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

Department of Occupational and Environmental Safety NEWSLETTER

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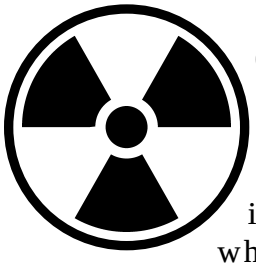
Special Radiation Training Session



On October 18th, the Radiation Safety Office will present a Radiation Awareness Training session designed for ancillary personnel, those who do not use radiation but work in its proximity in the lab. These types of workers—which includes housekeeping, secretaries or students—often have many questions about radiation use in the lab. If you are curious or have any concerns and would like more information about radiation safety on CWRU's campus, you are welcome to attend the session. It will also serve as an annual retraining session for those who require it.

This session is basically an awareness course about the use of radioactive materials. It informs personnel about the Radiation Safety Office, how it functions on campus, and the interactions, precautions and rules it sets out for the laboratories. It also explains the signs and labels that many personnel come across during the course of a day.

Most importantly, the course puts radiation risk into perspective, explaining the different types of radiation and carefully distinguishing between perceived dangers and the very low exposure rates that exist occupationally.

DOES encourages everyone who is concerned about or interested in radiation in the workplace to come to the session and be informed about these issues. It will be held on October 18th in the BRB, Room 15, from 12:00 - 1:00; call our office (x2906) to sign up.

Under Revision: the CWRU Safety Manual

The CWRU Chemical Safety Manual was developed to serve as the standard safety protocol document for the university as a whole. However, in compliance with the OSHA Lab Standard, each separate laboratory at CWRU must adapt and tailor that manual to the meet specific needs of that lab, creating a Chemical Hygiene Plan, or CHP. When the Safety Manual revision is complete, all PIs need to review it and re-tailor their lab's CHP accordingly.

The Lab Standard

One of the main tenants of the Lab Standard is the development and implementation of a Chemical Hygiene Plan, a set of written procedures designed to

(continued on p.3)

In This Issue:

What WASTE!

Package Receipt Protocol:

Disposing the Container

After receiving a package containing radioactive material, it is vital that it be fully surveyed and decommissioned before it is set out for trash. Making sure the package is "clean" is a standard step in package receipt protocols. In addition to decommissioning any packages, all labels remaining on the package must be defaced. We have received complaints that some packages have not been defaced when set out for trash.

Many of you are returning pre-addressed styrofoam containers to their respective companies. These containers must be ready to send back before you take them to the mailroom (in other words, they must be surveyed for any contamination and their labels must be defaced). We strongly encourage this practice of recycling styrofoam; since return postage is already included, it costs nothing to mail these back and it saves a lot of room in landfills. Mail these packages from anywhere you would normally send a package; the new campus mail room is located at the Cedar Service Building. Please do not drop them off at the old receiving dock.

If you have any questions about package receipt protocols or other waste disposal procedures, contact Radiation Safety at x2906.

HEY! BIKE RIDERS!

While bicycles are a great way to get around on campus, some consideration should be given to where they are parked and/or stored when not in use.

Some buildings have outside racks to which the bikes can be secured; unfortunately, many do not. Most people, therefore, prefer taking their bikes inside for security and weather reasons. However, classroom, administrative, and other buildings do not have provisions for this indoor storage, and by bringing your bike inside, you are potentially blocking the safe means of egress for that building.

Some of these "no-no" parking spots include: stairways, landings, corridors, and in front of doors. Bikes also cannot block or impede access to safety equipment such as fire extinguishers, fire hoses, alarm pull stations, or control panels. Bikes parked in these places will be removed--the lock will be cut and the bike will be confiscated and held by Security.

Blocking or impeding access to a means of egress or to safety equipment is a violation of the Fire Safety Code (NFPA standard #101) and state and local fire codes. Please don't park your bike where it would be in violation of these codes. If the building where you are going does not have a bicycle rack, park your bike at a building nearby, and petition the dean of your building to ask that a rack be installed at your own.

