

Instructions for Obtaining Authorized User Status for Use of Radioactive Materials.

The application process has been substantially revised. Therefore, please do not copy an authorized user's application from a previous year. It would serve a new applicant well to discuss his or her intent with either the Radiation Safety Officer or the Assistant Radiation Safety Officer before starting to complete the paperwork.

New faculty members are asked during the General Safety presentation if they intend to use radioactive material. If so, they are given an application package. Alternately, you can contact the Radiation Safety Office (RSOF) and arrange to pick the packet up at the Office.

The packet contains an application checklist for the primary items subject to review by the Radiation Safety Committee the approval of which is required before radioactive material may be used. The checklist accurately identifies the items that will be scrutinized. Therefore, adhere to it in developing an application.

There is a set of forms to be completed as listed on the checklist. A new set of forms, replacing those in the Radiation Safety Manual, is included as pages 9 through 16 of this handout. The Safety Manual contains specific information necessary to provide the details required in the Specific Procedures (experimental protocol) Section of the application. Examples of experimental protocols are included in this document.

Please call the Department Assistant for Radiation Safety at x2906 for the date of the next scheduled Radiation Safety Committee Meeting. **The completed application is to be returned to the RSOF no later than 2 weeks prior to this date.** The Department Assistant for Radiation Safety will record receipt and pass the package to the Assistant Radiation Safety Officer who will contact you to inform you if the package seems acceptable or if specific changes are necessary.

First-time applicants at CWRU are required to meet with the Radiation Safety Officer to discuss the application in more detail. The Radiation Safety Office will contact you to arrange an appointment at mutual convenience for you and the Radiation Safety Officer.

When any needed changes are complete, the application is put on the agenda for the next monthly Radiation Safety Committee meeting. You will be informed immediately of the Committee's decision, which may require that you incorporate some minor corrections. If so, these are to be made in the final version of the proposal, since the proposal will be used in your laboratory to provide detailed directions to personnel who use the radioactive material it authorizes. Upon receipt of the final proposal by the RSOF, a letter of approval will be sent to you by the Radiation Safety Officer authorizing use and purchase of the requested isotopes.

Complete responses on the Nuclide Request Form and its corresponding nuclide specific protocol description are particularly important since the Radiation Safety Committee will scrutinize these. One Nuclide Request Form must be submitted for each nuclide requested. The Committee's intent is that you produce a working document for use in your laboratory that gives clear, explicit directions to laboratory personnel such that they can perform the experiment described in a radiologically safe manner.

Guidance to the Applicant

Complete all of the seven forms that are applicable. (The Sealed Source Form 4 and the Animal Application Form 6 are usually non-applicable.) Be sure to provide any required signatures. **If this is an amendment to an existing application, please call the Assistant Radiation Safety Officer to find out which forms need to be completed.**

Note that Form 7, the Standard Laboratory Operating Procedures Form, is prepared for you to simply complete. You are to review the conditions for each of the 13 headings and enter a check mark indicating your acceptance of the specific requirements, or check the "other" box and attach a description of your alternative to the standard requirements. (It would be unusual for anyone to make such modifications.) Please be sure to enter your name, department, signature and date in the appropriate places.

There must be a protocol provided for each Nuclide Request Form. The purpose of the Experimental Protocol written for the purpose of obtaining approval for radioisotope use by the Committee is NOT the same as one you would write in your laboratory notebook! (DO NOT USE A COPY OF A DETAILED LABORATORY PROTOCOL.) What is expected is clearly described in the following section that provides several examples.

The last item required in your application is a detailed radiation/contamination survey map of the area where the radioactive material is to be used and stored. A sample map and associated survey data sheet are provided following the series of forms. There is no need to produce a computer-generated drawing. However, you are expected to provide information equivalent to what is shown in the example. Identified items must include:

- every piece of laboratory equipment that may become contaminated
- non-radioactive work areas within the laboratory (to assure they are clean)
- every location where radioactive material either is used or stored
- storage unit handles (refrigerators, freezers, etc.)
- the radwaste storage area(s)
- floor areas throughout the laboratory, including locations at points of entrance/egress.

Items on the map are to be labeled with numbers corresponding to the entries on the survey data sheet. The data sheet must provide a descriptor for each numbered location. It is suggested that major items also be labeled on the map. (Do not use personal names such as "Victor's bench.")

