

**In this issue of the Environmental Health and Safety (EHS) Listserv, June 17, 2010:**

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**1. Did you know?**

Supervisors must perform and document routine evaluations of their operations for hazards and/or non-conformance with regulatory requirements. Hazards and/or non-conforming conditions must be corrected as soon as feasible. Inspections must be conducted at a frequency that ensures expedient identification of potential hazards.

There are several reasons hazard assessments of the workplace should be conducted. A hazard assessment serves to identify potential hazards within the workplace as a first step toward mitigation and communication.

- **Hazard Mitigation.** Potential hazards in the workplace must have associated mitigation strategies. Strategies should be employed in the order listed:
  - Engineering controls to eliminate or reduce exposure to a hazard through the use or substitution of engineered machinery or equipment. Examples include self-capping syringe needles, ventilation systems, sound-dampening materials to reduce noise levels, safety interlocks, and radiation shielding.
  - Administrative controls to eliminate or reduce exposure to a hazard through the use of policies, procedures, safety signs, training or supervision, or a combination of these.
  - Finally, Personal Protective Equipment (PPE) to include any appropriate combination of eye, face, body, foot, hand, head, and respiratory protection depending on the hazard.
- **Hazard Communication.** Employees must made be aware of potential hazards in their work environment, engineering and administrative controls that are in place to mitigate the hazard(s), and personal protective equipment the employee is required to wear to control potential hazards that remain.

Resources are available to help supervisors determine mitigation strategies. EHS provides consultation either through the online Virtual Manual or through one-on-one consultation if questions remain after review of applicable safe operating procedures. User manuals, the Nebraska Safety Council and trade or professional organizations are other great sources of information on rules, regulations, standards, and effective hazard mitigation strategies.

Resources:

UNL Injury and Illness Prevention Program <http://ehs.unl.edu/programdocuments/iipp.pdf>  
Virtual Manual <https://scsapps.unl.edu/VirtualManual/>

**2. Check It Out!**

Dates for instructor-led courses offered by EHS are now online with specific dates viewable several weeks ahead. Go to the EHS Instructor-led Training page: <http://ehs.unl.edu/training/>. The main body

of the page provides general course information. Check out “Upcoming Events” (right hand side of the web page) periodically for specific course dates.

If you have questions or wish to set up an instructor-led session for your department, contact EHS by phone (402-472-4925) or email ([ehs@unl.edu](mailto:ehs@unl.edu)).

### **3. Waste Implications: Sumps, Pits, Traps and Plumbed Equipment & Machinery**

Many locations at UNL have devices designed to collect debris and dirt before it enters a sanitary or storm sewer system. Examples of such devices include floor sumps, pits, traps and oil-water separators. One thing all these devices have in common is that periodic cleaning is required, and the cleaning generates a waste. Any sand, grit, dirt, liquid or sludge removed from these devices is considered a waste.

This waste cannot be disposed via a landfill or dump station without first determining if it is a hazardous waste. Therefore, always contact EHS (402-472-4925 or [ehs@unl.edu](mailto:ehs@unl.edu)) prior to cleaning or pumping such devices, so we can assist in making a hazardous waste determination. The hazardous waste determination will typically involve sampling and analytical testing. Therefore, plan accordingly because it may take as long as two weeks to receive analytical results. Service vendors will often not accept the waste without analytical results.

To help ensure that waste generated from the cleaning of sumps and similar devices do not become hazardous waste, the following practices should be implemented:

- Never dispose of new or used chemicals via a floor drain or similar device, including pesticide rinsate.
- Do not wash oily equipment or oily rags directly into a floor drain.
- Protect the floor drain from spills of potentially hazardous materials (e.g., gasoline) by immediately containing and cleaning up the spill. Call EHS immediately if the spill reaches the drain or assistance is needed.
- If an operation has the potential of generating a spill (e.g., change of fluids), protect the floor drain by covering or placing an absorbent berm prior to performing the activity.
- Dry sweep floors prior to washing.

Certain equipment and machinery, including laboratories instruments, should not be plumbed into the sanitary sewer without first consulting EHS. This could be a violation of local ordinances as well as hazardous waste regulations.

