

FROM THE DIRECTOR'S DESK

Happy New Year! With the new year, OEHS hopes that the campus environment will continue to improve as faculty, staff, students, and visitors realize safety and health are an inherent part of their culture. Proper health and safety procedures are a tool to be used as part of all work. As these procedures become more automatic, fewer accidents will occur. As accidents decrease the campus environment will become more safe and enjoyable for everyone. Let's make 1999, a year with far fewer accidents than in previous years.

Steve Eddington, Director

LASER POINTERS



"LASER"

The material in this note was taken from the article: Safety recommendations for laser pointers, by R. James Rockwell, Jr. and William J. Ertle that was published in *the Journal of Laser Applications*, Vol, 10, No. 4, August 1998, pages 174-180.

Diode laser pointers that produce a narrow beam of red light have recently become available at low cost in office supply stores, discount stores, electronic products stores, by mail order, etc. These devices are intended for use by persons presenting talks in classrooms, at conventions and meetings. The low cost and availability has resulted in large numbers of them in circulation.

The primary power source is typically 2 or 3 AAA batteries resulting in an output red light power of from 1 to 5 milliwatts (mW), which identifies them as Class IIIA lasers. One mW is one thousandth of a watt. Class II lasers have outputs less than 1 mW. The FDA requires warning labels on these devices according to the intensity of the emitted light. The "Caution laser" is for intensity less than 2.5 mW per square centimeter and "Danger laser" is for intensity greater than 2.5 mW per square centimeters.

The potential hazard associated with laser pointers is considered to be limited to a direct beam to unprotected eyes. The natural aversion response or blink reflex would usually limit the exposure to a safe level. A retinal burn is unlikely the result from a laser pointer exposure. However, intentional direct exposure of 5 mW of visible laser light requires an eye filter of at least 0.7 optical density.

There are reports of laser pointers imported from Russia and China that are improperly labeled. These devices produce green light at an output power of 5 mW and are considered to be a significant potential for an eye hazard if the exposure is direct.

When used as intended, Class IIIA laser pointers are not a safety hazard.

INDOOR AIR QUALITY IN THE WINTER

Now is the time of the year when most people start catching the cold and flu bugs. This is also the time when most building ventilation systems operate on reduced amount of outside air in an effort to keep the building warm while saving energy dollars.

The combination of these two events will generally elevate indoor contaminants within the office environment. The increase in contaminants can have a pronounced effect on persons with allergies and increase the spread of illnesses.

Humidity levels decrease in the colder months since cold air cannot hold as much moisture as warm air. Low moisture content tends to dry out nasal and sinus cavities and can cause dry itchy eyes.

Listed below are a few preventive measures a person can take to minimize their discomfort during the winter months:

1. Drink plenty of plain water to keep hydrated. Coffee, soda's, punch or juices are not substitutes for good ole plain water.
2. Use a damp cloth to wipe your desktop and other surfaces where dust and dirt collect. This will remove a large percentage of contaminants from your work area.
3. Food waste should be thrown into trash receptacles that are emptied on a daily basis. Food waste left to decompose in your trash bin can produce molds and bacteria.
4. If your office space has a recirculating fan unit, use it! the filter on the fan unit can trap some of the airborne contaminants as well as pull fresh air into your work space.
5. If you have plants in your office, take care of them. Throw away dead leaves, limbs, etc.. Potting soil produces molds, so you may want to remove the plants if you happen to be susceptible to molds.

PROPERTY INSURANCE AT ILLINOIS STATE UNIVERSITY

Illinois State University purchases property insurance through the Illinois Public Higher Education Cooperative in conjunction with the other state universities in Illinois. The insurance is in place to cover major losses. Most buildings on campus are insured by coverage that includes a \$10,000 deductible per occurrence.

A limited amount of buildings have content coverage, which is provided in most cases to protect bondholders. There is very limited contents coverage for departmental property, and each department would be responsible for replacement of lost or destroyed items not insured. In addition, the University's property insurance does not cover personal property brought onto campus by staff or students.

