer.

"Compactible" waste means any solid, nonputrescible, dry waste, e.g. paper, plastics, glassware and metals, that does not contain any liquids, compressed gases, pyrophoric or other hazardous materials, including lead.

"Flammable" for purposes of this procedure, means any combustible, flammable or ignitable liquid.

"LS media" means any mixture of solvents and fluors used for liquid scintillation counting.

"NHNT" means nonhazardous, nontoxic, non-flammable LS media that may be classified as an aqueous liquid for disposal.

"Pathogenic" means any material potentially containing pathogenic organisms, toxins, infectious agents, etc.

"Sharps" means needles and syringes, glass pipets, broken glass, or any other objects that might puncture the skin.

"Toxic" refers to any material that is toxic or poisonous to humans.

RADIOISOTOPE INVENTORY RECORDS

Purchase Orders

All purchases of radioactive materials must be initiated on a Requisition submitted to the Purchasing Department. Departmental purchase orders, commonly referred to as **"under $500 orders" are not to be used for radioactive materials**! The requisition must contain the name of the responsible user and an accurate description of the radioactive material, including the isotope and the total activity, e.g. millicuries, not just a catalog number. If the order is for an authorized isotope and quantity, the order will be processed promptly; otherwise the requisition may be returned to the purchaser until proper authorization is obtained.

Radioactive Material Control Records

A serially numbered, multi-part form is used for tracking radioactive material from the time it arrives at the University until it is transferred or disposed of as waste. For radioactive materials acquired through normal purchasing channels, the forms for reporting the contamination survey of a package, for verification of its contents and for reporting the disposition of the material will be initiated by the RSO. For materials acquired by any other means, the user is responsible for promptly notifying the RSO and providing the information necessary to initiate the form.

Package Arrival Report (RPR 13A)

When radioactive material is received, the record is initiated by entering the identification of the user, the material, and the results of the external survey of the package. The first part of the form (RPR 13A) is retained by the RSO. The second and third parts, containing the same serial number and identification data, are forwarded with the package to the user.

Receipt and Verification (RPR 13B)

Each new acquisition of radioactive material is reported on the "RADIOISOTOPE RECEIPT AND VERIFICATION" form (RPR 13B). The user must survey the inner container and packing materials for contamination according to the instructions provided on the form. Any damage to, or leakage from, the package must be reported immediately to the RSO. Any discrepancy in the package contents is to be noted on the form, but **no radioactive materials are to be returned to the vendor without notification of the RSO**. The survey data and verification of the package contents are to be recorded and the form returned promptly to the RSO.

Disposition Record (RPR 13C)

All dispositions of radioactive materials are to be recorded on the "RADIOISOTOPE DISPOSITION RECORD" (RPR 13C). To avoid incomplete records and possible oversights, the disposition of material should be recorded either directly on the disposition form (RPR 13C) or on a "RADIOISOTOPE DISPOSAL LOG" sheet (RPR 13D) at the time it is placed in a waste container. However, the material will not be removed from the computerized inventory until the disposition form is returned to the RSO.

To minimize errors in calculation of the activity used or disposed of at various times, **dispositions should be reported as percentages of the original quantity activity**, without regard to the radioactive decay or subsequent dilutions. Quantities may be recorded as actual activities for general tracking, e.g. microcuries or millicuries, but care must be taken to avoid errors and is the final calculation required. The reported dispositions must account for the original quantity within a reasonable degree of accuracy or the form will be returned to the user for correction.

Disposal Log

The "RADIOISOTOPE DISPOSAL LOG" (RPR 13D) is an optional form to aid radiation users in accounting for frequent disposals of small quantities of radioisotopes. Each "RADIOISOTOPE DISPOSAL LOG" sheet should be used for only one disposal method or waste container. When frequent disposals are made to the sewer, or to the same waste container, the **quantities may be summed for periods of up to a week** for entry on the "RADIOISOTOPE DISPOSITION RECORD" (RPR 13C). The total activity placed in each waste container must be recorded on its "RADIOACTIVE WASTE TAG" (RPR 13E).

