

## Chapter 5: General Instruction for Auxiliary Personnel

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### INSTRUCTIONS FOR FACILITIES MANAGEMENT SERVICES PERSONNEL

#### A. Introduction

Laser and laser components are found in many locations at USC. Some general guidelines for specific areas are outlined below.

#### B. Laser Area Instructions

Do not enter any of these areas without specific permission to do so either from someone in authority in that area or Laboratory Safety. When specifically authorized to enter such an area:

- Follow instructions.
- Do work required.
- Leave - do not waste time.

#### C. ROOMS MARKED “ CAUTION” or “ WARNING, LASER AREA”

STEP	PROCEURE
1	Enter room unless specific signs say “ Keep Out”
2	Seek someone who works in the room and explain the work that is to be done.
3	Before you begin, have laboratory personnel check by test to make certain that the work area has no beams.
4	If you cannot find someone in the area to check with, leave the room and ask someone at the department for assistance in locating someone who works in that room.
5	If it is an emergency repair job and you cannot get help at the department office, call Laboratory Safety.
6	If the area is free of laser beams, proceed with the job. While in the area: <ul style="list-style-type: none"><li>• Do not smoke, eat, or drink.</li><li>• Do not enter other areas marked off as laser areas.</li><li>• Watch for signs of possible open beams, or hazardous chemicals.</li></ul>

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### Important

Call Laboratory Safety at any time, if in doubt about any procedures for handling anything marked, “Lasers” or “Hazardous Materials”.

### INSTRUCTIONS FOR DEPARTMENT OF PUBLIC SAFETY PERSONNEL

#### A. Access to Laser Areas

Lasers and laser components and materials are found in many locations at the University. This poses little or no hazard to security personnel if the guidelines below are followed:

- A location labeled “Warning, Laser Area” should not be entered when the laser is in operation, unless the situation is life threatening.
- A location labeled, “Caution, Laser Area” can be entered for a short time to protect life and property, but for routine matters, contact an Authorized Laser Operator (usually a graduate student, post doctoral or fellow or a technician).
- A location with no labels will be safe to enter unless specifically marked “Do Not Enter”. While in the area:
  - Do not handle containers with chemicals.
  - Do not smoke, eat, or drink in these areas.
  - Be wary of evidence of chemical spills.
  - Be wary of high voltage lines and instruments.

#### B. When to Notify the Laser Safety Officer

You should notify the Laser Safety Officer or Laboratory Safety Office:

- Before entering a laser area if no personnel is around (with the exceptions noted above).
- If any container labeled with a chemical is found broken, crushed or leaking.
- In case of fire in any room labeled “Laser Area”.

## **Chapter 5: General Instructions for Auxiliary Personnel**

### **INSTRUCTIONS FOR HOUSEKEEPING PERSONNEL**

#### **A. Introduction**

In order to prevent any incident or accident when working in areas labeled “Caution, ...” or “Warning, Laser Area”, it is important that housekeeping personnel are aware of the proper way to conduct themselves in such areas.

#### **B. Conduct in Laboratories and Store Rooms**

Follow these guidelines in laboratories:

- Note the “Warning - Laser Area” sign at entrance to the area.
- Look for and obey any other special instructions at entrances, such as “Do Not Enter” or “Janitor, Floor Work Only”, etc. If there are no special instructions, enter the room.
- Do not smoke, eat, drink, or apply cosmetics while in these areas.
- Do required work as quickly as possible, and then leave the area.
- Watch for problems:
  - If you see a spilled or leaking container, leave the area and contact your supervisor.
  - If you have stepped in something that you think is a hazardous chemical, leave your shoes inside the door to the room, and contact your supervisor.
- If you do not understand what to do, do not enter the area.
- Lock the door to the room when you leave.

## Appendix A

### ACCEPTABLE TRAINING AND EXPERIENCE FOR USERS OF LASER SYSTEMS

In order to create a safe working environment Laboratory Safety provides comprehensive laser safety training to all individuals working with Class 3b or 4 laser systems. The following areas will serve as the foundation of instruction for users routinely working with or around lasers:

- Fundamentals of laser operation - understanding the physical properties of lasers, construction of laser housing units, types of wavelengths, pulse shapes, modes, power/energy, laser terminology.
- Bio-effects of laser radiation on the eye and skin – understanding the MPE guidelines and inherent biological dangers of laser exposure.
- Significance of specular and diffuse reflections.
- Non-beam hazards of lasers.
  - Laser dyes and solvents – inherent hazards, proper handling and preparation, MSDS.
  - Fire and explosion hazards.
  - Optical fiber and ultraviolet hazards.
- Ionizing radiation hazards – principals of ionizing radiation.
- Laser and laser system classifications – differences between Class 2, 3a, 3b, and 4 lasers.
- Control measures – eye and skin protection, protective barriers and curtains, warning signs, laser safety training, LSO, interlocking mechanisms.
- Overall responsibilities of management and employee – training, monitoring, audits, tracking usage and equipment.
- Medical surveillance practices – baseline eye examination: ocular history, Amsler Grid test, and visual acuity.
- Laser dyes and solvents – inherent hazards, proper handling and preparation, MSDS.

All primary operators of laser systems will need to complete the laser safety class provided by Laboratory Safety. Existing users and new personnel will have to satisfy training requirements by enrolling in this brief course tailored for Class 3b and 4 lasers. Upon successful completion, an annual refresher class will be required that is to be conducted by the Principle Investigator.

Appendix B

EXAMPLE OF CLASS 4 LASER SIGN

**DANGER**

**LASER RADIATION**

AVOID EYE OR SKIN EXPOSURE TO  
DIRECT OR SCATTERED RADIATION  
EYE PROTECTION REQUIRED



**CLASS 4**

Appendix B

EXAMPLE OF CLASS 3B LASER SIGN

**DANGER**

**LASER RADIATION**

AVOID DIRECT EXPOSURE  
TO BEAM  
EYE PROTECTION REQUIRED



**CLASS 3b**

## **Appendix C**

### **FORMS**

LSP\_C.1 **LASER REGISTRATION; TRAINING AND EXPERIENCE; AND  
HAZARD EVALUATION FORM**

**LSP\_C.2 TRANSFER OF LASER SYSTEM/COMPONENT FORM**

**LSP\_C.3 LASER USAGE FORM**