If you have any questions, please call Risk Management at 438-5915.

INCIDENT MANAGEMENT PLANS

By now all departments should have received a copy of the incident management plan dated 3-31-97. If not please give Environmental Health and Safety Office a call and we will send a copy to you.

Please review the packet of information but do not attempt to draft a department plan at this time. Place the IMP in your department health and safety binder after reviewing the information. Representatives from the Environmental Health and Safety Office will be contacting departments and setting up a meeting time to discuss the development procedures.

The IMP is a tool designed to assist departments when disaster strikes and speed the recovery operations. Proper planning is the key to success and the incident management plan will help departments to achieve that success.

KEEP YOUR HOME SAFE IN THE WINTER MONTHS



Jack Frost shouldn't be nipping at your nose when you're inside your home this winter season. But as you try to keep your home warm and toasty, don't put safety on the back burner.

The first thing to do is get a professional inspection of all your fuel-burning appliances, including furnaces, stoves, fireplaces, clothes dryers and space heaters. An inspection is not only wise maintenance; it might detect a hazard and thus save your home - and your life. These appliances burn fuel for warmth, cooking or decorative purposes. Typical fuels are natural and liquefied petroleum gas, kerosene, coal and wood. Under certain conditions, these appliances can produce deadly carbon monoxide (CO) gas. But with proper maintenance, these appliances are safe to use.

CO is a colorless, odorless gas produced by burning any fuel. CO poisoning associated with the use of fuel-burning appliances kills more than 200 people each year and sends almost 10,000 to hospital emergency rooms for treatment, according to the U.S. Consumer Product Safety Commission.

As an added protection to this annual maintenance, CPSC recommends consumers use a CO detector that meets the current requirements of Underwriters Laboratories Standard 2034.

The initial symptoms of CO poisoning are similar to the flu and include headache, fatigue, shortness of breath, nausea and dizziness. Exposure to high levels of CO can even cause death.

Modern heating equipment requires special training and tools for proper maintenance. Consumers should not service their own appliances, but should have a qualified plumber, heating contractor or gas company technician inspect their appliances every year.

Chimneys, flues and vents should be checked for leakage and blockages by creosote or debris. Creosote buildup or leakage could cause black stains on the outside of the chimney or flue. These stains can mean that pollutants are leaking into the house. Have all vents to furnaces, water heaters or boilers checked to make sure they are not loose or disconnected.

Also, make sure that your appliances are inspected for adequate ventilation. A supply of fresh air is important to help carry pollutants up the chimney, stovepipe or flue, and is necessary for complete combustion of any fuel.

Catherine Thorsen, Consumer Product Safety Commission

COLD WEATHER INJURIES

Trench Foot - Immersion Foot

Trench foot is a condition similar to chilblains. It is caused by prolonged exposure of the feet to cool, wet conditions. This can occur at temperatures as high as 60 degrees F if the feet are constantly wet. The skin is initially reddened with numbness, tingling pain, and itching then becomes pale and mottled and finally dark purple, grey or blue. If circulation is impaired for > 6 hours there will be permanent damage to tissue. If circulation is impaired for > 24 hours the victim may lose the entire foot. Trench Foot causes permanent damage to the circulatory system making the person more prone to cold related injuries in that area. The damage to the circulatory system is known as Reynaud's Phenomenon.

Treatment and Prevention of Trench foot

- Includes careful washing and drying of the feet, gentle rewarming and slight elevation. Since the tissue is not frozen as in severe frostbite it is **more** susceptible to damage by walking on it. Cases of trench foot should not walk out; they should be evacuated by litter. Pain and itching are common complaints. Give Ibuprofen or other pain medication.
- Prevention is the best approach to dealing with trench foot. Keep feet dry by wearing appropriate footwear.