Transfers to Other University Users

Radioactive materials may be transferred between responsible users provided that the user possessing

the material has checked with the RSO to verify the authorization of the receiving user and that the transfer is reported properly. The first user must record the transfer on the original "RADIOISOTOPE DISPOSITION RECORD" (RPR 13C) and the receiving user must request a new form from the RSO on which to record the disposition of the material.

Radioactive materials transferred by vehicle between buildings must be packaged and labeled in accordance with US Department of Transportation regulations. Follow the instructions in RPR 14, "SHIPMENT OF SMALL QUANTITIES OF RADIOISOTOPES."

Transfers to Non-University Users

The user who wishes to send radioactive material to another institution must notify the RSO of the intended transfer. **The user must not transfer any material until specific approval is received from the RSO.** The RSO must obtain written confirmation of the other institution's license before the transfer is made and must verify that the material is shipped in accordance with the regulations of the US Dept. of Transportation. Refer to "SHIPMENT OF SMALL QUANTITIES OF RADIOISOTOPES" (RPR 14) or "TRANSPORTATION OF RADIOACTIVE MATERIALS" (RPR 55) for instructions.

In the special case of transfers to or from the VA Medical Center, a special transfer form is used; it is a multipart form with copies for the users and the RSO's at both institutions. See "SHIPMENT OF SMALL QUANTITIES OF RADIOISOTOPES" (RPR 14).

HAZARDOUS CHEMICALS AND MIXED WASTES

When radioactivity is mixed with any material classified by the US Environmental Protection Agency as hazardous (ignitable, corrosive, reactive or toxic), the result is a **"mixed waste"**. Disposal of mixed wastes is extremely difficult and expensive. The use of flammable LS media and other hazardous chemicals that result in mixed wastes must be justified in writing and approved by the Radiation Safety Committee. As described in the *Radiation Safety Policy Manual* under "Service Fees", users may be required to pay for the disposal of mixed wastes as an "extraordinary cost."

DISPOSAL PROCEDURES

Empty Containers

If an empty radioisotope container is not contaminated, it should be disposed of as nonradioactive trash. **All radiation symbols and warning labels must be obliterated before an empty container is discarded**. Discarded lead and styrofoam containers must be kept separate, but will be picked up for recycling.

Uncontaminated Dry Wastes

Whenever possible, potentially contaminated waste materials, e.g. gloves, absorbent paper, etc., should be surveyed before disposal. **If the absence of radioactive contamination can be verified by direct survey, remove or obliterate all radiation labels and discard the material as ordinary trash**.

Since tritium (H-3) cannot be detected by direct survey, materials potentially contaminated with tritium must be surveyed by wipe tests or assumed to be contaminated. For other low-energy beta emitters, e.g. C-14, S-35, etc., direct surveys are possible on directly accessible surfaces, but may miss contamination embedded in absorbent materials. For high-energy beta emitters (e.g. P-32), x-ray emitters (e.g. I-125), or gamma emitters (e.g. Na-24), direct surveys with appropriate instruments can usually detect contamination even when embedded absorbent materials.

Compactible Radioactive Wastes

Solid wastes containing no hazardous, toxic, putrescible or pyrophoric materials, no compressed gases and no free liquids are collected and handled as compactible dry waste. The user must provide a covered metal garbage can of an appropriate size (no larger than 25 gallons); the RSO provides labels and plastic bag liners. Only **clear** bags may be used, since all waste bags are visually inspected. Any solid wastes that would be dangerous if compacted must be segregated and clearly labeled. Syringes, needles, pipets, etc. must be placed in standard "sharps" or other puncture-proof containers. **Wastes containing only nuclides with half-lives of less than 120 days and no "RADIOACTIVE MATERIAL" labels shall be packaged separately to be disposed of by radioactive decay**. As materials are added to a container, the isotopes and activities should be recorded on a "DISPOSAL LOG" (RPR 13D) or the

"RADIOISOTOPE DISPOSITION RECORD" (RPR 13C).

