Dry ice training

by Lanie Hazlewood

Do you ship material on dry ice off campus? Have you received any training to do so? Believe it or not, dry ice is considered a hazardous material by both Department of Transportation (DOT) and International Air Transportation Association (IATA). Consequently, anyone shipping dry ice must receive DOT training on the proper packaging, marking, labeling, and shipping documents of hazardous materials. Failure to receive training is one of the top violations of DOT. Violations of DOT regulations can result in monetary and/or criminal fines.

Radiological and Environmental Management (REM) is here to assist with DOT compliance. For training dates and information, please contact Lanie Hazlewood (765-496-7367 or lshaizzlewood@purdue.edu).

REM can provide DOT training for individual departments or groups at their location by request. In addition, DOT shipping services are available daily from WTHR 225. Materials must be there by noon for same-day shipping.

The following is required when submitting material for shipment:

■ A complete chemical description of material is required; please provide material safety data sheets (MSDS).

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MSDS: read it before you need it

by Stephanie Rainey

Maybe your work area is a lab, maybe an office or classroom setting, or maybe your work area isn't limited to space within four walls. No matter what your job is at Purdue or how your work area is defined, you are likely exposed to materials that are considered by the Occupational Safety and Health Administration (OSHA) to be “hazardous.” Yes, that does include dangerous chemicals, but according to the OSHA Hazard Communication Standard (HCS) - or Right-to-Know law, as it is also known - it can also mean items as seemingly innocuous as many household or office supplies.

Working with any hazardous material has risks. Consequences - whether from accidental or intentional actions - can range from injuries which are minor, devastating, or even fatal. But it doesn’t have to be that way at all. Workers can protect themselves and help reduce the likelihood of sustaining any injury by following the proper usage instructions on the label of the product container and by reading the material safety data sheet (MSDS) that is provided by the manufacturer. NOTE: If an MSDS is not included with the product, you may request or download one from the manufacturer/distributor or from the web sites listed below.

If you use products in the workplace according to the manufacturers’ recommendations and follow the appropriate safety guidelines that are provided, you should be fine. While safety information on a container label may be limited due to the space available, an MSDS provides all of the pertinent safety information you will need to know; always read the MSDS before you use any material you are not familiar with. For instance, if the MSDS tells you to use gloves, use gloves. If it says to wear safety glasses or goggles, wear them. If the material is sensitive to vibration and could potentially ignite, explode, or otherwise react violently if it is shaken, don’t shake it! You get the idea.

If you have any questions about material safety data sheets or their use please contact us for assistance.

MSDS websites:
■ http://www2.itap.purdue.edu/msds/index.cfm
■ http://www2.hazard.com/msds/index.php
■ http://www.msdsxchange.com/english/index.cfm

SAVE THIS DATE!
Annual Safety Chair Meeting
Thursday, March 5, 2009
Stewart Center, Rm. 218
8:00-11:00 a.m.

For a detailed agenda, please visit:
http://www.purdue.edu/rem/2009ascm.htm
Prepare yourself for an icy, snowy walk without slipping or falling

by Steve Gauger

Brr! It’s cold out there. Wintertime in Indiana brings snow and ice that create special slip and fall hazards. Whether on campus or walking through your neighborhood, there is great effort to keep streets, walkways and parking areas clear. But be aware! Winter weather can quickly cover that freshly cleared sidewalk with snow and ice.

- According to OSHA, slips, trips and falls cause 15 percent of all accidental deaths, second only to motor vehicles.
- Nationally, 10 percent of all injuries are caused by slips, trips and falls.
- At Purdue during the 2007-2008 winter season, employees reported 68 winter related slip, trip and fall injuries. These injuries cost nearly one-quarter of a million dollars and caused employees to lose 460 days away from work.

Just like winter driving, winter walking requires anticipation of the road conditions. We often hear the term “defensive driving.” Let’s think “defensive walking.”

How to protect yourself from winter related slip and fall injuries:

- The local weather forecast will let you prepare today for tomorrow’s weather conditions.
- Have your winter weather supplies prepared and ready for use.
- Purdue Grounds asks for your help identifying unsafe conditions around campus. Call and report to help yourself and others:
  - Purdue Grounds, 494-4600
  - After hours and on weekends, report unsafe conditions to Purdue Police, 494-8221.

