

# Flashpoint

## SPOTLIGHT ON SAFETY

University of Notre Dame  
Risk Management & Safety 631-5037

June 2005



It's the Good Ol' Summertime in South Bend, In..... Remember...

Sandals and open-toed shoes ARE NOT acceptable

footwear in labs on campus. If you choose to wear them to campus, have a pair of closed-toed shoes in the lab to change into.



### Summer Lab Cleanouts....

If your lab is going to use summer break to do major housecleaning of old chemicals, Risk Management wants you to know:

A separate waste pick up may have to be scheduled. Because of current workloads and other lab cleanouts it could be up to 1 week from the time you call.

Also, because of DOT shipping requirements, a list of all the chemicals must be submitted prior to the pick-up.

If you intend to do a major cleanout, you may want to contact Lisa at [bognar.6@nd.edu](mailto:bognar.6@nd.edu) or 1-5037 to get on the schedule and confirm necessary labeling and packaging requirements.

### EYE PROTECTION REQUIRED!

There have been a couple of recent accidents where chemicals (conc. sulfuric acid and osmium tetroxide) and have gotten in or near the eyes of lab workers. A reminder, as stated in the Chemical Hygiene Plan and the Personal Protection Equipment Policy for Laboratories on campus: Eye protection is required ANY time you are handling chemicals, radioactive materials or biological agents. GOGGLES are required if there is a splash hazard or you are working with corrosive materials.



**Make sure you are wearing proper eye protection.**

Check this out!  
Change in Procedures for  
Radioactive Waste

In order to comply with DOT regulations and continue to provide an efficient waste pick-up system, we ask that ALL aqueous and organic liquid radioactive waste containers be wipe-tested prior to pick-up. Any containers with wipe tests indicating greater than 200 counts per minute must be cleaned and retested. Verification of the tests (eg. an L/S counter printout) must be included with the waste pick-up form. Waste not tested will NOT be removed.

### Waste Pickup Schedule Reminder:

Galvin	1 <sup>st</sup> and 3 <sup>rd</sup> Tuesdays 1:00PM – 3:00PM
Stepan/ Nieuwland	2 <sup>nd</sup> and 4 <sup>th</sup> Tuesdays 1:00PM – 3:30PM
Fitzpatrick Hall/ Cushing	3 <sup>rd</sup> Wednesday 1:00PM-2:30PM
Radiation Lab	4 <sup>th</sup> Thursday 1:00PM-2:00PM

## Laser Safety precautions

The safety rules for each laser classification can be summarized as follows:

### Class I Controls

No user safety rules are necessary.

### Class II Controls

- a. Never permit a person to continuously stare into the laser source if exposure levels exceed the applicable permissible exposure level for the duration of intended staring.
- b. Never point the laser at an individual's eye unless a useful purpose exists and the exposure level and duration will not exceed the permissible limit.

### Class III Controls

- a. Do not aim the laser at an individual's eye.
- b. Permit only experienced personnel to operate the laser.
- c. Enclose as much of the beam path as possible. Even a transparent enclosure will prevent individuals from placing their head or reflection objects within the beam path. Terminations should be used at the end of the useful paths of the direct and any secondary beams.
- d. Shutters, polarizers, and optical filters should be placed at the laser exit port to reduce the beam power to the minimal useful level.
- e. Control spectators.
- f. A warning light or buzzer should indicate laser operation. This is especially needed if the beam is not visible, i.e., for infrared lasers.
- g. Do not permit laser tracking of non-target vehicles or aircraft.
- h. Operate the laser only in a restricted area—for example, in a closed room without windows, and place a warning sign on the door.
- i. Place the laser path well above or well below the eye level of any sitting or standing observers whenever possible. The laser should be mounted firmly to assure that the beam travels only along its intended path.
- j. Always use proper laser eye protection if a potential eye hazard exists for the direct beam or a specular reflection.
- k. A key switch should be installed to minimize tampering by unauthorized individuals.
- l. The beam or its specular reflection should never be directly viewed with optical instruments such as binoculars or telescopes, unless with sufficient protective filters.
- m. Remove all unnecessary mirror-like surfaces from within the vicinity of the laser beam path.

### Class IV Controls

- a. Fortunately, these high power lasers are seldom used outside of research laboratories and restricted industrial environments where personnel access is carefully controlled.
- b. These lasers should only be operated within a localized enclosure, or in a controlled workplace, or where the beam is directed into outer space. If a complete local enclosure is not possible, laser operation indoors should be in a light tight room with interlocked entrances to assure that the laser cannot emit while a door is open.
- c. Eye protection is needed for all individuals working within the controlled area. If the laser beam irradiance is sufficient to be a serious skin or fire hazard, a suitable shielding should be used between the laser beam and any personnel.
- d. Remote firing with video monitoring or other remote (safe) viewing techniques should be chosen when feasible.
- e. Outdoor high power laser devices such as satellite laser transmission systems and laser radar (LIDAR) should have positive stops on the azimuth and elevation traverse to assure that the beam cannot intercept occupied areas or non-target aircraft.
- f. Beam shutters, beam polarizers, and beam filters should always be limited to use by authorized personnel only. The flashlamps in optical pump systems should be shielded to eliminate any direct viewing.
- g. Backstops should be diffusely reflecting, fire resistant target materials where feasible. Safety enclosures should be used around microwelding and microdrilling work places to contain hazardous reflections from the work area. Microscopic viewing systems used to study the work areas should ensure against hazardous levels of reflection of laser irradiation back through the optics.

Any questions regarding lasers and their use, contact Andy Welding, [welding.1@nd.edu](mailto:welding.1@nd.edu), or 631-5037.