Note that page numbers for this document are given in the upper right hand corner. However, for convenience of review by the Committee, please enter sequential page numbers in the lower right hand corner of the application, as you assembled it for submittal.

The following list identifies items, frequently overlooked, that will expedite approval of your application. **These deserve your meticulous attention:**

- **All relevant forms must be completed and signed as indicated on each one.**

- **All boxes on Form 7 must be checked (unless you describe an alternate) and the form must be signed.**
- **The survey map must include all items and areas that may become contaminated, including floor areas both near RAM use locations and at doorways.**
- **A survey data form accurately keyed to the survey map is essential.**
- **Choose your requested radioactive material possession limit (Item 2.c on Form 3) to assure sufficient margin to facilitate ordering. We recommend generally at least twice your estimated individual order amounts (Item 2.b).**
- **Assure your and all your worker radiation safety training is current.**

Examples of Experimental Protocols

The purpose of an experimental protocol written as part of the application is to assure personnel radiation exposure and the probability of contamination are minimal. The protocol should be concise, one or several paragraphs in length. It should address the following.

- **the isotope used.**
- **a brief statement of the purpose of the experiment.**
- **the chemical form and total amount of isotope to be used in each experiment,**
- **shielding as necessary.**
- **any laboratory equipment used in the experiment that may become contaminated. (Note that this equipment should be included on the survey map.)**
- **whether it is possible for the material to become volatile during the experiment. (Volatility information is available from the RSOF.) If so, how will release or personnel exposure be controlled.**
- **any radioactive wastes generated during the experiment**
 - **whether chemical hazards will be present**
 - **the disposal methods**
 - **if possible, estimates of the activity and volume of each type of waste that will be generated.**
- **is transport between laboratories required? If so, describe how this will be done.**
- **any special security considerations.**

Volatilization of S-35 compounds is always a focal issue in protocol review. During thawing of frozen material pressure may buildup in a vial. Volatile decomposition products may be generated during storage that will be released upon opening the vial. Therefore such vials should be vented in a fume hood through a simple charcoal trap. For in-vivo labeling experiments in which an incubator is used, an empty 100 ml pipette tip tray is very convenient to contain the charcoal.

Sample Experimental Protocols

DNA sequencing

DNA sequencing will be used to verify the sequences of clones isolated as part of the cloning projects in the lab. Approximately 5.0 μCi of [^{35}S]-dATP is used for each set of DNA sequencing reactions and a typical experiment will consist of 10 sets of reactions for a total of 50 μCi of [^{35}S]-dATP per experiment. These reactions will be conducted in microcentrifuge tubes using bench top water baths set at 37°C under conditions in which volatilization of this isotope will not occur. Following incubation, the reactions will be briefly spun in a microcentrifuge and a formamide loading buffer will be added to each set of reactions. Approximately 1/3 of each reaction (total 16.6 μCi) will be loaded on a polyacrylamide sequencing gel. Following electrophoresis, the gel will be dried and placed in a film cassette for autoradiography.

Radioactive wastes generated during this procedure include contaminated microcentrifuge tubes and pipette tips that will be disposed of in the radioactive dry solid waste and stored for pickup by the RSOF. Gel running buffer will be counted to determine the appropriate disposal method. If the total amount of ^{35}S in this buffer contains greater than 7 μCi , the buffer will be stored as liquid radioactive waste and held for pickup by the RSOF. If less than 7 μCi is present in the buffer, it may be disposed of as sewer waste in a designated sink provided the combined amount of ^{32}P and ^{35}S sewer waste does not exceed the 7 μCi per day limit. A log of all sewer disposals will be kept. Radioactive polyacrylamide gel waste will be disposed in containers for acrylamide waste and stored for pickup by the RSOF.