Disposal to the Sewer System

Liquid radioactive wastes should be released to the sanitary sewer if they meet any one of the following criteria:

1. Small quantities of radionuclides that are **readily soluble or dispersible in water, and contain no toxic or hazardous substances**, may be released to the sewer without prior approval of the RSO provided that **no more than 0.1 millicurie of all nuclides combined may be released by any one responsible user in any one week**, and that the release is recorded on the "RADIOISOTOPE DISPOSITION RECORD" (RPR 13C) or on a "DISPOSAL LOG" (RPR 13D) for subsequent summarization on the DISPOSITION RECORD. Any sink to be used for sewage disposal of radioactive materials must be approved by the RSO and shall be identified with a "CAUTION RADIOACTIVE MATERIAL" label on the drain trap as well as on the top of the sink.

2. Waste water from washing of contaminated persons or equipment containing more than 0.1 millicurie per contamination incident may be released to the sewer provided that the RSO is consulted prior to the release and that the total activity to be released is estimated with reasonable accuracy.

3. Excreta from patients administered radionuclides for diagnostic or therapeutic purposes may be released directly to the sanitary sewer system regardless of total activity or concentration.

Subject to the preceding criteria, users are encouraged to utilize the sewer for disposal of biologically active liquid wastes, for excreta from experimental animals, and for wash water from animal cages, laboratory glassware, etc. Although it is often advantageous or even necessary to collect and store radioactive wastes containing short-lived nuclides in order to take maximum advantage of decay prior to release, no such benefit is obtained by collection and storage of long-lived nuclides. Users are, therefore, encouraged to avoid the unnecessary collection and storage of nonhazardous liquid wastes if they can be safely released to the sanitary sewer under the preceding criteria.

Liquid Waste Collection and Segregation

Any radioactive liquid wastes that cannot be released to the sanitary sewer system under the criteria specified above are to be segregated and collected for disposal by the RSO. Separate containers are to be provided for materials which would be incompatible if placed in the same container, e.g. aqueous solutions and organic solvents, as well as for nuclides with different half-lives.

Liquid waste containers are to be unbreakable, e.g. plastic jugs or metal cans, and are to be placed in a secondary container of sufficient volume to collect all of the liquid in the event of a leak in the primary container.

Aqueous wastes must be neutralized to prevent violent chemical reactions when the wastes are transferred. Organic solvents and other hazardous materials must be clearly and completely identified to permit safe handling and disposal. No solid objects are to be placed in any liquid waste container and the materials must be sufficiently fluid to be poured from the container, even after storage for decay.

Biologically active materials are to be deactivated or detoxified at the time they are placed in the waste containers. A chlorine disinfectant (e.g. Clorox brand liquid bleach) should be added to putrescible liquid wastes to retard putrification (except radioiodine waste); the quantity depends on the concentration of organic material in the waste.

Frequent additions to a liquid waste container from a single inventory item may be recorded and summed on a "DISPOSAL LOG" (RPR 13D). The total disposals from each inventory item to a given waste container should be entered on the "RADIOISOTOPE DISPOSITION RECORD" (RPR 13C) at least weekly. The total activity of each nuclide, or percentage of each inventory item, shall be recorded on the "RADIOACTIVE WASTE TAG" (RPR 13E) before the container can be accepted for final disposal.

Liquid Scintillation Media and Vials

Users are required to use nonhazardous, nontoxic (NHNT) LS media to the maximum extent that is

compatible with research requirements. The use of flammable or otherwise hazardous LS media must be justified in writing and approved by the Radiation Safety Committee.

Used vials are to be segregated, according to the LS medium and the radionuclides they contain, into one of the following categories:

1. Vials containing only "NHNT" media, regardless of nuclides.

2. Any flammable solvent containing only H-3 and/or C-14.

3. Any flammable solvent containing only H-3, C-14 and/or short-lived nuclides, (half-lives <120 days) should be further segregated by nuclides.

4. Any flammable solvent containing long-lived nuclides other than H-3 or C-14.

Used vials containing LS media should be placed in their original containers for collection. Standard vials should be returned to their cardboard trays and cartons; mini-vials should be placed in plastic bags of approximately the same capacity as the original bags.

"RADIOACTIVE MATERIAL" labels should be obliterated or removed from all vials, trays, bags and boxes of vials before they are transferred to the RSO for disposal. The "RADIOACTIVE WASTE TAG" (RPR 13E) should be the only label indicating that the package contains radioactive material.