Upcoming Training Sessions

Radiation (x2906)

See article on page 1 for information on a Radiation Awareness Training Session (Oct. 18)

- **New Training:** Oct.15 (9-12), 24(1-4)
- **Retraining:** Oct. 8(2-3), 18(10-11), 29(2-3)
- **X-ray Training:** call office to set up training session

Chemical (x2907)

- **OSHA Lab Standard:** Mondays 1-3 (Adelbert Room 2)

Bloodborne Pathogen (x2907)

- **New Training:** Mondays 3-4 (Adelbert Room 2)
- **Retraining:** call office to reserve videotape

Under Revision: The CWRU Safety Manual

(continued from p.1)

protect employees from health hazards created by chemicals in a specific workplace. CWRU calls its CHP the Chemical Safety Manual (CSM). All investigators must adapt the CSM to their lab or create an approved one of their own.

As a universally comprehensive CHP, the CWRU Safety Manual is designed to provide for the protection of lab workers, staff, and associated personnel in a manner consistent with the OSHA Lab Standard. It covers about 95% of all lab procedures done on our campus: general policies, chemical safety and chemical waste, biosafety and biohazardous waste, human blood handling, and radiation safety. The small percentage of procedures not covered in the CSM can be found in separate documents.

A Lab-specific CHP

It is not enough, though, for a laboratory's PI to simply put the CSM out in the lab and do nothing more towards tailoring it specifically for that lab. While the CSM is comprehensive, it is intended only as a reference document from which labs should cull relevant information.

To successfully adopt the CSM, each PI should take out the sections of the CSM that are applicable to the lab, photocopy them, and put them in a separate binder labelled "Chemical Hygiene Plan." If the CSM does not contain a safety protocol that corresponds to a procedure done in your lab, you must create a safety protocol for that procedure and submit it to DOES for approval. After approval, that document too should be put into the binder.

Furthermore, it is the PI's responsibility to ensure that everyone in the lab knows:

1) where the binder is located,
2) what it contains, and
3) how to comply with the safety protocols therein.

Training sessions for unique situations exposing lab personnel to risk must be provided for your employees to make sure they know how to deal with any hazards they may encounter.

The Department of Occupational and Environmental Safety is available at all times for consultation. If your laboratory needs guidance in developing training programs or help in interpreting other safety-related issues, such as the selection of appropriate personal protective equipment or waste management, please call our office (x2907) for assistance.

HOT TIPS

Using 35S at High Temperatures

Although nucleotides that contain 35S in solution do not release volatile radioactivity at room temperatures, higher temperatures can cause the release of some volatile products. This can lead to contamination through airborne isotope releases during common procedures that involve high temperatures: for example, thermal cycle sequencing and synthesising nucleic acid polymers that contain 35S.

Therefore, investigators should run these procedures in a fume hood in order to aviod exposure to potentailly hazardous fumes. Surrounding surfaces should also be monitored for released 35S after these procedures.

A Reminder to Researchers

A vital part of the CHP is the designation of a Chemical Hygiene Officer (CHO) and proper signage indicating all emergency numbers. Make sure the emergency information on your laboratory doors lists the correct names and numbers of the Pricipal Investigator (PI) and the CHO (if it is someone other than the PI). If all listed personnel will not be available on temporary basis, post alternative contacts in these periods.

Eye Protection: A Little Means A Lot

On the average there are 1000 eye injuries throughout the country each day. Fortunately, 90% of all eye injuries are preventable with just minimal precautions.

We strongly encourage all laboratory workers to wear safety glasses while in the lab, especially when working on an experiment. Even if your job isn't very hazardous, eye injuries can result from a fellow worker's operation.

Since blindness can result from almost any eye injury, wearing eye protection should be part of your daily lab routine.

Choices, choices

Regular corrective eyeglasses do not offer the amout and scope of protection necessary in the lab. The proper protection varies, depending on the nature of the potential hazard. Each lab supervisor is responsible for creating a comprehensive eye safety protocol as part of the Chemical Hygiene Plan, determining when hazards exist and what protection is required.

Below are the most common forms of eye protection for in the lab.

Safety glasses. Many stores offer OSHA-approved safety glasses: clear wrap-around goggles that protect but do not impair vision. Make sure safety glasses are of an approved material and thickness. Separate side shields or wrap-around designs should be used to offer protection from objects approaching from the side.

Goggles. Often regular safety glasses do not offer adequate protection. The closed construction of goggles is needed to prevent chemicals from entering the eye. Wear goggles when there is danger of splashing chemicals (for example, when pouring caustic or toxic substances) or flying particles. Wear goggles when working with glassware under conditions that may cause it to break such as reduced or elevated pressure or high temperatures.

