Chapter 10: Laser Safety

Laser Worker Approval Procedure

1 Purpose

The purpose of this procedure is to ensure that workers in laser facilities where Class 3B and Class 4 laser systems are in use are qualified. It covers approval of laser workers. It applies to workers, supervisors and points of contact (POCs), system laser safety officers (SLSOs), the laser safety officer (LSO), and Occupational Health.

Class 3B and Class 4 laser operation requires:

- Operation approval from the LSO
- A SLSO assigned responsibility for their safe operation
- A lab-specific standard operating procedure (SOP) document describing laser hazards and controls
- A laser controlled area (LCA) with access restricted to laser workers and persons they may escort, as described in the SOP, if there may be accessible Class 3B or Class 4 laser radiation. *(Note some lasers may be configured and approved only for Class 1 – Laser Enclosed operation, in which case an LCA may not be required.)*

(See Laser Safety: Class 3B and Class 4 Laser Operation Requirements for details.)

SLAC has two categories of laser worker:

1. Qualified laser operator (QLO)
2. Laser controlled area (LCA) worker

QLOs and LCA workers are generally approved for the laser facility where they will work and receive both general and facility/LCA-specific training so they can access an LCA and perform work there. (Some QLOs and LCA workers are unaffiliated with any facility; they receive general training only. This allows them to perform service work in any facility or to work at off-site, non-SLAC laser facilities.) QLOs receive additional training to become qualified to operate lasers and perform open beam alignment tasks. LCA workers are generally support personnel who need access to an LCA to perform work other than laser alignment tasks, for example to support accelerator or user facility laser operations.

- Who does this? Persons who need to perform work in an LCA that cannot be done under the laser controlled area visitor policy described in the SOP for the LCA (see Laser Safety: Laser Controlled Area Visitor Requirements)

- When? Before performing work that can only be done by QLOs and LCA workers

- How? As detailed in the procedure below, complete requirements for training and document review, and then request approval in the Laser Safety Tool. *(Note accessing this tool requires a SLAC*
Windows account, so all persons wanting to become a QLO or LCA worker should obtain a Windows account. There is a provision, however, for an SLSO or LSO to submit a request on behalf of a person who does not have a Windows account.)

2 Procedure

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<tr>
<th>Step</th>
<th>Person</th>
<th>Action</th>
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| 1.   | Worker | Determine whether you need to become a laser worker:  
  - If you need to perform work in an LCA discuss with the SLSO whether you need to be a laser worker. *(Note it is a significant time investment to become a laser worker and for the SLSO to provide the required training and supervision.)*  
  - If you may need to become a laser worker but not affiliated with a particular facility/LCA, contact the LSO to determine if this is necessary (for example, SLAC employees who may want to do laser work offsite). |
| 2.   | Worker | Get a SLAC system ID number if you do not have one. To verify you have a valid SLAC system ID, check the [SLAC Directory](#).  
  - If you do not have a SLAC system ID, ask your supervisor or point-of-contact (POC) to request one. |
| 3.   | Worker | Get a SLAC Windows account if you do not have one.  
  - If you do not have a SLAC Windows account, ask your supervisor/POC to request one.  
  This allows you to access the  
  - [SLAC Training Course Catalog](#), which provides course descriptions and information on how to take the courses, including links for web-based training  
  - [SLAC Training Assignment (STA)](#), which provides information on your training history and which courses your supervisor or point-of-contact has assigned you  
  - [Laser Safety Program Site](#), which has laser facility information, including links to SOP documents, and many other useful resources  
  - [Laser Safety Tool](#), where you can request approval to become a laser worker and can view database information for laser workers and laser facilities  
  *Note you can become a laser worker without having a Windows account; steps 4–11 below allow for that. A Windows account is recommended to facilitate your training and access to laser safety resources.* |
| 4.   | Worker | Have your supervisor/POC assign required courses on your STA.  
  All laser workers are required to complete the following courses:  
  - [ESH Course 253, Laser Worker Safety Training](#) (2.5-hour web course)  
  - [ESH Course 253ME, Laser Worker Baseline Medical Exam](#) (30-minute exam)  
  - [ESH Course 131, Laser Accidents and Lessons Learned](#) (1.5-hour classroom course)  
  - [ESH Course 120, Work Planning and Control Overview](#) (30-minute web course)  
  - [ESH Course 219, Environmental Safety and Health Orientation](#) (1-hour web course) |
Chapter 10 | Laser Worker Approval Procedure