Vials are to be securely capped; cartons are to be securely taped and labeled to indicate the top, e.g. "this side up".

Animal Wastes

The Radiological Health Department has very limited freezer space for storage of animal waste. The user generating animal waste must provide sufficient freezer space for storage of such waste for a period of at least two months before collection. Notify the RSO when animal waste is awaiting collection. Cremation is no longer an option for disposal of animal waste at the University of Utah. Handling and disposal of animal waste is very expensive. Therefore, generators need to plan ahead and work together with Radiological Health personnel in determining the proper handling and pickup of animal waste.

Animal carcasses and body parts to be picked up and stored by the RSO are to be packaged and frozen for extended storage. Large animals should be dismembered so that each package contains no more than 10 kg (approximately 25 lbs) and configured so that carcasses/body parts can fit into a 30 or 55 gallon drum. No other material, e.g. plastic containers, glassware, syringes, needles, etc. may be packed with animal waste. Combustible bedding materials, e.g. shavings or sawdust may be collected in plastic bags or cardboard cartons provided they are tight and sturdy and will not leak during handling.

SPECIAL WASTES

Any radioactive wastes not included in the above categories, or exhibiting unusual hazards, or requiring special precautions of any kind, are handled under special arrangements with the RSO. Costs associated with handling, packaging, and/or disposal of abnormal radioactive wastes may be charged to the responsible user. Whenever unusual wastes are anticipated, the user should contact the RSO to plan for disposal before the wastes are generated.

LABELING OF RADIOACTIVE WASTES

All containers in which radioactive wastes are collected must be labeled "CAUTION - RADIOACTIVE MATERIAL" or "CAUTION - RADIOACTIVE WASTE". Packages in which radioactive wastes are stored or transported must be labeled with a "RADIOACTIVE WASTE TAG" (RPR 13E). The tag must be completed and attached to each radioactive package before it will be accepted for disposal.

1. **Each package may contain only one material category of waste** and must be labeled with its own tag.

2. Check **one material category** and one or more nuclide categories contained in the package.

3. List the isotopes and their activities in the spaces provided. Enter the chemical or trade name of any scintillation fluor, tissue solubilizer, and/or chemical that may be classified as flammable, hazardous or toxic in the space provided. For such materials,

see "Labeling of Mixed Wastes" below.

4. For liquid wastes, enter the volume (gallons) in a bulk container or the size of L.S. vials.

5. Verify whether the package contains any "RADIOACTIVE MATERIAL" labels or tape; circle "YES" or "NO".

6. Enter the name of the Responsible User; date and sign the tag to indicate compliance with the waste generator's certification.

7. Tie or tape the tag securely to the waste package.

Labels for waste containers and packages are available from the RSO. **Packages that are incompletely or inadequately labeled, or that in any other way do not comply with the criteria contained in this procedure, will not be accepted for disposal.**

LABELING OF MIXED WASTES

All containers in which mixed (radioactive and hazardous) wastes are collected must be labeled "HAZARDOUS WASTE". This is in addition to the label required for RADIOACTIVE WASTE. A hazardous waste label may be obtained from the RSO. In addition, the container should be labeled with the name of the waste stream or the identity of the hazardous waste constituents contained. If requested, the RSO will provide a combination container label which meets the labeling requirements for mixed waste.

When the mixed waste container is to be picked up for disposal, a "HAZARDOUS WASTE" disposal tag (Form HW-1) obtained from the Environmental Health and Safety Department must be prepared in addition to the "RADIOACTIVE WASTE" tag available from the Radiological Health Department.

WASTE COLLECTION

Radioactive wastes of all types are collected on regularly scheduled days. Users that generate large enough volumes of waste to require collection at least weekly may arrange for regular collections by going to the Radiological Health Department website at www.rso.utah.edu, select the "Radioactive Waste Pickup" tab, and enter their password (which can be obtained from the responsible user). If users are unable to access the website, they can call the Radiological Health Department at 801-581-6141 to request a waste pickup. To avoid running out of space in waste containers, it is important to request pickup several days before the container will actually be filled. The Radiological Health Department cannot guarantee waste collection on unscheduled days.

The notice on the following page will be posted at radwaste collection locations to remind users of the requirements.