Northern /Southern Analysis

Northern hybridization analysis will be conducted to detect levels of gene expression. ^{32}P -labeled nucleic acid probes will be made in small reactions (usually 10-50 μl) containing buffers, DNA polymerase, and 50 μCi of [^{32}P]-dNTP. Incubations are carried out in a shielded 37°C water bath. During this reaction, >90% of the label will be incorporated into the probe and unincorporated label will not be removed prior to use in hybridization. For hybridization, ^{32}P -labeled probes (20-50 μCi) in aqueous solution are incubated in heat-sealed bags with nucleic acids that have been immobilized on filters. To prevent contamination of water baths, double bags will be used and placed in sealed plastic containers. Incubations will be done overnight at 37-65°C in a marked shaking incubator. Unhybridized, labeled probe will be poured off into the liquid radioactive waste, followed by a brief rinse in a minimum amount of wash buffer that will also be discarded into the liquid radioactive waste. This results in the removal of the majority of the radioactive material from the membrane (>90%). The filters are then washed with dilute salt solutions until the background on filters is low. Following counting, these wash solutions will be disposed of as sewer waste in a designated sink if they contain less than 7 μCi , provided the combined amount of ^{32}P and ^{35}S sewer waste does not exceed the 7 μCi per day limit. A log of all sewer disposals will be kept. The filters will be dried, placed in a film cassette for autoradiography and ultimately discarded in the dry-solid radioactive waste. All other radioactive wastes generated in this procedure, including pipette tips, hybridization bags, and filters will be disposed of in a shielded dry solid radioactive waste container and held for pickup by the RSOF.

RSOF/RSC application checklist for _____ Date: _____

[This form will be used by the Radiation Safety Office to review your application and is provided as a convenience to you. Do not submit this with your application.]

Forms

- Form 1 - General Information
- Form 2 - Training and Experience
- Form 3 - Nuclide Request Form (one for each nuclide)
- Experimental Protocol (one for each nuclide)
- Form 4 - Sealed Source Form (if needed)
- Form 5 - Laboratory Personnel List
- Form 6 - Animal Application Form (if needed)
- Form 7 - Standard Laboratory Operating Procedures Form

**Nuclide Specific Items (See Nuclide Request Forms and Experimental Protocols)
(One for each nuclide.)**

- Nuclide Activities (per order/ possession limit) Chemical/Physical form
- Shielding Lab equipment identified Volatility Waste identified
- Disposal methods Isotope storage/security Waste storage location
- RAM transport Bioassay

Rev. 4/14/99 **V = OK** **X = not needed** **O = missing/incomplete**

**CASE WESTERN RESERVE UNIVERSITY
APPLICATION FOR NON-HUMAN USE OF RADIOACTIVE
MATERIALS (RAM)
GENERAL INFORMATION FORM**

Office use only: PLG No. _____ PI# _____

1. This application is new
 an amendment to an existing application

1. Name of Applicant: _____ SS#: _____
 Title: _____ Department: _____
 Laboratory Office: Building _____ Room _____
 Dept. Office (if different from above)- Building _____ Room _____
 Phone #'s- Office _____ Lab _____ FAX # _____ Email _____

2. Location of use and storage of Radioactive Material:
 Building: _____ Rooms: _____ Rooms: _____
 Rooms: _____ Rooms: _____ Rooms: _____ Rooms: _____
 Building: _____ Rooms: _____ Rooms: _____
 Rooms: _____ Rooms: _____ Rooms: _____ Rooms: _____

3. Radiation Monitoring Devices
 Liquid Scintillation Counter Used:
 Manufacturer: _____ Model: _____ Serial #: _____
 Internal Std: _____ Activity: _____ Assay Date: _____
 Location: _____ Responsible AU: _____
 Gamma Counter Used:
 Manufacturer: _____ Model: _____ Serial #: _____
 Location: _____ Responsible AU: _____
 Hand Held Survey Meter: (owned by you)
 Mfg: _____ Model: _____ Serial #: _____ Probe: _____
 Mfg: _____ Model: _____ Serial #: _____ Probe: _____
 Check Source Available: Y N Type _____

(CHECK ONE) **I AM** / **I AM NOT** currently using radioactive materials on the University Hospital ODH license or a license held by another institution. I signify that I have read the Radiation Safety Manual issued by the Radiation Safety Committee of CWRU governing the use of radiation sources and radioactive material, and agree to comply with all applicable regulations.