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Wind Chill

Cooling Power of Wind on Exposed Flesh Expressed as Equivalent Temperature (under calm conditions)

| Estimated Wind Speed (in mph) | Actual Temperature Reading (°F) | | | | | | | | | | | |
|--|--|----|----|-----|--|-----|-----|-----|--|------|------|------|
| | 50 | 40 | 30 | 20 | 10 | 0 | -10 | -20 | -30 | -40 | -50 | -60 |
| | Equivalent Chill Temperature (°F) | | | | | | | | | | | |
| calm | 50 | 40 | 30 | 20 | 10 | 0 | -10 | -20 | -30 | -40 | -50 | -60 |
| 5 | 48 | 37 | 27 | 16 | 6 | -5 | -15 | -26 | -36 | -47 | -57 | -68 |
| 10 | 40 | 28 | 16 | 4 | -9 | -24 | -33 | -46 | -58 | -70 | -83 | -95 |
| 15 | 36 | 22 | 9 | -5 | -18 | -32 | -45 | -58 | -72 | -85 | -99 | -112 |
| 20 | 32 | 18 | 4 | -10 | -25 | -39 | -53 | -67 | -82 | -96 | -110 | -121 |
| 25 | 30 | 16 | 0 | -15 | -29 | -44 | -59 | -74 | -88 | -104 | -118 | -133 |
| 30 | 28 | 13 | -2 | -18 | -33 | -48 | -63 | -79 | -94 | -109 | -125 | -140 |
| 35 | 27 | 11 | -4 | -20 | -35 | -51 | -67 | -82 | -98 | -113 | -129 | -145 |
| 40 | 26 | 10 | -6 | -21 | -37 | -53 | -69 | -85 | -100 | -116 | -132 | -148 |
| (Wind speeds greater than 40 mph have little additional effect.) | LITTLE DANGER In < 1 hr with dry skin. Maximum danger of false sense of security | | | | INCREASING DANGER Danger from freezing of exposed flesh within one minute. | | | | GREAT DANGER Flesh may freeze within 30 seconds. | | | |
| | Trenchfoot and immersion foot may occur at any point on this chart. | | | | | | | | | | | |

Developed by U.S. Army Research Institute of Environmental Medicine, Natick, MA.

Cold STRESS

Insulation is a critical factor in clothing worn during cold environments. Clothing materials used for their insulating characteristics include cotton, wool, silk, nylon, down, polyester. Better insulation is achieved by layering clothes rather than wearing one garment. Layered clothing is a valuable means to adjust the heat transfer properties of the clothing. Water vapor permeability is also important. Choose clothing that allows sweat to evaporate through the clothing.

The following chart depicts some of the hazards of cold environments. Wearing proper clothing can prevent cold related disorders.

Cold-Related Disorders including the Symptoms, Signs, Causes, and Steps for First Aid

| Disorder | Symptoms | Signs | Causes | First Aid |
|--------------------|--|---|--|---|
| Hypothermia | Chills Pain in extremities Fatigue or drowsiness | Euphoria Slow, weak pulse Slurred speech Collapse Shivering Unconsciousness Body temperature <95 F (35 C) | Excessive exposure Exhaustion or dehydration Subnormal tolerance (genetic or acquired) Drug/alcohol abuse | Move to warm area and remove wet clothing Modest external warming (external heat packs, blankets, etc.) Drink warm, sweet fluids if conscious Transport to hospital |
| Frostbite | Burning sensation at first Coldness, numbness, tingling | Skin color white or grayish yellow to reddish violet to black Blisters Response to touch depends on depth of freezing | Exposure to cold Vascular disease | Move to warm area and remove wet clothing External warming (e.g., warm water) Drink warm, sweet fluids if conscious Treat as a burn, do not rub affected area Transport to hospital |
| Frostnip | Possible itching or pain | Skin turns white | Exposure to cold (above freezing) | Similar to frostbite |
| Trench Foot | Severe pain Tingling, itching | Edema Blisters Response to touch depends on depth of freezing | Exposure to cold (above freezing) and dampness | Similar to frostbite |
| Chilblain | Recurrent, localized itching Painful inflammation | Swelling Severe spasms | Inadequate clothing Exposure to cold and dampness Vascular disease | Remove to warm area Consult physician |
| Raynaud's disorder | Fingers tingle Intermittent blanching and reddening | Fingers blanch with cold exposure | Exposure to cold and vibration Vascular disease | Remove to warm area Consult physician |

Note: Hypothermia is related to systemic cold stress, and the other disorders are related to local tissue cooling.