RADIOACTIVE WASTE INSTRUCTIONS

POST NEAR THE RADWASTE COLLECTION AREA

ALL **USE OF RADIOACTIVE MATERIALS IS CONDITIONAL** UPON COMPLIANCE WITH THE FOLLOWING REQUIREMENTS FOR PACKAGING AND LABELING RADIOACTIVE WASTES. NONCOMPLIANCE WILL NOT BE TOLERATED, SINCE IT JEOPARDIZES ALL LEGITIMATE USES. WASTE PACKAGES ARE BEING INSPECTED; **IMPROPERLY PACKAGED OR LABELED WASTES MAY RESULT IN IMMEDIATE CURTAILMENT OF THE USE OF RADIOACTIVE MATERIAL.**

1. ALL RADIOACTIVE **WASTES MUST BE PROPERLY SEGREGATED** - BY MATERIALS AND BY NUCLIDES. CONTAINERS HOLDING RADIOACTIVE - HAZARDOUS (MIXED) WASTE **MUST BE KEPT CLOSED** BETWEEN WASTE TRANSFERS.

2. ALL SHARP OBJECTS MUST BE PLACED IN SEPARATE "**SHARPS CONTAINERS**".

3. **LEAD** MUST BE KEPT SEPARATE, BUT WILL BE PICKED UP.

4. THE RADIOACTIVE **WASTE TAG MUST BE FILLED OUT COMPLETELY AND ACCURATELY**, SIGNED AND DATED, BEFORE THE WASTE WILL BE ACCEPTED.

5. THE ACTIVITY OF EACH NUCLIDE MUST BE ESTIMATED AS ACCURATELY AS POSSIBLE AND MUST BE CLEARLY SPECIFIED AS MILLICURIES OR MICROCURIES.

6. IN ADDITION TO CHECKING THE APPROPRIATE CATEGORIES, THE WASTE **TAG MUST INCLUDE A DESCRIPTION** OF THE WASTES.

7. **CHEMICAL CONSTITUENTS** OF THE WASTE MUST BE **IDENTIFIED BY NAME**. **SCINTILLATION FLUORS** MUST BE IDENTIFIED BY **BRAND NAME** OR BY COMPLETE CHEMICAL COMPOSITION.

8. IF ANY MATERIAL IN A WASTE PACKAGE IS **IGNITABLE, HAZARDOUS, TOXIC OR CORROSIVE, AS DEFINED BY THE EPA**, A "**HAZARDOUS MATERIAL DISPOSAL REQUEST**" MUST ALSO BE COMPLETED BEFORE THE WASTE WILL BE PICKED UP. ATTACH THIS FORM TO THE RADIOACTIVE WASTE TAG.

9. IF ALL THE NUCLIDES IN A WASTE PACKAGE HAVE **HALF-LIVES OF LESS THAN 120 DAYS**, AND IF **ALL "RADIOACTIVE MATERIAL" TAPE OR LABELS HAVE BEEN REMOVED OR OBLITERATED**, ANSWER "NO" TO THE QUESTION ABOUT "RADIOACTIVE MATERIAL" LABELS; OTHERWISE, ANSWER "YES". NOTE THAT "OBLITERATE" MEANS TO "**REMOVE ALL TRACES, OR TO DESTROY COMPLETELY.**"

10. FOR ONLINE RADIOACTIVE WASTE PICKUP REQUESTS GO TO WWW.RSO.UTAH.EDU AND SELECT THE "RADIOACTIVE WASTE PICKUP" TAB. REQUESTS SHOULD BE MADE AT LEAST 2 DAYS BEFORE IT BECOMES URGENT. FOR RADIOACTIVE - HAZARDOUS (MIXED) WASTE, CALL WHEN THE CONTAINER IS 3/4 FULL.

    If you have any questions or problems, call the RSO at 801-581-6141.

RPR 13A. RADIOISOTOPE PACKAGE ARRIVAL REPORT

Inv. #: _____ User #: _____ Responsible User: _____

Department: _____ Location: _____

PO/Ref. #: _____ Nuclide: _____ Initial activity: _____ millicuries

Date: _____ Description: _____

This package contains _____ other items.