APPLICANT _____ **DATE** _____
 Signature

**CASE WESTERN RESERVE UNIVERSITY
APPLICATION FOR NON-HUMAN USE OF RADIOACTIVE
MATERIALS (RAM)
TRAINING AND EXPERIENCE FORM**

Office use only: PLG No. _____ PI# _____

1. Name of Applicant: _____

2. Previous Training Record:
 - a. Principles and practices of radiation protection:
Location: _____ Duration: _____ Hrs
 - b. Radioactivity measurement, standardization, monitoring, and instrumentation:
Location: _____ Duration: _____ Hrs
 - c. Math and calculations basic to the measurement of RAM:
Location: _____ Duration: _____ Hrs
 - d. Biological effects of radiation:
Location: _____ Duration: _____ Hrs
 - e. Participated in CWRU Radiation Safety Course? Y N

-
3. Previous experience with Radioactive Material:
 - a. Nuclide: _____ Quantity: _____ mCi experiment
Type of experiment: _____
Location: _____ Duration: _____ Yrs
 - b. Nuclide: _____ Quantity: _____ mCi experiment
Type of experiment: _____
Location: _____ Duration: _____ Yrs
 - c. Nuclide: _____ Quantity: _____ mCi experiment
Type of experiment: _____
Location: _____ Duration: _____ Yrs
 - d. Nuclide: _____ Quantity: _____ mCi experiment
Type of experiment: _____
Location: _____ Duration: _____ Yrs

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4. Where previously licensed for the use of radioactivity:
Location: _____ Duration: _____ Yrs
Location: _____ Duration: _____ Yrs

APPLICANT _____ DATE _____
Signature

**CASE WESTERN RESERVE UNIVERSITY
APPLICATION FOR NON-HUMAN USE OF RADIOACTIVE
MATERIALS (RAM)NUCLIDE REQUEST FORM
(USE ONE FORM FOR EACH NUCLIDE REQUESTED)**

Office use only:
PLG No. _____ PI# _____

1. Name of Applicant: _____
(Consult the Authorized User section of the Radiation Safety Manual for instructions on completing the following sections.)

2. a. Radionuclide: _____
b. Estimated to be ordered per shipment: _____ mCi
c. Maximum to be possessed at any one time: _____ mCi
(The possession amount should be at least twice the amount ordered per shipment.)

3. Chemical Compounds or Physical Forms:

4. Isotope storage/security (Lab location/how secured):

5. Waste storage location: (Room number): _____
6. Shielding requirements: _____
7. Bioassay requirements: _____

APPLICANT	DATE	DEPT. CHAIRPERSON	DATE
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FOR RSOF USE ONLY

APPROVAL			
RSO	DATE	CHAIRPERSON RSC	DATE
RSC MEMBER	DATE	RSC MEMBER	DATE
RSC MEMBER	DATE	RSC MEMBER	DATE
RSC MEMBER	DATE	RSC MEMBER	DATE
RSC MEMBER	DATE	RSC MEMBER	DATE

**CASE WESTERN RESERVE UNIVERSITY
APPLICATION FOR NON-HUMAN USE OF RADIOACTIVE
MATERIALS (RAM)
REQUEST FOR USE OF A SEALED SOURCE**

Office use only: PLG No. _____ PI# _____

1. Name of Applicant: _____

2. Sealed Sources:
 - a. Radionuclide: _____ Form: _____
 Activity: _____ mCi Assay Date: _____
 Serial number: _____
 Location: Building _____ Room: _____

 - b. Radionuclide: _____ Form: _____
 Activity: _____ mCi Assay Date: _____
 Serial number: _____
 Location: Building _____ Room: _____

 - c. Radionuclide: _____ Form: _____
 Activity: _____ mCi Assay Date: _____
 Serial number: _____
 Location: Building _____ Room: _____

Sealed sources require biannual leak testing for activities greater than 100 μ Ci, and quarterly checks on alpha sources which utilize the alpha emission directly. These leak tests must be able to detect contamination at the 0.005 μ Ci level and are carried out by the RSOF.

APPLICANT	DATE	DEPT. CHAIRPERSON	DATE
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FOR RSOF USE ONLY			
APPROVAL			
RSO	DATE	CHAIRPERSON RSC	DATE
RSC MEMBER	DATE	RSC MEMBER	DATE
RSC MEMBER	DATE	RSC MEMBER	DATE
RSC MEMBER	DATE	RSC MEMBER	DATE
RSC MEMBER	DATE	RSC MEMBER	DATE

**CASE WESTERN RESERVE UNIVERSITY
APPLICATION FOR NON-HUMAN USE OF RADIOACTIVE
MATERIALS (RAM)
APPLICATION FOR USE OF RADIOISOTOPES IN ANIMALS**

Applicant: _____ Office Telephone No: _____

Title: _____ Department: _____

Animal species to be used (check one):

Mouse rat cat dog other: _____

Description of isotope(s) physical and chemical form (Circle as appropriate):

