

- Title** Radioactive Material Contamination Surveys for Researchers
- Purpose** Describes the method of surveying for radioactive contamination
- References** *ISU Radioactive Materials Safety Manual*
- Frequency** A radiation survey shall be performed by the radionuclide user at the end of each procedure involving radioactive material. If the procedure/process extends more than one day, a survey must be done daily.  
Examples: After using radioactive material from a source vial  
After handling radioactive samples  
After handling radioactive waste
- Equipment** Portable survey meter, liquid scintillation counter (LSC), gamma counter, or other appropriate counting system  
Wipes
- Notes** If H-3, S-35, or C-14 were used or processed, wipes must be taken and analyzed on the LSC. Meter surveys are not appropriate for those isotopes.  
All surveys must be documented  
*Radionuclide Storage and Usage Log* or other survey documentation log

#### **Hazard Control Measures**

Safety glasses, gloves, lab coat, closed toe shoes

#### **Procedure**

1. Determine the appropriate radiation detection instrument to use for your survey. A portable meter and/or wipes may be used, depending on the nuclide.
2. If using a portable meter, complete an operations check according to (link to website) before starting.
  - a. Move away from the source or work area and take a background reading. Record the background reading on the *Radionuclide Storage and Usage Log* or other survey documentation log.
3. If taking wipes, include a "blank" wipe as a background sample. This background sample will be used to calculate whether or not contamination is present.
4. Begin by completing a personnel survey. EH&S must be notified immediately if any personal contamination is found, whether on skin, clothing, or laboratory coat.

5. Survey the work area, including the floor. Survey the floor in exit doorways. If any waste was disposed, survey around waste containers.  
Other areas to consider for survey are:
  - a. Cabinet and drawer fronts and handles
  - b. Equipment
  - c. Fume hood sash
  - d. Refrigerator/freezer handles
  - e. Any other areas that you may have touched while working with the material
  
6. Document the survey on the *Radionuclide Storage and Usage Log* or other survey documentation log.  
The log should include the following:  
Date material used, amount (activity) used, survey date, survey /use locations, source check (ok or not ok), background, highest reading, and name/initials.
  
7. If wipes were taken, count the samples and background on the LSC, gamma counter, or other appropriate counting system.
  
8. Any area found to be greater than twice the background is considered contaminated. Perform the following:
  - a. Decontaminate the area immediately according to your procedures. See Section M of the Radioactive Materials Safety Manual for more information.
  - b. Resurvey the area
  - c. Document the resurvey
  - d. If an area cannot be decontaminated to less than twice the background, contact EH&S.

**NOTE** High background areas are difficult to survey with a meter. If using a meter to survey and the background is high because of nearby waste or other RAM, several options are available.

- Move or shield the material causing high background and continue using the meter to survey.
- Take a wipe of the area and move to a low background location to read the wipe with the meter.
- Or use another detection method, such as wipes analyzed on an LSC or gamma counter.