Verify every item and return all RECEIPT & VERIFICATION forms, but ONLY ONE PACKAGE SURVEY is required.

Exposure Rate Survey Results:

☐ <0.5 mrem/hr at surface

or: _____ mrem/hr at surface
_____ mrem/hr at 1 meter
If >50 at surface or if >1 at 1 meter, label should be Yellow II or III.

Contamination Survey Results:

☐ <6600 net dpm/300 cm^2 direct
(not to exceed an average of 22 dpm/cm^2)*

or: _____ net dpm/100 cm^2 on wipe
Above results by survey meter. Recipient to be notified by phone if contamination is found on wipe by liquid scintillation count.

"RADIOACTIVE" vehicle placards required to transport packages with YELLOW III labels.
*(If nuclide is an alpha emitter other than natural Uranium or Thorium, contamination results may not exceed 10% of the limit.)

INSTRUMENTS:	Model	Serial No.	Last Calibration	Efficiency
Contamination:				
Exposure Rate:				
Liquid Scintillation:				

***** (Instrument identification, calibration data and efficiency are on file in the Radiation Safety.)

WIPE RESULTS:	Total Count Rate	Background	Net Count Rate
Survey Meter:	cpm	cpm	dpm
LS Count:	cpm	cpm	dpm

If incorrect labeling is suspected, or if any contamination is found on the package, notify the recipient promptly. If personal or vehicle contamination is suspected, notify the Radiation Safety Officer immediately. Any required notifications to the carrier or regulatory agencies is to be made by the RSO.

Package survey by: _____ Initial:_____

RPR 13A Initiated and retained by Radiation Safety
RPR 13B RECEIPT & VERIFICATION and RPR 13C DISPOSITION RECORD, for each item sent to recipient.
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RPR 13B. RADIOISOTOPE RECEIPT AND VERIFICATION

Inv. #: _____ User #: _____ Responsible User: _____

Department: _____ Location: _____

PO/Ref. #: _____ Nuclide: _____ Initial activity: _____ millicuries

Date: _____ Description: _____

This package contains _____ other items.

Verify every item and return all RECEIPT & VERIFICATION forms, but ONLY ONE PACKAGE SURVEY is required.

Exposure Rate Survey Results:

☐ <0.5 mrem/hr at surface

or: _____ mrem/hr at surface
_____ mrem/hr at 1 meter
If >50 at surface or if >1 at 1 meter, label should be Yellow II or III.

Contamination Survey Results:

☐ <6600 net dpm/300 cm^2 direct
(not to exceed an average of 22 dpm/cm^2)*

or: _____ net dpm/100 cm^2 on wipe
Above results by survey meter. Recipient to be notified by phone if contamination is found on wipe by liquid scintillation count.

----------*fold here*----------

"RADIOACTIVE" vehicle placards required to transport packages with YELLOW III labels.
*(If nuclide is an alpha emitter other than natural Uranium or Thorium, contamination results may not exceed 10% of the limit.)

RECIPIENT: YOUR PROMPT ACTION IS REQUIRED!
OPEN THE PACKAGE CAREFULLY AND SURVEY FOR CONTAMINATION.
VERIFY THE CONTENTS. COMPLETE AND RETURN THIS FORM.

PACKAGE OPENING INSTRUCTIONS:

1. Assume that container and packaging materials may be contaminated.
2. Open in hood, if possible; wear gloves; work over absorbent paper.
3. Use shielding and tongs for energetic beta or gamma emitters.
4. Monitor thoroughly for contamination, including packaging materials, work area, clothing, hands, etc.
5. **Survey the inner container for removable contamination:** Wipe with a small piece of filter paper and check the paper for activity. Use liquid scintillation counter for low-energy betas such as H-3, gamma counter for Cr-51, I-125 etc. or portable survey meter for energetic beta emitters such as P-32. Report results below.
6. If packing materials are not contaminated, **OBLITERATE RADIOACTIVE MATERIAL LABELS**; then discard in ordinary trash. Note: "Obliterate" means to remove all traces or destroy completely.
7. Verify that the material description, nuclide and activity listed above are correct, or make corrections as necessary.

