



Safety Matters Fall 2008 Newsletter

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EH&S Showing Green

For many years, and often behind the scenes, EH&S has been involved in a variety of Reduce, Reuse, Recycle (R3) initiatives. Some of these programs have a regulatory driver, such as silver recovery; others, such as solvent recycling, are driven by the commitment to incorporating R3 initiatives into standard operations. The common denominator is that each has a direct environmental benefit.

Visit EH&S's website <http://ehs.columbia.edu/Recycling.html> to read more about our Reduce, Reuse, Recycling initiatives. As always, we welcome your suggestions for new projects that benefit the environment.

Chemical Spill Kits Installed at Morningside

New chemical spill kits have been installed throughout the Morningside campus on all floors where laboratories are located. The kits are designed to handle small quantities of most acids, solvents, and weak caustics, and are sealed by tamper-proof tape to deter pilfering and to indicate if the kit has been opened.

These kits should only be used to cleanup a manageable spill-one in which the identity and hazards of the chemicals are known, appropriate personal protective equipment (PPE) and adequate cleanup materials are available, and responders possess the knowledge to safely perform the task.

Unmanageable spills should not be cleaned up by lab personnel, but rather should be reported to Public Safety or to EH&S. **These kits are not to be used for mercury, hydrofluoric acid, biological or radioactive materials!**

If you have used the kit, or if it is opened for any reason, please report this to EH&S so that the contents can be replenished. To find out more about how to clean up a chemical spill, contact EH&S.

Why Obtain Clearance for Laboratory Equipment?

The purpose of clearing laboratory equipment is to ensure that the equipment is free from hazardous biological, chemical or radioactive contamination so that workers moving or repairing the equipment are not put at risk.

All laboratory equipment (centrifuges, freezers, refrigerators, glove boxes) must be decontaminated by lab workers and cleared by Environmental Health & Safety (EH&S) prior to being moved, serviced or disposed. Upon confirming decontamination, EH&S will complete a Clearance Form and forward it to Facilities if they are called upon to move it. Clearance tape will also be placed on the equipment to indicate that it is safe to handle.

Contact EH&S if you need additional information about proper decontamination and disinfection procedures. University policy mandates that clearance be obtained prior to moving any piece of equipment from a lab.

New Building Code, New Fire Code..... New Laboratory Rules

Effective July 1, 2008 New York City launched a new Building Code and a new Fire Code. The new Fire Code has some rule changes that will affect the storage, handling and use of chemicals in the laboratory and in chemical storage rooms. The FDNY Inspector has informed that enforcement of these new codes will start this fall.

One of the most notable changes concerns the number of required Certificate of Fitness (COF) – C-14 holders. The old code required one COF holder per floor when any lab was in operation, but the new Fire Code requires one per lab unit when a laboratory is in operation.

Each lab will be required to have at least one Certificate of Fitness holder present when the lab is in operation (including evenings, nights, weekends and holidays).

To acquire a **Certificate** of Fitness please visit our website at <http://ehs.columbia.edu/fs.html>.

Other changes from the new Fire Code include:

- Black-out curtains and drapes used in laboratories must be flame-resistant
- Compressed gas cylinders may not be located in areas that could prevent safe egress in event of accidental release of cylinder contents (e.g., near an exit from the lab).
- Numbers of compressed gas and cryogenic cylinders stored in labs may be affected—the Fire Dept. is in the process of clarifying specifics.
- Chemical fume hoods must be provided with a means of preventing overflow of a spill of 2 liters of liquid.
- Incompatible materials must be separated while in storage. FDNY will clarify new requirements.
- Flammable quantities for new labs will be based on size of lab and presence of a flammables storage cabinet.
- New chemical storage rooms may not contain a maximum of either 300 gallons of chemicals or 5 gallons per square foot of floor area.

EH&S continues to meet with the FDNY Deputy Chief Inspector to get further clarification of these new rules. For any questions concerning the new Fire Code or any laboratory fire/life safety issues please email: fire-life@columbia.edu.

Hazardous Waste Compliance Remains a Focus for EPA

Background: For five years, (2000 – 2004) EPA maintained a high profile in colleges and universities in Region 2 (New York, New Jersey, Puerto Rico and US Virgin Islands) performing inspections primarily focused on hazardous materials/waste management. During that period, EPA assessed (after negotiated settlement agreements) close to \$4 million in penalties to those universities subjected to their unannounced enforcement inspections (<http://www.epa.gov/region02/p2/college/>). Since 2004, the Lamont and Morningside campuses have been operating under the structure of an EPA-mandated Environmental Management System

(EMS). The EMS provides the framework for the University's environmental compliance commitments with a goal of continuous improvement. As part of the EMS, policies, procedures and guidance on proper practices have been developed for all of Columbia's campuses to assist in meeting compliance obligations.

Upcoming Audit

The University performs periodical internal evaluations of its environmental programs. This fall, the University is also planning a multi-campus environmental program review by an external consultant. As the summer wanes, please take a few minutes to review your environmental performance in relation to the EMS and its components, particularly in the areas of chemical handling and hazardous waste management.