Sometimes equipment and instruments contain traps and filters which require periodic cleaning or replacement. Similar to the discussion above, any sand, grit, dirt, liquid or sludge removed from the trap, or the used filter itself, is considered a waste. Therefore, a hazardous waste determination must be made prior to disposal. Such waste should be tagged for collection by EHS. Do not dispose of such waste as ordinary trash.

The Safe Operating Procedure (SOP) ***Hazardous/Radioactive Materials Collection Procedures*** provides information on Hazardous Materials Collection Tag (HCMT) completion. For additional questions or information beyond the resources provided below, contact Tony Lloyd, 402-472-4942 or [tlloyd4@unl.edu](mailto:tlloyd4@unl.edu).

Resources:

Hazardous/Radioactive Materials Collection Procedures SOP [http://ehs.unl.edu/sop/s-chem\\_collection\\_procedures.pdf](http://ehs.unl.edu/sop/s-chem_collection_procedures.pdf)

Sewer Disposal List SOP <http://ehs.unl.edu/sop/s-sewerdisp.pdf>

#### 4. Hearing Conservation

Temporary and permanent hearing loss can result from exposure to hazardous noise levels. The UNL Hearing Conservation program (HCP) applies to all UNL employees who, in the course of their employment, are exposed to noise levels of 85 decibels or greater based on an eight (8) hour time weighted average (TWA) regardless of the number of days of exposure per year.

There are several components to the program:

- **Assessing and monitoring of noise exposures** to define areas where noise levels may exceed occupational exposure or action limits, identify employees who are required to participate in the HCP, and select appropriate hearing protectors based on knowledge of the noise source/level/work environment and other pertinent considerations.
- **Control of noise sources** using engineering controls such as: maintenance, modification, or substitution of equipment; isolation of noisy equipment from surrounding areas; and utilization of acoustic materials. The next level of control is administrative controls such as: segregation of work processes and noisy areas; job rotation/scheduling; and equipment design/purchase policies regarding maximum noise levels.
- **Personal Protective Equipment (PPE)**, as an **additional** control, must be used when engineering and administrative controls are not feasible or completely effective in reducing an employee's exposure to less than an action level of 85 dB expressed as an 8-hour TWA.
- **Postings.** While not required by regulation, EHS strongly encourages the posting of caution signs to warn employees of areas characterized by potentially hazardous noise levels (this may be accomplished with the EHS door posting program or standard placards).
- **Training** is required upon initial employment and annually thereafter for employees subject to the HCP. Training administered by EHS includes: the effects of noise; the purpose, advantages, and disadvantages of various types of hearing protectors; proper selection, fit, and care of personal hearing protectors; purpose and procedures of audiometric testing; and information specific to the employee's exposure scenario, as applicable.
- **Audiometric testing and evaluation (Hearing tests).** Audiograms measure hearing thresholds at speech frequencies, and are capable of detecting hearing losses before they become apparent to the subject. HCP participants must receive an initial audiogram within six months of hire or assignment to job functions with exposures of 85 dBA 8-hr TWA or greater. (This time period may be extended to one year when using a mobile test van.)

EHS maintains the HCP program and related records. Department head/chairs have specific responsibilities under this program, as do supervisors, employees, and the audiometric testing provider.

For information not covered in the resources provided below, questions, or to discuss whether your work area requires further assessment, contact Yoko Smith, 402-472-6512 or [ysmith2@unl.edu](mailto:ysmith2@unl.edu)

Resources:

University of Nebraska-Lincoln Hearing Conservation Program

[http://ehs.unl.edu/programdocuments/Hearing\\_Conversation\\_Program.pdf](http://ehs.unl.edu/programdocuments/Hearing_Conversation_Program.pdf)

Hearing Conservation SOP [http://ehs.unl.edu/sop/s-hearing\\_conservation.pdf](http://ehs.unl.edu/sop/s-hearing_conservation.pdf)

Personal Hearing Protection Devices SOP [http://ehs.unl.edu/sop/s-hearing\\_protection.pdf](http://ehs.unl.edu/sop/s-hearing_protection.pdf)  
Door Postings for Potentially Hazardous Locations SOP [http://ehs.unl.edu/sop/s-door\\_posting.pdf](http://ehs.unl.edu/sop/s-door_posting.pdf)

## 5. Welding Cart Usage and Storage

The **Welding and Cutting Operations** SOP provides an awareness of hazards associated with welding and cutting operations and strategies for minimizing associated risks. A recent change in this SOP addresses frequently asked questions on welding cart usage and storage.