WIPE TEST RESULT: _____ net cpm, by ☐ Survey Meter or ☐ Sample Counter

PACKAGE RECEIVED IN GOOD CONDITION? Yes ☐ or describe:

_____

DESCRIPTION ABOVE IS ACCURATE OR HAS BEEN CORRECTED.

Opened, surveyed and verified by: _____ Date: _____

When completed, sign the form, fold with return address visible; mail to Radiation Safety.

Return Address

RADIATION SAFETY
UNIVERSITY OF UTAH
75 S. 2000 E. - RM 322
CAMPUS ADDRESS - 322 RAB

RPR 13C. RADIOISOTOPE DISPOSITION RECORD

Inv. #: _______________ User #: _______________ Responsible User: _____________________________

Department: __________________________________ Location: ____________________________________

PO/Ref. #: ____________ Nuclide: ______________ Initial activity: _______________________ millicuries

Date: ________________ Description: ____

1. Record all transfers and disposals of the material listed above.
2. **EACH ENTRY SHOULD BE EXPRESSED AS A PERCENTAGE OF THE INITIAL QUANTITY LISTED ABOVE.** Activity units may be used if decay corrected and specified clearly.
3. **For each disposal to a radwaste container or package, THE RADWASTE TAG NUMBER MUST BE ENTERED AND THE TYPE OF WASTE MATERIAL CIRCLED**. The quantities reported on inventory disposition records will be checked against activities entered on radwaste tags.
4. **Transfer to another user or location** must be approved in advance by the RSO and recorded below. **FOR TRANSFER TO ANOTHER U OF U RESPONSIBLE USER, INDICATE THE RU# AND THE NEW RPR13 INV# FOR THE TRANSFER.**

Categories: **S = to Sewer; T = Transfer to another U of U responsible user; A = Animal waste;**
D = Dry waste or sharps; F = Flammable or other hazardous liquid;
N = NHNT liquid (bulk or vials)

Date	Circle One Category	Waste Tag No. or Name of Recipient	Amount	Circle One Unit	Signature 1st Time Initials

--*fold here*--

__________	S T A D F N	_________________	__________	% µCi mCi	________________
__________	S T A D F N	_________________	__________	% µCi mCi	________________
__________	S T A D F N	_________________	__________	% µCi mCi	________________
__________	S T A D F N	_________________	__________	% µCi mCi	________________
__________	S T A D F N	_________________	__________	% µCi mCi	________________
__________	S T A D F N	_________________	__________	% µCi mCi	________________
__________	S T A D F N	_________________	__________	% µCi mCi	________________
__________	S T A D F N	_________________	__________	% µCi mCi	________________
__________	S T A D F N	_________________	__________	% µCi mCi	________________
__________	S T A D F N	_________________	__________	% µCi mCi	________________
__________	S T A D F N	_________________	__________	% µCi mCi	________________
__________	S T A D F N	_________________	__________	% µCi mCi	________________
__________	S T A D F N	_________________	__________	% µCi mCi	________________
__________	S T A D F N	_________________	__________	% µCi mCi	________________

Transfers to non-University User: Name of recipient: _____________________ Location: ______________________

Date approved by RSO: ________________ Complete RPR 14VA or 14LQ for non-University recipients.

Responsible User Signature: ____ **Date:** ______________________

When completed, sign the form, fold with return address visible; mail to Radiation Safety.

Return Address

RADIATION SAFETY
UNIVERSITY OF UTAH
75 S. 2000 E. - RM 322
CAMPUS ADDRESS - 322 RAB

RPR 13D. RADIOISOTOPE DISPOSAL LOG

Instructions: Record individual disposals on this form. Transfer the total for container to the "RADIOACTIVE WASTE TAG" (RPR 13E) and total for each inventory item to the "RADIOISOTOPE DISPOSITION RECORD" (RPR 13C). **Sink disposal limit is 100 microcuries per week.**

Sink or **Waste Tag #:** ____________

Categories: **S = to Sewer (Sink); T = Transfer to another U of U responsible user; A = Animal waste; D = Dry waste or sharps; F = Flammable or other hazardous liquid; N = NHNT liquid (bulk or vials)**

