# APPLICATION TO USE RADIOACTIVE MATERIALS

RADIATION SAFETY OFFICE
WASHINGTON STATE UNIVERSITY
Mail Code 1302
Telephone 335-8916

*Complete this application, obtain approval from an authorized user for the facilities you plan to use, and submit the application to the Radiation Safety Office at mail code 1302. See S90.20.*

WSU1157-RADS0002-0504

1. **This application is a:**

☐ New Application ☐ Renewal ☐ Amendment

| For renewals and amendments, enter the date the current authorization expires. | Indicate Type of Use:<br>☐ Experimental use of unsealed radioactive materials<br>☐ Use of sealed radioactive sources (complete spaces 1-6, 8-9, 12-14) |
|---|---|

| 2. Name | WSU ID Number * | Office Telephone |
|---|---|---|
| | E-Mail Address | Lab Telephone |

| 3. Department | Mail Code | Office Building and Room Number |
|---|---|---|
| | | |

***** If no WSU ID number exists, the applicant is to use one of the following identification numbers, listed here in order of priority: (1) passport number, **or** (2) work permit number, **or** (3) six-digit number assigned by the Radiation Safety Office (RSO).

4. **Education, Training, and Experience** (Required for all authorizations.)

| University or Other Institution of Higher Education | Degree and Field | Dates Attended |
|---|---|---|
| | | |

| Type of Other Training | Training Locations | Training Dates | On the Job? | | Formal Courses? | |
|---|---|---|---|---|---|---|
| | | | Yes | No | Yes | No |
| Principles and practices of radiation protection | | | | | | |
| Radioactivity measurement and standardization | | | | | | |
| Radiotracer use | | | | | | |

**Radiation Safety Office Training** If you have received radiation safety instruction from radiation safety office personnel, specify the institution and dates of training.

| | TRAINING DATES |
|---|---|
| WSU Radiation Safety Course (required) | |
| Other Institution (specify) | |

**Describe your experience working with radioactive isotopes.**

| Isotope | Maximum Amount | Where was experience gained? | Dates of Experience | Type of Use |
|---|---|---|---|---|
| | | | | |

5. **Radioisotopes to Be Used:** List the following information for each isotope to be used in your research.

| | Isotope A | Isotope B | Isotope C | Isotope D |
|---|---|---|---|---|
| Isotope to be used | | | | |
| Half-life | | | | |
| Major radiations emitted | | | | |
| Activity used per experiment | | | | |
| Number of experiments per month | | | | |
| Frequency of order (mCi/mo) | | | | |
| Chemical form (or physical, if sealed source) | | | | |
| Approximate specific activity | | | | |
| Possession limit (total activity [mCi]) | | | | |

6. **If amendment is requested, indicate the changes from your previous authorization.**

7. **Description of the Experiments (complete for unsealed radioactive materials):** Briefly describe the experiments involving the isotopes. Include activity level and types of radioactive compounds produced. Include experimental procedures in general use in your laboratory.

8. **Date** you plan to begin work with radioactive material.

9. **Sealed Source Information:** Provide details on the type and activity of the sealed source, proposed use, manufacturer, and model number. Attach a schematic diagram in instrument and source. Provide building location where the source will be stored. Indicate if the instrument will be used in the field.

10. **Special Hazards:** Check below if you will be using hazardous procedures involving radioisotopes.

Yes ☐ No ☐ Does the experiment involve production or use of **radioactive gas**? If yes, indicate which gas is generated, approximate specific activity, and special precautions taken to protect experimenters. Attach a detailed safety analysis including concentrations in restricted area air (the laboratory) and unrestricted area air (outside the building). Provide a discussion on methods of reducing emissions. Describe special facilities or equipment in Item 13.

Yes ☐ No ☐ Does the experiment involve **alpha particle emitters**? If yes, describe activity levels, chemical forms expected to be generated, etc. In Item 13, describe special equipment used for containment. Attach a detailed separate safety analysis for the experiment.

Yes ☐ No ☐ Does the experiment involve **potential explosives** or reactions carried out that may result in explosions? If yes, describe explosives or reactions and indicate amounts, etc. In Item 13, describe specific equipment and procedures used to minimize explosive hazards. Attach a detailed safety analysis for review.

Yes ☐ No ☐ Does the experiment involve the use of a radioisotope that concentrates in a specific **organ of the body**, such as the bone or thyroid, e.g., $^{32}P$, $^{35}S$, $^{90}Sr$, $^{125}I$, $^{131}I$? Attach a detailed safety analysis and indicate isotope, chemical form used, special precautions taken to minimize human contact, bioassay requirements, and any special shielding needed.

11. **Radiation Detection Instruments:** Specify all the survey and monitoring instruments available in your laboratory.

| Manufacturer | Model Number | Serial Number | Location of Use | Radiation Detected | Sensitivity Range | Window Thickness | Use |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

12. **Laboratory Personnel:** List all of the people (include yourself) who will be working in your laboratory for whom you will be responsible in your capacity as the Authorized User. Include the person's name and the month and year he or she completed the Radiation Safety Course. Each person must complete the WSU Radiation Safety Course. Each person listed must have or obtain a personnel monitoring device. See S90.65. Attach completed Personnel Monitoring Device application forms to this application for individuals who do not currently have a personnel monitoring device. For amendments, include applications for personnel not previously listed.

| Name | Radiation Safety Course Date Completed | Monitoring Device? | | Name | Radiation Safety Course Date Completed | Monitoring Device? | |
|---|---|---|---|---|---|---|---|
| | | Yes | Application Attached | | | Yes | Application Attached |
| | | | | | | | |

13. **Facilities:** Describe the location (building and room number) and the facilities in which you will be using radioactive materials or sealed sources. Provide a diagram of the laboratory floor plan and indicate benches, hoods, storage, and waste storage areas for use of radioactive isotopes. Describe appropriate shielding to be used for $\beta$ and $\gamma$ emitters, indicating type and amount of shielding in experimental areas, including personnel in adjoining laboratories. Indicate those areas subject to the greatest risk of contamination.

- If you will be using alpha-emitting isotopes or any hazardous procedures, indicate special facilities, e.g., glove boxes or explosion chambers, that will be used in the research.
- If live animals will be used, describe the facilities and procedures which will ensure that all wastes will be collected.
- For amendments, list all facilities in use. Address all applicable provisions listed in Item 10, i.e., for location changes provide a diagram, describe shielding, etc.

14. **Radioactive Waste:** Fully describe the type and composition of radioactive waste generated, the method of collection and storage required, the activity of each waste type generated each month, the complete chemical composition of liquid waste (including the percentage of each component), any animal tissue and the amount generated and the type and number of sharp items used. If any discharges to the atmosphere or the sanitary sewerage system are involved, note those discharges specifically.

**NOTE:** Authorized users must describe completely the radioactive waste being generated, in order for the Radiation Safety Office to authorize the appropriate disposal method.

15. **Bioassays and Extremity Monitoring**

Yes ☐ No ☐ Will you or your staff be working with more than 0.1 mCi $^{125}$I or $^{131}$I in a given quarter? If yes, the individual is required to have a thyroid scan within 6 to 72 hours after use. Baseline thyroid scans are required before work begins. Call the Radiation Safety Office for appointment.

Yes ☐ No ☐ Will you or your staff be working with more than 100 mCi $^{3}$H in a month? If yes, the individual is required to have 3H urine assay within 72 hours after use. Call the Radiation Safety Office for an appointment.

Yes ☐ No ☐ Will you or your staff be handling more than 1 mCi $^{32}$P or $^{22}$Na or $^{59}$Fe or $^{60}$Co or $^{90}$Sr/$^{90}$Y or $^{131}$I or $^{137}$Cs/$^{137}$Ba, or more than 10mCi $^{51}$Cr or $^{125}$I in a week? If yes, list personnel working with these quantities.

16. **Signature:** The undersigned understands that this authorization is subject to the conditions specified by the Radiation Safety Committee and Washington state rules and regulations (*WAC* 246) and that the authorized user is responsible for compliance with such conditions by personnel working with radioisotopes under his or her supervision.

| Applicant Signature | Date |
|---|---|
| | |