- The absolute best thing you should do to protect yourself is selecting and wearing appropriate footwear.
  - The soul of the matter is the sole of the shoe.
  - The softer the material of the sole, the better the grip. Soft rubber soles having deep traction grips is better for winter.
  - Some materials are very slippery on snow and ice. Avoid material such as plastic, leather and foam.
  - Frequently remove snow and ice buildup from the treads. This is especially important just before entering buildings. Snow clogged shoes are very slick on tile and other resilient flooring. Removing the snow before entering will reduce tracking in ice and water.
  - For extreme traction you could use strap-on non-slip shoe treads, but don’t use these indoors for they can damage the floors.
  - If you must dress for success, then use a pair of rubber over-shoes with good tread.
  - Plan your route and choose your path carefully to avoid icy conditions. Some of us are fortunate enough to have tunnels or crosswalks leading to our buildings. Take advantage of these protected routes, even if it takes a little longer.
  - Slow down. Allow extra time to get to your destination.
  - Avoid the temptation to run to catch a bus or beat traffic when crossing a street.

- Take short steps and walk at a slower pace so you can react quickly to a change in traction.
- Your arms help keep you balanced, so keep hands out of pockets and avoid carrying heavy loads that may cause you to become off balance.
- When walking on a sidewalk which has not been cleared and you must walk in the street, walk against the traffic and as close to the curb as you can.
- Be on the lookout for hazardous conditions:
  - Stairs and ramps present special challenges. When possible, use handrails.
  - Painted surfaces and gravel are especially slick in icy conditions.
  - Be aware of changes in walking surfaces.
  - Follow sanded or treated paths and avoid cutting the corner in untreated areas.
  - Be aware that approaching vehicles may not be able to stop at crosswalks or traffic signals.
  - Insufficient light can make it difficult to see obstacles.
  - At night, wear bright clothing or reflective gear, as dark clothing will make it difficult for motorists to see you.
  - During the daytime, wear sunglasses to help you see better.

- Fall safely. Even when you practice safe walking habits, slipping on ice is sometimes unavoidable.

Knowing how to fall will help you reduce the risk of injury. Use the tuck-and-roll principle and avoid trying to break the fall with a hand. Make yourself as small as possible by rolling up into a ball.

story continued on next page
Biological exposure occupational health program
by Robert Golden

Occupational health and safety in biological research labs is an important component of the Purdue University compliance structure. The Radiological and Environmental Management department (REM) and the Institutional Biosafety Committee (IBC) monitor the use of biohazardous agents, rDNA materials, unfixed human fluids, tissues, and cell lines. In addition to this monitoring, a biological exposure and occupational health program is being initiated to further promote workplace safety, health and compliance.

REM will offer a safety and awareness program to lab staff that have potential exposure to biohazardous agents. This program consists of specific awareness reviews, handling information, and opportunity for medical consultation. The Regional Occupational Care Center (ROCC) will provide the medical consultation and will review laboratory risk assessments and exposure potential to make medical decisions concerning individual vaccination and pre-exposure baseline sample collection. Please note that depending on the biological agent, scheduling a ROCC appointment may be needed for a limited medical evaluation and to discuss the particular hazards. This annual program is available at no charge to the affected staff or workers. Participation in this program is strongly recommended, but is at the individual’s discretion.

Participation in this program includes:

- REM supplied Risk Assessment for specific agents
- Medical Assessment (onsite campus location)
- Agent overview of applicable signs and symptoms
- Vaccination (if applicable)
- Serum testing (if applicable)
- Post exposure accident information

If you chose to decline participation at this time, you may change your decision anytime in the future. You will receive REM specific biosafety awareness and handling information from your principal investigator.

Please contact Bob Golden with any questions: rwgolden@purdue.edu, or call 765-494-1496.

Dry ice
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- Quantity or amount of material being shipped (i.e. 2 -10 mL vials, 1-2 kg bottle).
- Complete “Ship To” address and phone number.
- A valid Purdue account number for shipping charges or a valid recipient FedEx account number.
- Contact information of the shipper, please include a telephone number and/or email address.

Prepare yourself
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- If you do fall, please follow these guidelines:
  - Seek medical treatment when experiencing pain or discomfort.
  - Call 911 for medical transport.
  - Report all injuries to your supervisor. Be sure you and your supervisor complete a First Report of Injury available on the REM website: http://www.purdue.edu/rem or call 49-41430.
  - Employees who fall at work may be covered under Purdue's workers compensation insurance, even when in the parking lot just before or after work.