Date	Nuclide	Activity (Circle One)	Category	Percentage (Total Stock Container)	Inventory # (RPR 13C)	Initials
		mCi uCi				
		mCi uCi				
		mCi uCi				
		mCi uCi				
		mCi uCi				
		mCi uCi				
		mCi uCi				
		mCi uCi				
		mCi uCi				
		mCi uCi				
		mCi uCi				
		mCi uCi				
		mCi uCi				
		mCi uCi				
		mCi uCi				
		mCi uCi				
		mCi uCi				
		mCi uCi				
		mCi uCi				
		mCi uCi				
		mCi uCi				
		mCi uCi				
		mCi uCi				

±

CAUTION - RADIOACTIVE WASTE

ONLY ONE MATERIAL CATEGORY ALLOWED PER PACKAGE!

KEEP LEAD CONTAINERS SEPARATE FROM WASTES!

☐ DRY, COMPACTIBLE, SOLID WASTE
☐ SHARPS (NEEDLES, PIPETS, ETC.)
☐ ANIMAL OR OTHER BIOLOGICAL WASTE
☐ NON-HAZARDOUS, NON-TOXIC AQUEOUS LIQUID
☐ FLAMMABLE, HAZARDOUS OR TOXIC LIQUID
☐ TOXIC OR HAZARDOUS, NON-FLAMMABLE LIQUID
☐ OTHER MATERIALS (DESCRIBE BELOW)

FOR LIQUIDS:
Vials - circle size:
Mini **S**tandard
Bulk container size:
_____ Gallons
Volume of contents:
_____ Gallons

DESCRIBE MATERIAL - give names of ALL chemicals and fluors:

_____

_____

If any constituent is a "HAZARDOUS MATERIAL" as defined by the EPS, complete and ATTACH a HAZARDOUS WASTE DESCRIPTION

NUCLIDES	**ACTIVITY**	**Circle Units**
_____	_____	µCi mCi
_____	_____	µCi mCi
_____	_____	µCi mCi
_____	_____	µCi mCi

CHECK ALL APPLICABLE CATEGORIES:
☐ Long-lived, half-life > **120 days**
☐ Short-lived, half-life **< 120 days**
☐ BETA-GAMMA Emitters
☐ ALPHA Emitters or Mass>204

DOES THIS PACKAGE CONTAIN ANY "RADIOACTIVE MATERIAL" LABELS? **Circle one: Yes No**

I certify under penalty of law that to the best of my knowledge this information is accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility for fine and imprisonment.

Name of Responsible User (print): _____

Prepared by: _____ Ready/Online Request Date: _____

RADIOLOGICAL HEALTH USE ONLY:

Acceptance Date: _____ By: _____

☐ **C**ompacted ☐ **S**tored in bin ☐ **E**mptied into bulk jug
☐ **B**iostabilized ☐ **S**tored in freezer ☐ **A**bsorbed or Solidified
☐ **C**rushed vials ☐ **S**tored on shelf ☐ **O**ther _____
☐ **S**ealed source Inv#(s)_____

Weight of bag: _____ kg

Container #: _____

Process Date: _____ By: _____

☐ Shipped drum ☐ Released to EH&S ☐ Released to CMC
☐ Released liquid _____ mCi ☐ PH level
☐ Released solid short-lived ☐ _____ µCi/gm

Maximum Exposure Rate at Contact: _____ mR/hr

Survey Instrument ID: _____ Calibration Date: _____

Disposal Date: _____ By: _____

RPR 13E (12/10)

Generator Copy

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_____	_____	µCi mCi
_____	_____	µCi mCi
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RPR 13E (12/10)

Radiological Health Copy

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_____	_____	µCi mCi
_____	_____	µCi mCi
_____	_____	µCi mCi

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RPR 13E (12/10)

Container Copy

This sticker is placed on packages of radioisotopes after they have been surveyed to inform personnel at the receiving dock that the package may be delivered to the user. Receiving personnel are instructed **not** to deliver a package unless it bears this sticker with signature and date entered. The sticker is printed on self-adhesive, fluorescent chartreuse paper.

ACCEPTABLE FOR DELIVERY

By:_____ Date: _____

Radiological Health Department (801-581-6141) RPR 13F (12/2010)