



"Safety Comes First"

Case Western Reserve University Environmental Health and Safety

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The holidays have come and gone for another year and spring is coming fast. A traditional part of northern living is spring cleaning and this applies to laboratories as well. As this spring approaches it may also be time to update your safety plans and trainings to reflect the work you are doing and the work you plan to do in the coming year. This is especially appropriate for the corner stones of laboratory safety: the Chemical Hygiene Plan (CHP) and the Exposure Control Plan (ECP).

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Both the CHP and ECP describe the safety elements required to run a research laboratory in a safe and regulatory compliant manner. These plans at their core define what is required of the individual, the laboratory and the institution. However there a fundamental part of this that is sometimes overlooked. The plans must have a section that doesn't just parrot back what the EHS department trainings and manuals require, but must include

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LABORATORY SPECIFIC TRAINING AND PROCEDURES. I highlight this text so as to draw your attention to the vital importance of this section of the plans.

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Laboratory specific training and procedures describe the unique work done in the laboratory. They are not just the general rules and regulations formed by OSHA, EPA, or other regulatory agencies. They must describe specifically what you intend to do to keep yourself and those around you safe. In addition

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OSHA's Most Cited Standards



Fall protection, under construction tops the list in both "most cited" and "highest penalties"



The following were the top 10 most frequently cited standards in fiscal year 2012 (October 1, 2011 through September 30, 2012):

1. Fall protection, construction ([29 CFR 1926.501](#))
2. Hazard communication standard, general industry ([29 CFR 1910.1200](#))
3. Scaffolding, general requirements, construction ([29 CFR 1926.451](#))
4. Respiratory protection, general industry ([29 CFR 1910.134](#))
5. Control of hazardous energy (lockout/tagout), general industry ([29 CFR 1910.147](#))
6. Powered industrial trucks, general industry ([29 CFR 1910.178](#))
7. Electrical, wiring methods, components and equipment, general industry ([29 CFR 1910.305](#))
8. Ladders, construction ([29 CFR 1926.1053](#))
9. Machines, general requirements, general industry ([29 CFR 1910.212](#))
10. Electrical systems design, general requirements, general industry ([29 CFR 1910.303](#))

The following are the standards for which OSHA assessed the highest penalties in fiscal year 2012 (October 1, 2011 through September 30, 2012):

1. Fall protection, construction ([29 CFR 1926.501](#))
2. Scaffolding, general requirements, construction ([29 CFR 1926.451](#))
3. Control of hazardous energy (lockout/tagout), general industry ([29 CFR 1910.147](#))
4. Machines, general requirements, general industry ([29 CFR 1910.212](#))
5. Powered industrial trucks, general industry ([29 CFR 1910.178](#))
6. Ladders, construction ([29 CFR 1926.1053](#))
7. Electrical, wiring methods, components and equipment, general industry ([29 CFR 1910.305](#))
8. Process safety management of highly hazardous chemicals ([29 CFR 1910.119](#))
9. Hazard communication standard, general industry ([29 CFR 1910.1200](#))
10. Electrical systems design, general requirements, general industry ([29 CFR 1910.303](#))

Biosafety Bulletin: Transgenic Insects

Did you know?

Nearly all investigators and laboratory staff know that, before work involving vertebrate animals may commence, federal regulations require approval of the work first be granted through the CWRU Institutional Animal Care and Use Committee (IACUC).

However, did you know that non-vertebrate animal research is subject to federal regulation, too? The NIH *Guidelines for Research Involving Recombinant or Synthetic Nucleic Acid Molecules* with a few exceptions, regulates research involving recombinant or synthetic nucleic acids, including transgenic plants, insects, yeast. Further, even certain strains of E. coli need to be registered with the CWRU Institutional Biosafety Committee (IBC).

Here are a few tips to help you decide if your research needs to be registered with the IBC:

- Unlike BSL-1 rodents, the purchase and transfer of transgenic insects is subject to approval by an Institution's IBC.
- The creation, breeding and propagation of transgenic insects requires IBC approval unless the mutations are naturally occurring or caused by chemical mutagenesis or radiation exposure.
- Experiments involving the insertion of genetic markers such as GFP into any non-native organism also need IBC approval.

Finally, keep in mind that exempt experiments still need to be reviewed and officially exempted by the IBC.

Additional information:

CWRU IBC

http://ora.ra.cwruc.edu/research/orc/rdna/indxPg_Cwru_ibc.cfm

NIH *Guidelines for Research Involving Recombinant or Synthetic Nucleic Acid Molecules*

http://oba.od.nih.gov/oba/rac/Guidelines/NIH_Guidelines.htm



“However, did you know that non-vertebrate animal research is subject to federal regulation, too?”

Properly Identifying Chemical Bottles

“The user may know what is in the bottle, but others may NOT know.”

One of the most commonly cited safety violations in a laboratory is failure to properly identify chemical bottles. The reason is simple. The user may know what is in the bottle, but others may NOT know. This is the purpose of the Hazard Communication Standard (HCS): to communicate to others in the area that a hazard, in this case a chemical is present.

Label a container as soon as a chemical is transferred into it. If the container's content is different from the previous chemical contained within it, remove or deface the old label and properly relabel it with the new information. Labels need to be clear and in English and contain the proper chemical name. Do not use abbreviations, short hand or chemical nomenclature. Anyone should be able to understand the label. Before adding a different chemical to an empty bottle, clean the bottle by using the triple rinse method.



Deface Labels and properly clean, empty bottles for disposal.



If an empty chemical bottle is going to be thrown away:

Remove the cap and dispose if it separately.

Remove or deface the label. This declares that the bottle is empty.

Properly triple rinse the bottle before throwing it away.

For extreme poisons, like a cyanide, collect the rinsate and dispose of the rinsate as a chemical or hazardous waste.

Radiation Safety Tips

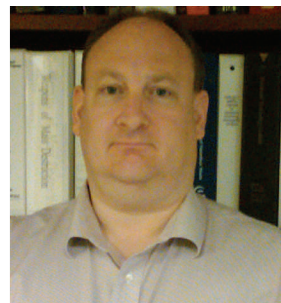
1. Never eat, drink, chew gum, take medication or apply cosmetics while in the laboratory.
2. Wear gloves, lab coats and closed-toed shoes while in the laboratory.
3. Take off gloves while using phones, pens or other general items.
4. Wash hands after using any hazardous materials.
5. Routinely use radiation detectors while using radioactive materials.
6. Perform wipe tests at least once a month.
7. Place radioactive waste in appropriate labeled containers.
8. Use a fume hood to transfer or dilute radioactive solutions.
9. Conduct surveys after conducting experiments where more than 200 microcuries is used.
10. For all EMERGENCIES immediately call the EHS office (368-2906) during business hours or campus police (368-3333) after hours and on weekends.

Director's Corner, Cont.

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to the training received through EHS and other outside sources, it is required by law that everyone in the laboratory receive training that is specifically designed to cover the specific plans and procedures of that laboratory, and to record documented proof of this annual activity. An outline of the laboratory specific training, that is given to all employees, volunteers, or others that are members of that laboratory, must be placed in the plans. A hard copy of these documents must be kept in the laboratory and accessible to all lab associates, and not just stored in the Primary Investigators office. The complete plan must also include a training sign in sheet documenting the date and proof of lab-specific training. The plans must be revised annually or any time changes occur in the laboratory, and new training must be conducted to cover these changes.

Please take this opportunity to make sure that your plans are complete and that you have conducted laboratory specific training and documented it in your plans. As always we are available for consultation should you need assistance.



“The plans (CHP and ECP) must be revised annually or any time changes occur in the laboratory.....”

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