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Check your feet regularly to see if they are wet. If your feet get wet (through sweating or immersion), stop and dry your feet and put on dry socks. Periodic air drying, elevation, and massage will also help. Change socks at least once a day and do not sleep with wet socks. Be careful of tight socks which can further impair peripheral circulation. Foot powder with aluminum hydroxide can help.

Chillblains

- Caused by repeated exposure of bare skin to temperatures below 60 degrees
- Redness and itching of the effected area
- Particularly found on cheeks and ears, fingers and toes
- Women and young children are the most susceptible
- The cold exposure causes damage to the peripheral capillary beds, this damage is permanent and the redness and itching will return with exposure

Avoiding Frostbite and Cold related Injuries

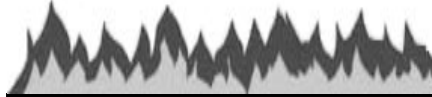
- "Buddy system" - keep a regular watch on each other's faces, cheeks, ears for signs of frostnip/frostbite
- Keep a regular "self check" for cold areas, wet feet, numbness or anesthesia

If at any time you discover a cold injury, stop and rewarm the area (unless doing so places you at greater risk).

excerpts from Outdoor Action Program, Rick Curtis, Princeton University

Check out Princeton University's Outdoor Action Program webpage for more in-depth information regarding cold weather injuries. www.princeton.edu/~oa/hypocold.html

FIRE INCIDENTS: 4TH QTR of 1998



| | | |
|-------------------------------|----------------|-----|
| October 1 - December 31, 1998 | | |
| Total Incidents | 35 | |
| Accidental False Alarms | 15 | 45% |
| Actual Fires | 5 | 15% |
| Intentional False Alarms | 1 | 03% |
| Investigations | 2 | 06% |
| Malfunctions | 11 | 31% |
| Bldg with most Incidents | WIS 4 WIH 4 | |
| October 1 - December 31, 1997 | | |
| Total Incidents | 20 | |
| Accidental False Alarms | 9 | 45% |
| Actual Fires | 2 | 10% |
| Intentional False Alarms | 0 | 0% |
| Investigations | 1 | 05% |
| Malfunctions | 8 | 40% |

Env. Health and Safety Staff

ADMINISTRATIVE SECTION

- Steve Eddington, Director
- Rick Works, Assistant Director
- Julie Honegger, Department Assistant

OCCUPATIONAL HEALTH & SAFETY SECTION

- Don Kunde, OSHA Safety Specialist
- Colleen Lucht, Fire/Life Safety Specialist

CONSTRUCTION MANAGEMENT SECTION

- John Berger, Training Program Coordinator
Construction Program Coordinator
- Russ Broadfield, Lead Program Coordinator
Asbestos Program Coordinator

ENVIRONMENTAL MANAGEMENT SECTION

- John Goodman, Hazardous Waste Specialist
Assistant Radiation Safety Officer

- Dr. Ken Jesse, Radiation Safety Officer

- Brad Hofferkamp, Student Safety Officer

- Jake Zarley, Student Safety Officer

- Brian Sturtecky, Student Safety Officer

- Chad Keegan, Student Safety Officer

INDUSTRIAL HYGIENE SECTION

- Rick Works, Industrial Hygienist

RISK MANAGEMENT SECTION

- Jim Scott, Risk Manager
- Angie Kremer, Clerk

OEHS Web page--Is Here !

<http://oehs.ilstu.edu>

ILLINOIS STATE UNIVERSITY

ENVIRONMENTAL
HEALTH + SAFETY

If You DETECT FIRE OR Smoke

1. Activate Pull station to sound building fire alarm.
2. Call 911
3. Evacuate the building and remain outside until emergency personnel investigate the situation.

Corrections

Website for EPA fact sheet on ozone generators is <http://www.epa.gov/iaq/pubs/ozonegen.html>

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