Have a safe winter!

Update: ordering radioactive material
by Sharon Rudolph

For many years, researchers at Purdue have ordered radioactive materials through GE Healthcare. A year or so ago, GE discontinued all P-32 production as well as other isotopes but were still handling several C-14 and H-3 items. We have received a letter from GE that they will now discontinue all radiolabeling services by the end of 2009.

There are currently two vendors that are used by the majority of researchers at Purdue. They are:

- Perkin Elmer - http://las.perkinelmer.com/default.htm

Purdue has quote prices from these vendors. Please call Sharon at 47969 for pricing information or questions. Vendors can be contacted to investigate adding additional items to our quote.

Other vendors frequently used include, but are not limited to:

- American Radiolabeled Chemicals (ARC) - Purdue receives a 10 percent discount: https://www.arcincusa.com/
- Siemens (formerly Diagnostic Products Corp. (DPC)) - RIA kits: http://diagnostics.siemens.com/

If you find a new vendor that may provide the material you need, we may add that vendor to the Purdue ordering system. To do this, please have the vendor contact Sharon Rudolph at 765-494-7969 or skrudolph@purdue.edu to request a copy of our Nuclear Regulatory Commission license and proper shipping information.
Radiation safety survey documentation

by Jim Schweitzer

An integral part of the process to maintain compliance with regulations and maintain radiation exposure, As Low As Reasonably Achievable (ALAR A) is an effective program to identify contamination and elevated exposure rates.

To accomplish this, all users are required to perform surveys during use and at the conclusion of work with radioactive material. All contaminated areas should be decontaminated as soon as possible. Any significant contamination or any floor contamination should be reported to REM immediately; personnel working within the area should not leave unless a personal survey with an appropriate instrument indicates they are not contaminated.

To demonstrate compliance with the regulations, area surveys must be documented regularly and at a minimum of at least monthly, even if radioactive material has not been used. The record must include the date and location(s) of survey, the survey results, the person performing the survey, and any subsequent action such as decontamination. If radioactive material has not been used, a notation such as "no material has been used in the last month" is sufficient.

Waste prevention and minimization are as consequential to economics as they are to environmental protection and human health and safety. They are also important aspects of education. Emphasizing environmental protection, health, and safety to all faculty, staff, and students is a clear responsibility at all levels.

Waste minimization is any action that reduces the amount and/or toxicity of chemical wastes that must be shipped off-site for disposal as hazardous waste. The following Purdue Pollution Prevention and Waste Minimization Programs have reduced or removed these items from disposal in 2008:

- 120,000 “Red” shop rags laundered and reused.
- 31,335 fluorescent lamps sent for recycling.
- 7,586 gallons of used oil recycled.
- 1,708 computer monitors sent for recycling.
- 92,849 pounds of obsolete electronic equipment sent for recycling.
- 606 gallons of spent solvent from parts washers reused in another product.
- 34 pounds of elemental mercury sent for recycling.
- 75 mercury thermometers have been replaced.
- 369 pounds of nickel-cadmium batteries recycled.
- 82 pounds of lithium ion batteries recycled.
- 19 pounds of nickel-metal hydride batteries recycled.

Achievement of waste prevention and reduction are essential functions of the University. The concept of “less is better” can be the norm while increased protection of human health and the environment, as well as real cost savings are the benefits.
Updated laser safety standards

by Mary Handy

For those of you who work with or around lasers, the Laser Institute of America (LIA) has published an updated ANSI document, ANSI Z136.1-2007, American National Standard for Safe Use of Lasers. These standards are effective immediately. The Laser Safety Program recommendations have expanded and more clearly defines duties and responsibilities of the Laser Safety Officer (LSO), Laser Safety Committee (LSC), and personnel responsibilities for employees and supervisors. A summary of specific changes follows.

- **Hazard Evaluations:** A greater emphasis has been placed on parameters such as access to beam path, attended vs. unattended operation, focused beams, telescopic viewing conditions, and photochemical hazards.

- **Classifications:** The former classification of lasers (1, 2, 3a, 3b, and 4) has been modified to incorporate magnification factors and to fall in line with the International European Community (IEC) Standards. The new classifications are: 1, 1M, 2, 2M, 3R, 3B, and 4.