To reduce the risk of excessive wear and damage to compressed gas cylinder caps and regulators from repeatedly removing and reinstalling, cylinders may be stored on a single portable welding cart especially built for such purpose, but only if those gases are intended to be used on a regular basis (e.g., at least once per month). When stored on a cart, cylinder valves must be closed.

- The cylinders must be oriented on the cart in an upright position and restrained at all times.
- The cart must be constructed of non-combustible materials and stable to prevent possible tip-over. The cart must be kept on a firm level surface.
- The cart must be kept in a well-protected, well-ventilated, dry location at least 20 feet from highly combustible materials such as oil, etc.
- A cart with mixed gas cylinders (oxygen and acetylene) may not be stored with other incompatible compressed gas cylinders, such as other flammable gases or other oxygen cylinders.
- If a welding cart is not used more than once a month the cylinders should be removed and stored separately in accordance with cylinder storage requirements (e.g., regulators removed and caps secured).

Review the entire **Welding and Cutting Operations** SOP through the EHS web site.

Resources:

Welding and Cutting Operations SOP [http://ehs.unl.edu/sop/s-welding\\_&\\_cutting\\_operations.pdf](http://ehs.unl.edu/sop/s-welding_&_cutting_operations.pdf)

## 6. Revised Safe Operating Procedures (SOPs)

EHS has revised existing SOPs which are available on the EHS website:

- Autoclave Operation and Performance Testing <http://ehs.unl.edu/sop/s-bio-autoclavesafety.pdf>
- Biohazard Door Postings [http://ehs.unl.edu/sop/s-bio-door\\_postings.pdf](http://ehs.unl.edu/sop/s-bio-door_postings.pdf)
- Emergency Planning [http://ehs.unl.edu/sop/s-emergency\\_planning.pdf](http://ehs.unl.edu/sop/s-emergency_planning.pdf)
- Packaging and Shipping Hazardous Materials/Dangerous Goods [http://ehs.unl.edu/sop/s-ship\\_hazmat\\_dangerousgoods.pdf](http://ehs.unl.edu/sop/s-ship_hazmat_dangerousgoods.pdf)
- Personal Protective Equipment (PPE) – Eyes and Face [http://ehs.unl.edu/sop/s-PPE\\_eyes-face.pdf](http://ehs.unl.edu/sop/s-PPE_eyes-face.pdf)
- Power Generators – Stationary Emergency Generator Operations & Maintenance Log [http://ehs.unl.edu/sop/s-generator\\_emergency\\_log.pdf](http://ehs.unl.edu/sop/s-generator_emergency_log.pdf)
- Power Stationary Emergency Generators – Permits and Compliance Requirements [http://ehs.unl.edu/sop/s-generators\\_permits\\_compliance.pdf](http://ehs.unl.edu/sop/s-generators_permits_compliance.pdf)
- Shipping Biological Substances [http://ehs.unl.edu/sop/s-ship\\_biological\\_substances.pdf](http://ehs.unl.edu/sop/s-ship_biological_substances.pdf)
- Shipping Infectious Substances w/wo Dry Ice [http://ehs.unl.edu/sop/s-ship\\_infectious\\_substances.pdf](http://ehs.unl.edu/sop/s-ship_infectious_substances.pdf)
- Shipping Items With Dry Ice That Are Not Otherwise Dangerous Goods [http://ehs.unl.edu/sop/s-ship\\_nondanger\\_dry\\_ice.pdf](http://ehs.unl.edu/sop/s-ship_nondanger_dry_ice.pdf)
- UST – Summary of Regulatory Requirements [http://ehs.unl.edu/sop/s-UST\\_summary\\_regulatory\\_requirements.pdf](http://ehs.unl.edu/sop/s-UST_summary_regulatory_requirements.pdf)

- Welding and Cutting Operations [http://ehs.unl.edu/sop/s-welding\\_&\\_cutting\\_operations.pdf](http://ehs.unl.edu/sop/s-welding_&_cutting_operations.pdf)

Additional SOPs relevant to various hazards and tasks are available through the EHS website at <http://ehs.unl.edu/sop/>.

**Remember...SAFETY IS AN ATTITUDE!**