1. **H-3** **C-14** **P-32** **S-35** other: _____

2. **solid** **liquid** **gas** Chemical form: _____

Amount administered per animal: _____ mCi/animal

Maximum number of animals to be housed on any given day: _____

Number of animals per cage: _____

Describe experimental protocol for the use of the radioisotopes:

1. Mode of administration: **intraperitoneally**
 per oral
 subcutaneous
 intra dermal
 other _____

Room where administration will take place: _____

2. Housing - Where will the animals be held following administration of the isotope? _____

3. On a separate sheet describe the elimination of radioactivity from the animal. (Provide support from your data indicating the need for monitoring is non-existent or plan to monitor the elimination of the radioactivity in the feces, urine, or breath from the animal.)

4. Duration of animal housing **post** administration of the radioisotope: _____ days.
5. Monitoring should take place during and after administration of the radioisotope. Provide a brief description of how the following will be monitored for contamination.:
 - a. personnel
 - b. surgical tools
 - c. bedding
 - d. cages
 - e. cage area
 - f. animal carcass or tissue
6. Labeling and posting of area [cages and work area, door into room]:
7. Describe disposal or decontamination procedures for:
 - a. animal carcass
 - b. bedding or excreta
 - c. cage

**CASE WESTERN RESERVE UNIVERSITY
APPLICATION FOR NON-HUMAN USE OF RADIOACTIVE MATERIALS
STANDARD LABORATORY OPERATING PROCEDURES**

Applicant _____ Department _____

SURVEY FREQUENCY

as listed below other - see attached

All laboratories containing radioactive materials must conduct documented contamination surveys monthly.

If more than 200 μCi are handled during a procedure, then either a post-experiment or a weekly survey must be documented.

SURVEY METER USE

as described below other - see attached not applicable

Confirm the survey instrument is appropriate for detecting the isotopes used.

Verify the survey instrument's calibration is current.

Perform battery check; replace if needed.

Test with operational check source if available.

Set meter to "fast" response with audio "ON" if available.

Remove all coverings from probe.

Hold probe close to surface and move slowly over surface during survey.

PERFORMANCE OF WIPE TEST

as described below other - see attached

Use filter paper or smears.

- Wipe 100 cm² area with gentle pressure.
- Count wipe with appropriate instrument.

CONTAMINATION SURVEY DOCUMENTATION

as described below other - see attached

Survey map with record form to include survey instrument (portable meter, LSC, or gamma counter) information, signature of surveyor and date performed.

Record probe results in dpm, wipe results in dpm/100 cm².

Decontaminate contaminated areas, re-survey, and document final results.

Inform AU of any contamination.

Keep records accessible for inspection.

REMOVABLE CONTAMINATION LIMITS

as listed below other - see attached

Decontamination is immediately required if the following levels of contamination are found:

220 dpm/100 cm² for all beta/gamma except H-3, C-14, S-35

• 2200 dpm/100 cm² for H-3, C-14, S-35

In practice, any contamination readily distinguishable from background should be removed from work areas.

PACKAGE RECEIPT

as listed below other - see attached

Wear Personnel Protective Equipment (PPE).

Open packages of volatile materials in a fume hood.

Document all probe and wipe results as required on the package receipt form.

Notify RSOF if contamination identified.

Deface all radioactive labeling before discarding uncontaminated packaging as non-radioactive waste.

Retain completed package receipt form in lab radioactive materials notebook.

STORAGE AND SECURITY OF RADIOACTIVE MATERIAL (RAM)

as described below other - see attached

Labeling of all storage units (freezer, refrigerator, or cabinet) shall be in accord with requirements as stated in the Radiation Safety Manual.

Radioactive material (RAM) shall be secured from unauthorized access at all times.

Any time RAM is left unattended by an authorized user, a locked barrier shall prevent unauthorized access.

RADWASTE DISPOSAL AND RECORD MAINTENANCE

as listed below other - see attached

Liquid wastes have double containment.

Suitable containers available for all waste.

Biohazard waste sterilized.

Pipettes and pipette tips should be placed in a rigid container.

Segregate by isotope, type (solid, liquid, scintillation vials, sharps, and gels), and hazard class.

Sewer limits in accord with Radiation Safety Manual requirements, unless an explicit exemption is requested. Liquids disposed via the sewer must not contain regulated chemicals. The pH should be between 6 and 8.

less than or equal to 20 μ Ci/day for C-14 and H-3, EACH.

less than or equal to 7 μ Ci/day for all other isotopes (e.g., P-32, S-35), combined.