- **Control Measures:** Control measures have been both strengthened and relaxed, depending on the specific requirement. These changes include, but are not limited to:
  - Laser pointers
  - Enclosures and protective housing
  - Master switches and interlocks
  - Use of lasers in navigable air space
  - Standard operating procedures (SOPs)
  - Demonstrations in the general public
  - Optical fiber transmission systems
  - Labeling of protective equipment (e.g., eyewear, windows and barriers, viewports and films, collecting optics filters, etc)
  - Area warning signs and laser system labeling

- **Education and Training:** Requirements have been substantially modified. Training topics must include the previously required topics, but now must additionally include warnings against the misuse of lasers and hazard information for applicable non-beam hazards. Personnel who are required to complete the training not only include operators of Class 3B or 4 lasers (which also include the Laser Principal Investigator), but also any person that may be exposed to Class 3B or 4 laser radiation (e.g., students or personnel working within the nominal hazard zone that do not operate the laser systems).

- **Medical Surveillance:** Medical surveillance is no longer required, but still recommended for personnel prior to working with Class 3B or 4 lasers. However, medical evaluations are still required following a suspected or known eye exposure as soon as possible and not to exceed 48 hours following exposure.

- **Non-beam Hazards:** Non-beam hazards were re-grouped as physical, chemical, or biological agents and other factors.
  - The physical agents section expands on electrical hazards and recommendations, collateral radiation and photosensitizing agents from industrial chemicals and prescription medications, ozone issues associated with UV lasers in the shorter wavelengths, and radio-frequency (RF) concerns.

Online laser and radiation safety training

by Mary Handy

REM has been developing online safety training courses in an effort to improve customer service and allow greater flexibility to accommodate faculty, staff, and student schedules. Some of REM's safety courses are found in the Purdue Blackboard system; this system is already familiar to many faculty and student members. Training modules can be found in the Purdue Non-Academic Campus Institution under the Physical Facilities Division. For instructions on how to register and complete these trainings, please use the following link: http://www.purdue.edu/rem/rs/rstrain.htm#INS.

Online training efforts are also in-line with Purdue's commitment toward sustainability. Training completion can be immediately demonstrated through Blackboard and reference materials are provided in the training course and are readily accessible by the participant at any time, eliminating the need for printed materials.
Preparing for the unexpected

by Ron Wright

Purdue University’s Emergency Preparedness (EP) Office has been busy documenting and refining campus emergency preparedness plans and procedures. The Integrated Emergency Operations Plan (IEOP), the University’s focal point for planning, was completed in December 2007 but is constantly being reviewed and updated based on campus community feedback and results of tests and exercises. The IEOP is now posted on the Emergency Preparedness website.

In October 2008, the EP Office in partnership with Purdue Homeland Security Institute (PHSI) received a Department of Education Grant for Emergency Management in Higher Education for more than $436,000 to “develop and implement emergency management plans for preventing campus violence (including assessing and addressing the mental health needs of students) and for responding to threats and incidents of natural disaster in a manner that ensures the safety of the campus and community.” This grant will allow us to conduct a risk assessment, revise and expand the IEOP to include a transportation plan for persons with disabilities; an infectious disease plan; and a mental health plan; and conduct National Incident Management System (NIMS) training for specified University personnel. Our partnership with PHSI will also include using graduate students to assist in the development of the plans.

During Boiler Gold Rush (BGR) 2008 representatives from the Emergency Preparedness Office, Purdue Fire Department, and Purdue Police Department provided over 500 BGR student leaders with safety and preparedness information. The BGR student leaders were then asked to use this information and “train” the incoming freshmen. Through this “train-the-trainer” process the objective was to give the student leaders the tools to provide student-to-student interaction at various times during BGR week. This year, to highlight emergency preparedness, an All Hazards siren test was conducted on the second day of BGR. The siren test was designed to verify operation of the campus’s five sirens as well as to provide the students the siren sound. Moreover, the student leaders were asked to take a few minutes after the siren test to discuss required actions when sirens are activated. The siren test was a success…all five sirens worked!

The students were told that sirens may be activated for a natural disaster or human caused incident such as a tornado warning, hazardous materials release, or a major civil disturbance like an active shooter on campus. Anytime the sirens are activated (other than the periodic test), individuals should immediately seek shelter in the nearest facility and seek additional information by all means. Purdue University has several communication layers to provide the campus community with emergency information. These communication layers have been consolidated and refined into Purdue ALERT. The Emergency Preparedness website provides detailed information on this system.

