

APS Laser Training Procedure and Record

Scope

Following a mandate of the DOE Office of Sciences and as part of the policy for safe laser work the APS Laser Safety Committee has developed the policy that all laser control area supervisors (LCAS) are required to provide on-the-job training for laser alignments (Classes 3b and 4) within their laser control area (LCA). This form facilitates the process and overall serves multiple purposes:

- It serves as a guideline for on hand skills for any authorized laser user
- It provides an outline for the development of the actual training procedure for different laser systems.
- It ensures and records that the laser user has been exposed to all relevant topics and demonstrated to the LCAS that he/she understands the operations and complies with all procedures.
- Maintenance of training records

When to use this form

This form will be used initially when a new laser user applies for access to an LCA without an escort. The training record shall be updated as the training level of the laser user increases or decreases (reconfiguration of a laser setup generally requires retraining).

Upon completion of the training or segments thereof the laser user and LCAS shall sign and date the appropriate elements.

How to use this form

The form provided below has two sections. The first section is based on the *American National Standard for Safe Use of Lasers* (ANSI Z136.1 – 2000), Appendix C on general laser alignment safety management. The second part is only a suggested template that the LCAS shall contract or expand to cover all procedures and components within each LCA.

A copy of all on-the-job training forms applicable to the LCA shall be part of the standard operating procedure (SOP) for each LCA. The LCAS is responsible for maintaining training procedures and records that reflect current operations.

ANL Laser On-the-Job Training Procedure

LCA Location (Bldg., Rm.)	
ANL Laser Registration Number(s)	
LCA Supervisor (Print)	
Laser User (Print)	

Section 1: General laser safety for all authorized laser users

	Supervisor (Signature)	User (Signature)	Date
Completed ANL laser safety training <i>ESH120 ANL Laser Safety Training</i> <i>Eye exam arranged by the ANL medical center</i>			
Read and understand ANL ESH Manual section 6.2 on laser safety			
Read and understand LCA-specific procedures <i>Standard Operating Procedure (SOP) and other operating/ safety manuals</i>			
Understands entry restrictions and interlock system <ul style="list-style-type: none"> - <i>access during normal operation/ laser alignment</i> - <i>access for visitors and collaborators</i> 			
Demonstrated knowledge of cut-off systems, light indicators			
Proper eyewear chosen <ul style="list-style-type: none"> - <i>laser classification</i> - <i>laser wavelengths</i> 			
Awareness of specific hazards and safety issues <i>Example: RF sources, exposed electrical contacts (high voltage), toxicity of materials (laser dyes)...</i>			
Knows limits of operation without supervisor approval/ oversight			
General or normal maintenance and operation <ul style="list-style-type: none"> - <i>startup and shutdown procedures</i> - <i>cooling systems, gas systems</i> - <i>laboratory cleanliness</i> - <i>laser (key) access</i> - <i>emergency shutdown</i> 			

Section 2: Laser Alignment Safety and Authorization

Alignment of Laser System ...			
	Supervisor (Signature)	User (Signature)	Date
Laser classification			
Laser wavelength			
Read and understand the SOP and the alignment procedure			
Understand restricted access to LCA during alignment <i>Example: access allowed to necessary personnel only, appropriate area warning signs posted...</i>			
Proper eyewear chosen and use during the operation <i>Example: wavelength, optical density...</i>			
Appropriate opening/removal, and replacing of proper safety shields for alignment			
Using class II laser for alignment if possible			
Use lowest possible power from a high power laser for alignment			
Optical components and detectors in place <i>Example: integrity of lenses and mirrors checked, unobstructed beam path where necessary...</i>			
Use of appropriate beam stops <i>Example: use of protective barriers where laser beams could stray outside defined areas; terminate beams that might miss optics during alignment...</i>			
Proper use of beam viewing equipment for IR and UV radiation			
Adjustment of appropriate components and verification of results			