Recent EPA Inspection

Since 2004, EPA has spent more of its time on the more friendly approach to environmental compliance, that being voluntary audit agreements (<http://www.epa.gov/region02/capp/cip/agree.htm>). Now that the audit agreements have largely come to a close, EPA appears to be getting back in the enforcement mode with a recent inspection at Lamont Doherty on July 29th. The focus during the inspection was...surprise, surprise...hazardous waste/materials management. The inspection focused on hazardous waste management practices both in lab satellite accumulation areas (i.e., where chemical waste is stored in the laboratory prior to pick-up) and in the main accumulation areas (i.e., where waste is stored after it is removed from the laboratories prior to transport and disposal). The inspection went well and no violation notices are expected. The inspector noted that the waste handling practices observed during inspections in the labs correlated closely with the content of the University's safety training program and guidance documents. Through their ongoing efforts to integrate environmental health and safety requirements into their work, the labs were prepared. This should serve as a reminder that EPA (or any other regulatory agency) can make an unannounced inspection at any time and we must remain vigilant in our efforts to maintain a high level of compliance at all times.

We would also like to remind everyone of the training and education programs that EH&S provides to ensure that the regulatory requirements for hazardous materials are made available to the University community and are applied in a consistent manner. The following safety training should be reviewed periodically:

- **Environmental Management System (EMS)**
<https://www1.columbia.edu/sec/cu/ehrs/ems.html> (log-in required)
- **Safety Training** <http://ehs.columbia.edu/Training.html>
- **Hazardous Waste Management overview; the 5 Ls...**

CUMC: <http://ehs.columbia.edu/5LMC.html>
LDEO: <http://ehs.columbia.edu/5LLDEO.html>
Morningside: <http://ehs.columbia.edu/5L.html>
Nevis: <http://ehs.columbia.edu/5LNEVIS.html>

- **Chemical Segregation and Storage:** <http://ehs.columbia.edu/chemSegChart.pdf>
- **The EH&S website containing information and resources regarding safety, health and environmental programs:** <http://ehs.columbia.edu/>

Contact EH&S at any time with questions, concerns or ideas about safety, health and environmental issues.

Shipping with Dry Ice-Safely, Legally

Solid carbon dioxide, or, dry ice, is commonly used as a refrigerant to keep materials cold during transit. If incorrectly packaged however, shipments containing dry ice pose several hazards during transit, including a risk of explosion, suffocation and tissue damage. Dry ice is therefore regulated as a “dangerous good” by the International Air Transport Authority (IATA) and the Department of Transportation (DOT). To mitigate these hazards, several precautions must be taken when offering packages containing dry ice for shipment.

- Packages must be allowed to ventilate to prevent the build-up of dangerous levels of pressure from sublimating carbon dioxide.
- Packages must be of sufficient strength to withstand the rigors of transit and handling, including changes in temperature, humidity and altitude.
- Dry ice must be shipped in containers compatible with its extremely low temperature; certain plastics can become brittle at these temperatures.
- Specific paperwork must be completed, and labels placed on packages containing dry ice to indicate their contents.

From Omaha Steaks and other perishable food products, to cell lines and tissue samples, the extremely low temperature of dry ice is ideal for in-transit refrigeration, as long as shipments are packaged, labeled and manifested properly. Any person wishing to offer packages containing dry ice for shipment must complete a training program to understand the hazards of dry ice, and the requirements under IATA and DOT to mitigate those hazards. A new training program has been developed, and is available on the RASCAL system, that will ensure individuals are properly trained to prepare dry ice shipments. To access the training go ‘Training Center’ from the RASCAL homepage, select ‘Safety Courses’ and then select ‘Shipping with Dry Ice’.

Radioactive Rocks

During a recent visit to Lamont-Doherty Earth Observatory, it was discovered that one of the rocks used in a decorative outdoor rock formation was highly radioactive reading 5 mR/hr at the surface (background radiation is 0.02 mR/hr). The rock (see photograph) contained high concentration of natural Uranium. The rock was removed and appropriately disposed.



Several years ago, a rock was found in the Geology Department at Morningside that was emitting an even higher level of radioactivity, exceeding 50 mR/hr at the surface. The history of the old rock was traced back to the Nevada test site for atomic bombs. The rock was immediately removed and disposed as radioactive waste.

Recent published news regarding the potential hazard of granite used in kitchen counter tops has generated concern for some Columbia residents. EH&S visited several apartments and

measurements of the granite showed a normal range of activity for this kind of rock (0.04 mR/hr or double background). This minute amount of activity is due to the small amount of natural uranium contained in granite and it does not pose a risk to building occupants.

Environmental Health & Safety Welcomes Two New Staff:

Neil Mansky joins us as Laboratory Safety Officer at the Medical Center campus. Neil has a MS in Environmental & Occupational Health from California State University, Northridge and comes to Columbia from UCLA, where he held a lab safety position.

Jeremiah (Jerry) Meehan joins us as a Fire Safety Specialist for all laboratories at the Morningside campus. Jerry comes to EH&S upon retirement from FDNY after 25 years, most recently with the rank of Captain.

We are delighted to have such well-qualified additions to our staff – please join us in welcoming them to Columbia University.