Additionally, the Purdue Police Department's brochure called “Your Campus Your Safety (YCYS)” includes safety information, numerous statistics, and a tear out page that contains an emergency procedure “Quick Reference Guide.” The YCYS brochure was provided to the students and everyone is encouraged to periodically review the information. The brochure may be found at: http://www.purdue.edu/police/pdf/YourCampus_2008.pdf

During the fall semester, the EP Office also conducted a two-hour active shooter table top exercise, named “Immediate Response” with several University departments. The main goals were to encourage departments to continue or develop their emergency planning processes and focused on the need for quick and effective communication. The exercise allowed departments to review their internal procedures and gain a better understanding of how Purdue’s police and fire departments will react to a major incident. Lessons learned from the exercise will help refine departmental and university procedures.

The EP Office also participated in the Department of Homeland Security National Preparedness Month by conducting its annual test of the Purdue ALERT system (except sirens). Purdue ALERT, the University’s emergency warning notification system, is a multi-layered communication system designed to quickly inform the Purdue community of a pending emergency. The test occurred in September and includes the use of mass email, mass text-messaging, posting to the Purdue homepage and Facebook Emergency Notification Group, and a test message on Boiler TV.

We continue to encourage everyone to sign up for the “text messaging” layer. Instructions may be found on Purdue’s homepage or at: http://news.uns.purdue.edu/mail.html.

For more information on Purdue ALERT or emergency preparedness in general, please visit the Emergency Preparedness website at http://www.purdue.edu/emergency_preparedness/.
Two new employees join REM’s hazardous material management team

David Wilson has joined REM as a Hazardous Waste Chemist. Before joining Purdue, he earned a Biology degree from Saginaw Valley State University, managed an Abercrombie and Fitch store, bartended, worked many manual labor jobs, and even modeled. Away from work, Dave is an avid rock climber, sailor, snowboarder, and backpacker. He also loves to read and listen to music.

Mike P. Koppes has recently re-joined REM, this time as an Environmental Technician VIII. While earning a B.S. degree in Aeronautical Technology from Purdue University, Mike worked for many years as a student technician in REM. After college, Mike worked as a Maintenance Scheduler for Skybus Airlines where he managed day-to-day operations of their fleet of aircraft with regards to maintenance and fleet capabilities. He also worked as a Mechanic for Pratt and Whitney where he repaired and assembled commercial jet engines. Mike is currently completing a M.S. degree in Human Factors and Safety.

Welcome Mike Nicholson

Mike Nicholson began employment with the Radiation Safety section of REM as an Environmental Technician in September 2008. He will be helping with radioactive material management, hood surveys, hazardous waste management, radiological dosimetry, and order approvals, among other duties.

Mike formerly worked at Eli Lilly and gained valuable experience in areas such as chemical dispensing, DOT transportation, waste characterization and disposal, emergency response, and equipment maintenance. He dutifully served the community for ten years on the Sheffield Township Volunteer Fire Department and retiring as Fire Chief in 2007.

At home, Mike enjoys spending time with his family and raising show horses. Welcome to Purdue, Mike!
The chemical agents section consists of new or expanded information on compressed gases, laser dyes and solvents, control measures, and sensors/alarms.

Biological issues are discussed, as well as other factors that may be considered in laser safety evaluations (e.g., ergonomics, limited work space, and employee work patterns).

More detailed information regarding these changes have been incorporated into the Laser Safety Training found at http://www.purdue.edu/rem/rs/rstrain.htm#LST. The Laser Safety Committee at Purdue is reviewing the changes to the standard and will make changes in Purdue's Laser Safety Program as appropriate. If you are interested in more specific information you may contact Mary Handy, LSO, by telephone at 765-494-2721, or by email at maryjo24@purdue.edu.

Online training

through Power Point modules on REM’s website.

While online training is valuable, it may not be appropriate in all cases. Certain needs may require supplemental training to demonstrate the understanding and practical application of the core concepts. For example, Initial Radiation Safety Training requires the participant to complete a short classroom training following the online completion. Regulations may also require that the training be given in a face-to-face setting with an opportunity to ask questions.

If you have suggestions for additional online training topics, please contact Mary Handy, Assistant Radiation Safety Officer, at maryjo24@purdue.edu, or at 765-494-2721.