

UNIVERSITY OF KANSAS - LAWRENCE CAMPUS

LABORATORY SAFETY MANUAL

PART V-LASER SAFETY PLAN

Appendix 8.3 - Procedures for Obtaining Authorization for Level III and IV Operations

The prospective Authorized Laboratory Supervisor is encouraged to discuss plans with the Laser Safety Office very early in the planning stages. The Laboratory Supervisor shall complete and submit an updated Lab Hazard Registration form to EHS whenever plans for a change in the type and/or level of activities at Level III or IV are being made. Upon receipt of the LHR form, EHS shall provide the Laser Registration and Laser-Specific Safety Plan to the Laboratory Supervisor. This form provides instructions concerning the types of safety information (engineered controls, facilities, SOP's) that need to be addressed.

The Laboratory Supervisor shall complete and submit one electronic copy of the proposed Laser-Specific Safety Plan to the EHS-LSO for Level III or Level IV lasers. The EHS-LSO/Laser Safety Subcommittee shall review the proposed Laser-Specific Safety Plan for adequacy in safety at the level of activities requested. This evaluation will be based upon the proposed safety facilities/equipment and appropriate standard operating procedures considering any applicable federal, state and local regulations and the requirements of this Manual.

If deficiencies in the proposed Laser-Specific Safety Plan (s) are identified by the EHS-LSO or Laser Safety Subcommittee, the Laboratory Supervisor shall plan appropriate changes which will then be resubmitted by the Laboratory Supervisor for approval. EHS-LSO shall notify the Laboratory Supervisor of that approval.

Upon receiving approval, the Laboratory Supervisor shall prepare the laboratory to meet all conditions specified in the approved plan and then request an inspection by EHS-LSO. Laser procurement and installation shall be accomplished in collaboration with the EHS-LSO and shall not be energized until the EHS-LSO issues the Authorization. No individual may use Level III/IV lasers until they have satisfactorily documented all required training. This includes the Laboratory Supervisor and all other potential users. When all the conditions of the approved LSSP(s) have been met as verified by EHS-LSO, a written Safety Authorization shall be issued to the Laboratory Supervisor which references all documents associated with the approved Laser Specific Safety Plan.

Upon receiving the Safety Authorization from EHS-LSO, the Laboratory Supervisor may initiate use of the materials/equipment under the conditions of the applicable Laser Specific Safety Plan and this Manual.

Laser Registration and Laser-Specific Safety Plan

Class 2, Class 3a and 3b, and Class 4 laser systems and all embedded lasers (a laser with a higher class than the laser system) must be registered with the Laser Safety Office. In addition, approval for procurement and installation of Class 3b and 4 lasers must be coordinated with the Laser Safety Office/Committee prior to obtaining the laser system. Engineering controls will be evaluated to verify that special safety features for the facility meet current requirements. Information that is not known at the time of registration may be completed later.

Please submit only the "Registration" (Part A) for embedded laser systems and for Class 2 and Class 3a lasers systems. Please submit the "Registration and Laser-Specific Safety Plan" (Part A and Part B) for Class 3b and Class 4 laser systems.

Registration - Part A

1. Name of Laboratory Supervisor: _____
Principle Operator (if appropriate): _____
2. Department: _____
3. Campus address: _____
4. Phone #: _____ E-mail: _____
5. Location of unit (building and room): _____
6. Laser

	a) Type: _____	b) Laser Class: _____
	c) Laser System Class: _____	
	d) Manufacturer/(homemade): _____	
	e) Model: _____	f) Serial #: _____
	g) Beam Wavelength (nm): _____	h) Beam at Aperture (mm): _____
	i) Power (maximum/used): _____	
	j) Continuous/Pulsed: _____	
7. The Standard Operating Procedures serve as the written laboratory specific standard operating procedures for embedded laser systems, and for Class 2 and Class 3a lasers systems. Any additional restrictions for this specific system - operating, access, security, or special health/medical susceptibilities - should be included with the registration and submitted to the Laser Safety Office.

Signed: _____ Date: _____

Part B-Laser-Specific Safety Plan for Class 3b and Class 4 Lasers

8. Provide the following information on experimental design:
- a) Is the beam exposed or enclosed? (Circle one.)
 - b) A diagram of the room with the location of the laser. Identify the laser control area and the nominal hazard zone.
 - c) A brief description of the proposed use of the laser system. Include sufficient detail to permit Committee evaluation of the adequacy of engineering controls.
9. Provide the following special considerations, if applicable:
- a) Procedures for alignment, maintenance, and/or service, including procedures for bypass of safety interlocks.
 - b) Description of planned equipment modifications/updates to the system.
10. Identify and evaluate the hazards as described below:
- | | | |
|---|--|---|
| <input type="checkbox"/> electrical (shock) | <input type="checkbox"/> target area | <input type="checkbox"/> chemical (dyes, gas, solvents) |
| <input type="checkbox"/> absorbing media | <input type="checkbox"/> atmospheric contaminants | <input type="checkbox"/> beam path |
| <input type="checkbox"/> fire protection | <input type="checkbox"/> severity of potential accidents | <input type="checkbox"/> noise/explosive/cryogenic |
11. Specify the personnel protective equipment that will be used.
12. Use the following check list to identify additional controls that might be needed for the laser system.
- | | |
|--|---|
| <p>Access controls</p> <p><input type="checkbox"/> door interlocks</p> <p><input type="checkbox"/> signs</p> <p><input type="checkbox"/> signals</p> <p>Beam Controls</p> <p><input type="checkbox"/> key-lock</p> <p><input type="checkbox"/> enclosures</p> <p><input type="checkbox"/> shutters</p> <p><input type="checkbox"/> stops</p> <p>Electrical Controls</p> <p><input type="checkbox"/> light on powersupply</p> <p><input type="checkbox"/> HV signs</p> | <p>Eye Protection</p> <p><input type="checkbox"/> type of eyewear</p> <p><input type="checkbox"/> optical density requirements for beam</p> <p>Room Design</p> <p><input type="checkbox"/> ventilation</p> <p><input type="checkbox"/> reflective surfaces</p> <p><input type="checkbox"/> windows/viewing area limited</p> <p><input type="checkbox"/> water/electrical supply</p> <p><input type="checkbox"/> potential fire hazards</p> <p><input type="checkbox"/> security</p> |
|--|---|
13. Note:
- a) Certification for training must be documented to operate or maintain the laser system. A current list of trained individuals will be kept on the appropriate form.
 - b) Any actual or suspected exposure must be reported immediately to the Laser Safety Officer and followed by appropriate medical surveillance.
 - c) The posting requirements will be met in cooperation with the Laser Safety Officer.
 - d) No unit may be transferred to another individual or destroyed without prior consultation with the Laser Safety Officer.
 - e) A log should be used to document the actual time that the equipment is being used.

Signed: _____

Date: _____