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>5.</td>
<td>Worker</td>
<td>Review <a href="#">Chapter 10, “Laser Safety”</a></td>
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<td>6.</td>
<td>Worker</td>
<td>Complete course training assignments listed above in step 4.</td>
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<td>- The web-based courses are accessible from the <a href="#">SLAC Training Course Catalog</a> if you have a Windows account. If you do not have a Windows account or want to take a web course remotely, follow directions for “Manual Login” at <a href="#">SLAC Training: Web Based Training</a>.</td>
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<td>- For 253ME, contact the <a href="#">Occupational Health Center</a> to schedule an appointment. (You should schedule this at least one week in advance.)</td>
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<td>- For 131, this course is given by the LSO. It is scheduled monthly, usually on the first Monday of each month at 2:30–4 pm in B28, RM141. You can register for the class at the course catalog web page, or you can contact the LSO to find when the next class is scheduled. Typically, 1–2 additional classes per month are also scheduled as needed.</td>
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<td><strong>Note in some cases, conditional approval to become a laser worker can be granted before this course is completed. This requires a justification, that the person take the next available class, and that the laser worker be supervised until the course is completed; then a 30-day conditional approval can be given after which the person will become inactive if the course is not completed.</strong></td>
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<td>- For 253PRA, contact the SLSO for the appropriate laser facility/LCA and make arrangements with him or her to take the class. (If you are requesting to be an unaffiliated QLO, contact the LSO.)</td>
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<td>7.</td>
<td>Worker</td>
<td>Review the SOP document(s) for the relevant laser facility/LCA.</td>
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<td>- These are accessible from the <a href="#">Laser Safety Program Site</a> and are also available at the facility/LCA. If needed you can contact the SLSO for how to access.</td>
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<td>- Skip this step, if you will request to become a laser worker but not associated with a particular facility/LCA.</td>
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<td>8.</td>
<td>Worker</td>
<td>Interview with LSO.</td>
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<td>- If you are requesting to become a laser worker for the first time you need to schedule a 30-minute interview with the LSO. The interview will review features for the different laser classifications (1, 2, 3R, 3B and 4), responsibilities for laser workers, and what to expect for site-specific on-the-job training (OJT).</td>
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<td>9.</td>
<td>Worker</td>
<td>Request approval to be a laser worker.</td>
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<td>- Go to <a href="#">Laser Worker Approval</a>. This requires a Windows account to access. If you do not have a Windows account, you can ask the SLSO to submit the request on your behalf.</td>
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<td>- You will need to enter the following information:</td>
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<td>- Type of Work (QLO or LCA worker)</td>
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<td>- Facility Name (select “None” if requesting to be an unaffiliated QLO or LCA worker; otherwise select the appropriate facility)</td>
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<td>- Preferred Email, if different from SLAC email or if you do not have a SLAC...</td>
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## 10. LSO, supervisor/POC, and SLSO (if applicable)

### Review request.
- If the LSO, your administrative supervisor/POC, and the SLSO (if applicable) all approve the request, then you have completed approval as a laser worker and your information will be entered into the Laser Safety Tool database. You will be sent an associated notification e-mail.
- If any of the LSO, your administrative supervisor/POC, or the SLSO (if applicable) deny the request, a reason for the denial will be provided. You will be sent an associated e-mail notification.

## 11. Worker

### Complete site-specific OJT (if applicable)
- This is done with the SLSO, or a QLO they designate, at the laser facility/LCA. The OJT will be documented and the SLSO maintains the documentation for that, either in the laser facility’s safety binder or SharePoint site.

### Forms

The following forms are required by this procedure:

- **Laser Worker Approval.** Documents approvals for QLOs and LCA workers and must be completed before a QLO or LCA worker begins work with Class 3B and Class 4 lasers.

- **Site-specific training documentation for QLOs and LCA workers.** Example templates for OJT syllabus, OJT completion form, and QLO/LCA worker matrix are available on the Laser Safety Program Site (SharePoint).
4 Recordkeeping

The following recordkeeping requirements apply for this procedure:

- Worker and facility approval records are maintained in the Laser Safety Tool
- The SLSO maintains OJT documentation for the lab’s QLOs and LCA workers

5 References

SLAC Environment, Safety, and Health Manual (SLAC-I-720-0A29Z-001)
- Chapter 10, “Laser Safety”
  - Laser Safety: Class 3B and Class 4 Laser Operation Requirements (SLAC-I-730-0A05S-004)
  - Laser Safety: Laser Controlled Area Visitor Requirements (SLAC-I-730-0A05S-011)
  - Laser Safety: Student Requirements (SLAC-I-730-0A05S-002)

Other SLAC Documents
- Laser Safety Program Site (SharePoint)
- Laser Safety Tool
- SLAC Occupational Health Center
- SLAC Directory
- SLAC Training Assignment (STA)
- SLAC Training Course Catalog
- SLAC Training: Web Based Training
- ESH Course 219, Environmental Safety and Health Orientation (ESH Course 219)
- ESH Course 120, Work Planning and Control Overview (ESH Course 120)
- ESH Course 131, Laser Accidents and Lessons Learned (ESH Course 131)
- ESH Course 253, Laser Worker Safety Training (ESH Course 253)
- ESH Course 253ME, Laser Worker Baseline Medical Exam (ESH Course 253ME)
- ESH Course 253PRA, Laser Alignment Safety Practical (ESH Course 253PRA)