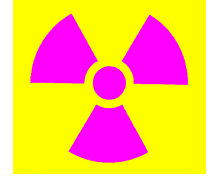


Radiation Safety Newsletter
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Welcome back!

Our second edition is loaded with information about how to do surveys in a way that will help identify contamination the first time, every time. If you have any comments or suggestions concerning these issues or any other in radiation safety, please contact David at 464-6510 or through Groupwise at saleriud@upstate.edu.



Are you as survey-savvy as this person?

GOOD SURVEY PRACTICES

The necessity of performing a survey during and after working with radioactive material is well understood; however, some workers either fail to do these surveys or do not perform them well. It is possible they forget. Perhaps they decide not to do a survey because they feel they are such careful workers. *They* would never cause or spread contamination. Some might feel rushed in the lab and do a poor survey.

Yet, even the most careful of people can have an accident or make a mistake. One good practice is to always perform a pre-work survey to verify there is no contamination before you start your experiment. This habit is especially beneficial in newer laboratory designs where the room itself is large and spaces are open.

A pre-work survey is also useful in rooms where more than one individual uses equipment. Monitoring your work area only takes a few minutes, but it can save hours in recovery operations and prevent possible data corruption for your experiment.

In 2003, a hospital was cited for a violation involving contamination at its facility. A \$3,000 fine was proposed. The inspector conducted a contamination survey after the hospital employees performed their regular daily survey. He found eight areas of contamination missed by hospital personnel and concluded there were deficiencies in the way surveys were conducted.

A proper, calibrated survey meter is required when performing a survey. Before using any survey meter, perform a preoperational check; look for physical damage, loose cables, and battery condition. The calibration sticker should not have expired.

Perform a meter survey first to determine any areas of likely contamination. Care should be taken to avoid contaminating the survey meter or its probe. Hold the probe about 1 cm from the surface and move the probe laterally at a rate of 2 to 5 cm/second. Listen to the audio response, if available, because the meter response may have a time delay of several seconds. A survey meter only indicates the presence of radiation. A wipe must be taken to determine if the contamination is loose or fixed.

Wipe an area of 100 cm² applying light pressure to the wipe material. For biomedical research and clinical use of radioactive material, suggested areas for performing wipes include: Door knobs, light switches, drawer handles, faucets, refrigerator and freezer door handles general use areas, (e.g. desks, computer stations, bench tops, floors at laboratory entrances), radioactive material use and storage areas, fume hoods, waste

containers, floors near work or storage areas and the inner surfaces of sinks and drains.

Try to decontaminate areas you have found using your survey meter or that have been identified by swipes. If you are unable to decontaminate for any reason, the area must be posted with an appropriate radioactive material warning label. The Radiation Safety Office needs to be alerted to such instances as soon as possible in order to ensure the most appropriate action for the situation is made.

CONTAMINATED VACUUM LINES

Contamination may be found in some unexpected locations. Therefore, thorough surveying is important. During a decommissioning survey of a laboratory that had used radionuclides for biomedical research, personnel from the institution's Radiation Safety Office detected radioactive contamination in a vacuum line. Luckily, the contamination was from a radioactive material that could be decayed in a reasonable amount of time and the laboratory was not undergoing immediate renovations. Otherwise, the contaminated section of piping would have to be removed and replaced with a new line at significant expense.

It is good laboratory practice to install a vacuum trap between the experiment and a vacuum source for any experiment that could result in contamination, radioactive or not, being carried into the vacuum system.

Filtering devices are available commercially. The figure below shows two common configurations. More elaborate systems may be required for volatile chemicals. It is recommended that any vacuum line used during radioactive material procedures be surveyed at the completion of a procedure or experiment. This should include a direct meter survey, if appropriate, and an indirect survey (i.e. wipe test) inside the house vacuum system. If contamination is detected in any of the following components, the Radiation Safety Office should be contacted:

- A) Collection flask,
- B) Overflow flask,
- C) In-line HEPA filter,
- D) House vacuum system

Two common vacuum-line setups:

