Service Building, First Floor (Office) 216-368-2906/2907 (FAX) 216-368-2236

Department of Occupational and Environmental Safety NEWSLETTER

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Radiation Safety : Incident Reporting and Waste Labelling

Incident Reporting

Incidents involving radioactive materials need to be reported to the Radiation Safety Office as soon as they occur or are discovered.

The types of immediately reportable incidents are:

(1) spills that leave the immediate containment area (e.g. spill tray)

(2) spills or incidents that involve personnel contamination or clothing contamination

(3) missing radioactive materials, whether they are shipments, stock solutions, samples, or waste.

This last issue it vital: any missing radioactive material of any quantity must be reported to the Radiation Safety Office immediately. For example, a recent incident occurred where waste was mistakenly picked up by the evening custodial crew. The lab worker delayed notifying the lab's AU and our office for two days since they did not think that the activity was high enough for concern.

Radioactive waste accidentally picked up by custodial staff is considered a serious mismanagement of material and its "loss" may be an NRC-reportable incident. To ensure that this type of incident does not reoccur, label waste receptacles appropriately (see related article below).

Radioactive Waste Labeling

All radioactive waste containers must be labeled with large yellow radiation trifoil symbols

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Waste Minimization Techniques

Minimizing waste in the laboratory is important for both economic and environmental reasons. The cost of disposing chemicals and other hazardous wastes has drastically increased, with some sites no longer even accepting certain wastes (such as those containing mercury). The need to minimize radioactive wastes is perhaps even more vital since there are very limited available sites for disposal.

Waste minimization also supports our campus' pledge to be as environmentally conscious as possible. One of the most effective ways to do this is to reduce the amount of waste being created: less waste to dispose of means less waste in circulation that can potentially damage our environment.

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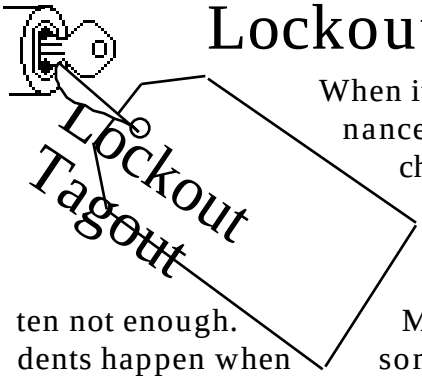
What WASTE!

Radiation (x2

Lockout / Tagout



When its time for maintenance, repairs or machine set-up, simply turning a machine off or unplugging it is often not enough. Many serious accidents happen when someone thought a machine or electricity was safely "off." Equipment that can store potential energy in any form that can cause individual harm—whether that energy is in the form of a taunt spring, stored electrical energy, or even hydraulic energy—must be locked and tagged out before any work is done on it.

"Lockout / Tagout" is a way to protect yourself (if you are doing the work) and others by dispersing that energy and insuring that the energy source is not accidentally reconnected while the machine is being worked on.

"Lockout" means blocking energy from the power source. A key or lock is used to secure the energizing valve or switch in the "off" position. "Tagout" refers to placing a tag on the power source to warn others not to turn on the power.

Most of you will not be doing machine set-up,

HOT TIPS

Waste Minimization Techniques

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Below are waste minimization tips for both chemical and radioactive waste. Try to incorporate some of these practices into your daily work routine. Remember: THINK LESS (waste, that is)!

Chemicals

For chemicals more than radioactive materials it is possible to create less waste before the experiment even starts. Examine your methods and materials before you begin:

• Purchase only what is needed. Do not order larger quantities to take advantage of unit cost savings—disposal costs down the road for the unused portion of the chemical greatly exceeds the initial savings. CWRU's new chemical store sells chemicals in smaller quantities to provide this sort of convenience.

• Pre-weigh chemicals for undergraduate teaching labs. This will reduce spills and other wastes generated by students weighing their own materials as well as increase laboratory productivity.

• Substitute less hazardous chemicals in experiments to reduce the cost of the disposal of hazardous chemicals. For example, use alcohol instead of benzene; use sodium hypochlorite instead of sodium dichromate.

• Use alcohol or digital thermometers instead of mercury thermometers, which break easily and are extremely expensive to clean up and dispose of.

There are also many post-experiment techniques available that allow you to reduce the amount of waste leaving your lab:

• When cleaning with solvents, use spent solvent for the initial cleaning and use fresh solvent only for the final rinse.

• DOES now has a still that can recycle many would-be waste solvents to near-pure form. Call our department (x2907) to see if your department creates such reusable waste. (see related article on p.2)

THINK LESS! THINK LESS! THINK LESS! THINK LESS! THINK LESS!

2. Communicate. Inform all those who need to know that a lockout/tagout procedure is taking place.
3. Identify all appropriate power sources, whether