Log all sewer disposals to include isotope, activity and date.

Retain sewer disposal log for inspection.

Maintain inventory records showing all waste disposal.

PERSONNEL DOSIMETRY

as listed below other - see attached

Each individual likely to receive a measurable radiation dose will wear personal dosimetry.

Whole body and, if appropriate, extremity dosimeters will be worn whenever working in the laboratory.

Dosimetry will be worn and stored as described in the Radiation Safety Manual. Female workers shall be informed on their right to monthly fetal dose monitoring by submitting a Pregnancy Declaration Form to the Radiation Safety Office.

SAFE WORK PRACTICES

agree and will enforce those listed below

Do not eat or store food in lab areas or near RAM-labeled equipment.

Do not apply cosmetics or lotions in laboratory areas.

Use RAM work areas that are as small as practical.

Wear appropriate protective clothing (e.g. gloves, lab coat).

Work with volatile materials in an operable fume hood.

Do not mouth-pipette.

Leave a survey meter on within arms reach when working with RAM when appropriate to provide frequent contamination checks of yourself and equipment.

Survey all waste items before placing into the trash; then place into the appropriate trash container.

Do not compact waste into bundles before disposal.

INCIDENT RESPONSE

as described below other - see attached

Minor Spill - a spill that remains contained, that you can easily, effectively contain and cleanup without assistance from the Radiation Safety Office and that does not involve personnel contamination. Decontaminate and verify that all contamination is removed.

Major Spill - a spill that involves personnel contamination or results in contamination outside of the intended work area, and that cannot be promptly cleaned up. Immediately notify RSOF of a major spill.

DECONTAMINATION PROCEDURES

as described below other - see attached

The following items will be accessible for decontamination:

liquid soap in squirt/spray bottle
absorbent paper towels and rad waste bags
appropriate PPE to include gloves and lab coats
radioactive warning tape
survey meter and wipes/smears.

Contaminated Skin

- Wash with mild soap and running water (or wet towels).
- Do not abrade skin.
- Survey after each washing and drying.

Notify RSOF if any skin contamination remains

Contaminated Clothing

- Remove the contaminated clothing carefully to avoid or minimize contaminating the skin.

Check the skin for possible contamination.

Notify RSOF

Floor Contamination

- Secure access to general area.

Define boundary of contaminated area.

Check for personnel contamination.

If a major spill, notify RSOF.

If a minor spill, decontaminate. Use a spray cleaning solution and wipe up with paper towels or other absorbent material to remove contamination. Be careful not to flood the area with cleaner since that will wash contamination into cracks, making it harder to remove.

Equipment Contamination

If contamination removable, decontaminate to comply with contamination limits.

If fixed contamination remains, label equipment with isotope, activity and date.

Contact RSOF if assistance required.

EMERGENCY RESPONSE PROCEDURES

as described below other - see attached

For any situation perceived as an emergency involving radioactive materials, notify the Radiation Safety Office at **(368-2906)** during office hours (8:30 a.m. - 5:00 pm) or Security (368-3333) after hours. Fire and Medical emergencies should be directly referred to security at (368-3333) at all times. They will coordinate emergency response communications and notifications with hospital, ambulance, and fire personnel.

Fire or Medical Emergencies

- If practical, secure radioactive material.

Follow CWRU emergency response procedures.

Inform Security if radioactive material involved.

Call RSOF (confirmatory).

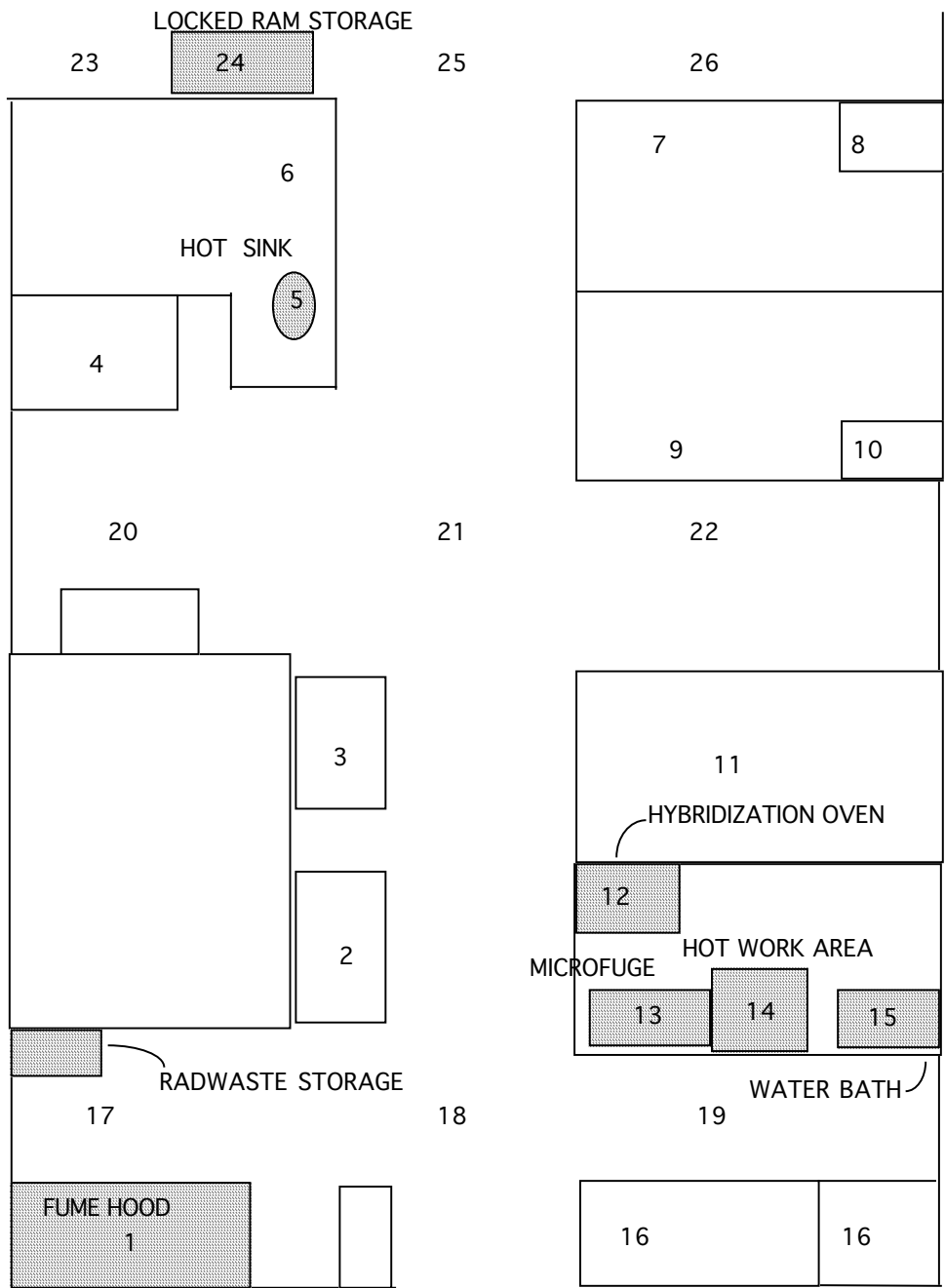
I will abide by these procedures to implement safe use of radioactive materials in compliance with regulations as communicated by the Radiation Safety Office.

Printed Name

Signature

Date

FORM 7-4



SAMPLE SURVEY MAP

#	Location	Probe, cpm	Probe Activity, dpm *	Wipes, net cpm	Wipe Activity, dpm/100 sq cm
1	Fume Hood				
2	Freezer, In/Out				
3	Refrigerator, In/Out				
4	Table				
5	Sink				
6	Counter				
7	Bench				
8	Desk				
9	Bench				
10	Desk				
11	Bench				
12	Hybridization Over				
13	Microfuge				
14	Hot Work Area				
15	Water Bath				
16	Bench and Desk				
17	Floor				
18	Floor				
19	Floor				
20	Floor				
21	Floor				
22	Floor				
23	Floor				
24	Freezer, In/Out				
25	Floor				
26	Floor				

√ = Indistinguishable from background

* dpm = (cpm - bkg) / efficiency

Surveyed by: _____ Date: ___/___/___

Handheld Meter/Probe Information:

Make: _____ Model: _____ SN: _____ Cal Due Date: ___/___/___

Probe type: GM NaI Other Model: _____ SN: _____

SAMPLE SURVEY DATA SHEET