Lessons Learned

Eye Exposure to Specular and Diffuse Reflections

What happened?
A student conducting a physics experiment was briefly exposed to specular and diffuse reflections from a continuous wave 975 nm invisible laser beam while not wearing laser eye protection. The student was applying oil to an objective lens with a glass stick when it was noted that the laser was still on. The student was immediately referred to the optometry clinic and was promptly examined. No eye damage was found.

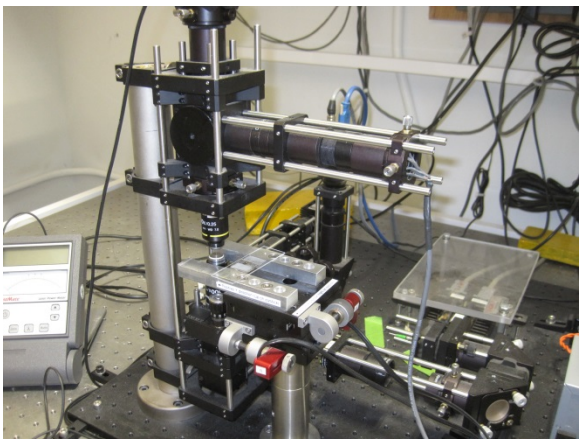

Photo 1 – Optical trap set-up on a diode laser

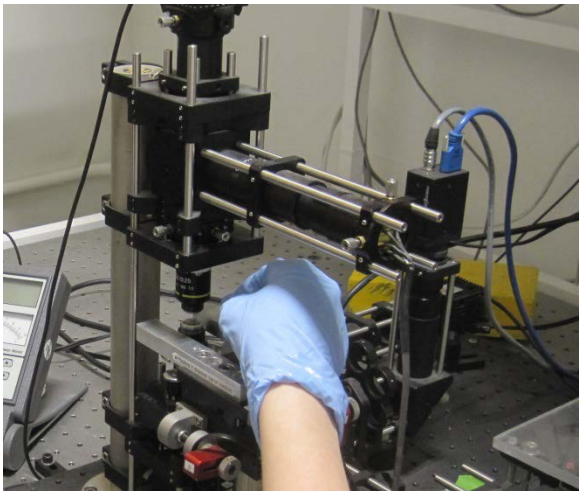

Photo 2 – Applying oil to the lens

What went right?

- The student immediately stopped work and alerted their professor as soon as they suspected that they had been exposed to laser reflections.
- The researchers immediately notified the campus laser safety officer regarding the incident for prompt follow-up.

What should have been done differently?
The student should have worn protective eye wear throughout the laser handling procedure. The procedure was not completely clear on this fact.

What was the cause of the eye exposure?
The student was not wearing laser eye protection when the laser was on and oil was applied to the lens with a glass stick that resulted in specular and diffuse reflections.

What corrective actions have been taken?
The procedure was modified and signs were posted in the lab to make it clear that laser eye protection is required at all times during the procedure.

Lessons Learned

- Laser standard operating procedures (SOPs) should be reviewed for operational accuracy.
- SOPs must clearly state when laser protective eyewear is required.

More information about laser safety can be found on the EH&S website:

ehs.berkeley.edu/laser-safety

For additional assistance, contact the campus laser safety officer at lso@berkeley.edu or (510) 643- 9243, Lessons Learned date: 10.2016