Face Shields. However, goggles do nothing to protect the face and neck. When there is a high danger of splashing chemicals or flying particles, a face shield is necessary. For full protection, wear safety glasses and a face shield.

Contact Lenses? Not in the Lab

Contact lenses may be a convenience, but they should not be worn in the laboratory. Several situations can occur that makes wearing lenses dangerous: gases and vapors can be concentrated under contact lenses and cause permanent eye damage. Soft lenses will absorb solvent vapors, and other chemicals can remain in the lens for an extended period of time. Some solvents will even deteriorate the soft lens.

While hard contact lenses do not absorb organic vapors, they still pose a hazard in case of an accident. For example, a contact lens can bond to the eye following a caustic solution splash. Contacts trap solutions between the contact lens and the eye, and water properly used for washing cannot reach that area.

In the event of a chemical splash into an eye, it is nearly impossible to remove the contact lens to

(continued on p.6)

Another vital form of "eye protection" is a properly functioning eyewash. See article on page 5.

Contact Dermatitis: Are You Allergic?

Occupational skin diseases, most of which are contact dermatitis, are the second most common occupational disease reported to the Bureau of Labor Statistics. Contact dermatitis falls into two categories, allergic and irritant, both of which can share common symptoms. Pruritus (itching) is the most common symptom, but others may include redness, swelling, crusting, or scaling. Contact dermatitis may have a temporary or long-term effect on the person's skin. Therefore, proper lab procedures are crucial for preventing adverse reactions.

Contact allergens generally affect only a small portion of the population. Those most frequently found in the workplace include nickel salts, epoxy resins, chromium salts, paraphenylenediamene, and formaldehyde. The best prevention against allergic reaction is to remove these allergens from the environment of the worker. When this is not practical, lab workers should wear personal protective clothing (which includes gloves) and use fume hoods for all procedures.

Unlike allergic dermatitis, irritant contact dermatitis does not require prior sensitization and develops as the result of the direct effect of chemicals on the skin. Irritant contact dermatitis will develop in all workers exposed to significant concentrations for an adequate length of time. Mild irritation is characterized by itching, redness, and scaling. More acute cases may result in the formulation of bullae and ulceration. Substances which cause irritant contact dermatitis include strong alkalis and acids, soaps and detergents, and many organic compounds. Aggravating factors may include reduced humidity in the workplace, excessive heat, and friction.

As with allergic contact dermatitis, prevention is the key with irritant contact dermatitis. Always wear gloves and protective clothing. If it is necessary, the Department of Occupational and Environmental Safety (DOES) will recommend changes in lab procedures which may allow for a less irritating chemical to be used.

If for any reason contact dermatitis does occur, please seek the medical advice of University Health Service (368-2450), and report the incident to DOES. However, the best solution is prevention, so wear gloves and protective clothing and follow other "lab smart" procedures.

If you have any questions about which gloves and protective clothing are appropriate to particular procedures, contact DOES at x2907. Specific gloves are often required for protection from some substances found in the lab.

Wash the Eyewash

Rust and bacteria can build up in pipes that are seldom used. This is true for eyewashes that, though used infrequently, must be clean and in perfect working condition. Therefore, it is a good practice to flush the eyewash frequently to ensure that if needed it can respond.

Also, remember that in an emergency the eyewash must be readily accessible, so do not clutter up the sink with miscellaneous items or allow the swing arm to get entangled in anything. Some stations have been found unuseable because the polyurethane filter on the outlet heads had melted, probably from liquids being dumped into the sink and splashing up and melting the filter. The insides of the pipes on these units had to be scraped out to allow water flow to the nozzles.

Eyewashes are tested yearly by Plant Services, so call them if your inspection sticker is out of date or if you notice any problem with the eyewash station.

Eye Protection: A Little Means A Lot

(continued from p.4)

irrigate the eye because of involuntary spasms of the eyelid. Furthermore, anyone attempting to irrigate the eyes of an unconscious victim may not be aware of the contact lenses and hence not realize that they must be removed.

For these reasons, do not wear soft or hard contact lenses in work areas or laboratories where there are liquids or solutions which are injurious to the eye. Where eye protection is required, contact lenses are never substitutes for safety glasses or goggles. Neither, for that matter, is eyeglasses alone—always wear proper eye protection.