

Radiation-Detection Instrument Registration

RSO Form 51 (11/04)

1. **Authorized Investigator (AUI)** _____ Date: _____

AUI# (if assigned) _____ Department _____ Phone: _____

2. Instrument Category

Check One:

- Count-Rate (CR) survey instrument - e.g. GM Survey, Scintillation survey
- GM Based Exposure Rate (EXP) instrument - e.g. Xetex, GM Dose Rate
- Ion Chamber (IC) survey instrument - e.g. Cutie Pie, Panoramic, Rad Owl
- Liquid scintillation counter (LSC) - e.g. Packard Tri-Carb, Beckman LS
- Sample-changing gamma counter (GC) - e.g. Beckman Gamma 4000
- Other radiation-detection instrument - e.g. MCA, gas-flow ion chamber, MDH

Check One:

- Portable
- Moveable Plug-In
- Fixed Location

3. Instrument Data

Readout Unit:

Manufacturer: _____

Approximate Age/Purchase Date: _____

Readout Range or Single Scale Range: _____

Readout Units: _____

Scale Multipliers: _____

Samples Held (for LSC, GC only): _____

Model: _____

Serial Number: _____

U.W. Inventory #: _____

Alternate I.D. #: _____

Alternate I.D. Type: _____

Detector Unit:

Type (Check One): GM NaI ZnS LSC Ion Chamber Other _____

Manufacturer: _____ Serial Number: _____

Model: _____ Radiation Detected: _____

Describe your use of this instrument:

4. Location of Use or Storage

Building: _____ Room: _____

5. Contact Information

Name _____ Phone # _____ Email _____

6. Calibration of Instrument

Instrument was last calibrated on: _____

Instrument is normally calibrated by (check one):

- UW Radiation Safety Office
- Owner of instrument (you MUST attach your calibration procedures)
- Outside service group or consultant: Name of outside group: _____

Address: _____

Telephone: _____

INSTRUCTIONS FOR FILLING OUT RSO FORM 51

1. Authorized Investigator (AUI)

Fill in your name, department, and phone number. Include your Authorization Number, if you have been assigned one. Enter the date you are filling out this form.

2. Instrument Category

Count-Rate (CR) Instrument: A CR is a counter with Geiger-Mueller (GM) tube detectors, NaI scintillation detectors (for I-125), or ZnS scintillation detectors (for alpha particles). This can be a portable hand-held unit or bench top plug-in unit.

Dose-Rate/Ion Chamber (IC) Survey Instrument: An IC is used for measuring exposure rates from photons, using an ion-chamber detector. This can be a portable hand-held unit or bench top plug-in unit.

Liquid Scintillation Counter (LSC): An LSC is used to detect radioactivity in liquid solutions that contain a scintillant. Typical LSC instruments are made by Packard or Beckman. An LSC is usually a large, freestanding unit kept in a fixed location.

Sample-Changing Gamma Counter (GC): A GC is similar to an LSC in size and configuration, but is used to detect gamma photons, particularly from I-125 and I-131. A GC does not require that you put a special counting solvent in your sample. It is a fixed location unit.

Other Radiation Detection Instruments: Less common instruments used at the UW include multi-channel analyzers, gas-flow proportional counters, and x-ray monitors.

3. Instrument Data

Readout Unit: This is the part of the instrument that shows you a number. It may use a dial or meter, LCD display, LED display, or some other indicating device. The display will have maximum and minimum values, which may be modified by a scaling switch (e.g. a switch that multiplies the readout by factors of one or more of the following: x0.1, x1, x10, x100, x1000). The readout will be in terms of counts, counts per minute (cpm), milliRoentgens per hour (mR/hr), or other radiation units.

Detector Unit: This is the part of the instrument that intercepts radiation for the readout unit to measure and display. The detector unit may be a Geiger-Mueller (GM) tube, ion chamber, solid scintillator (such as NaI, ZnS or anthracene plastic), or liquid scintillation fluid (such as Aquasol, Econofluor, or Betacount). [There are additional types of detector units less commonly used at the UW.] The detector unit may be physically separate from the readout unit, or it may be enclosed inside the readout unit.

4. Location of Use or Storage

Enter the location where the instrument is normally found.

5. Contract Information

Enter the name, phone number, and email address of the individual responsible for knowing where the instrument is and for keeping its calibration current.

5. Calibration of Instrument

Fill in the date that the instrument was last calibrated. Also, check who calibrates the instrument. If the instrument is calibrated by an outside service group, include their name, address, and phone number. If you calibrate the instrument yourself, attach the procedure you follow to calibrate it.