

## **24.01.01.E0.02 Lasers & Laser Systems**

Approved November 10, 2004  
Revised April 8, 2011  
Next Scheduled Review: April 8, 2014

Supplements System Regulation 24.01.01

### **Standard Administrative Procedure Statement**

The Texas Engineering Experiment Station (TEES) Engineering Safety Office is responsible for coordinating the agency's safety and registration programs for lasers with the Laser Safety Officer (LSO).

### **Reason for Standard Administrative Procedure**

This Standard Administrative Procedure (SAP) is provided as a guide to implement System Regulation 24.01.01, Supplemental Risk Management Standards, and comply with the Texas Radiation Control Act, Title 25 Texas Administrative Code (TAC) Paragraph 289.301, Registration and Radiation Safety Requirements for Lasers (as amended).

### **Procedures and Responsibilities**

#### **1. GENERAL**

The term LASER is an acronym for Light Amplification by Stimulated Emission of Radiation. Light can be produced by atomic processes which generate laser light. A laser typically consists of an optical cavity, a pumping system, and an appropriate lasing medium.

In recent years, lasers and laser systems have found many applications in the engineering, biological, and industrial fields. Engineering research continues to explore new applications of lasers and laser technology.

#### **2. LASER SAFETY**

Lasers produce monochromatic high intensity light beams, frequently capable of causing significant eye damage, tissue burns, and other potentially harmful exposures through both beam and non-beam hazards. Laser safety refers to optimizing the safe design and use of laser equipment to further the use of laser technology with minimum risk to safety and health.

#### **3. LASER SAFETY PROGRAM**

The Laser Safety Program provided by the TAMU Environmental Health and Safety Department (EHSD) sets forth controls and safety guidance for research and educational activities involving lasers. It applies to all TAMUS members in

Bryan/College Station. It is established to institute prudent safety practices and to meet the requirements of Title 25 Texas Administrative Code 289.301. If any conflict occurs between this Program and the Code, the latter shall prevail.

Further information and guidance on laser safety is available at [http://engineering.tamu.edu/safety/web/guidelines/trc\\_lasersafe.htm](http://engineering.tamu.edu/safety/web/guidelines/trc_lasersafe.htm)

#### 4. LASER USE PERMIT

Affected lasers possessed, purchased, donated, manufactured, created, assembled or otherwise received by or available to any person or entity at TEES shall have a Laser Use Permit. Application for the Permit shall be tendered to the EHSD Laser Safety Officer (LSO) by the receiving party. For each laser that is rendered permanently inoperative by disassembly or destruction, or which is removed from TEES control by gift, surplus designation, or transfer to a non-institution entity, the person holding the permit (Permittee) shall provide information regarding the condition or destination to the EHSD LSO.

Download a copy of the Laser Permit/Registration Form at [http://engineering.tamu.edu/safety/web/guidelines/laser\\_permit\\_application.pdf](http://engineering.tamu.edu/safety/web/guidelines/laser_permit_application.pdf)

Each Class IIIb or IV laser in a TEES facility or operation, shall be registered, and shall have a Laser Use Permit issued by the EHSD LSO. The Permittee is the responsible person whose name appears on the Permit for the laser. Typically, this is the Principal Investigator, and must be permanent faculty or staff (not a postdoctoral researcher or a graduate student).

No affected laser or laser system may be operated by any employee without a valid Laser Use Permit from the EHSD LSO. Each permitted laser shall be operated in compliance with the university's Laser Safety Program. Compliance shall be determined by the EHSD LSO.

#### 5. TEES LASER INVENTORY

The TEES Fiscal Office shall establish an Expenditure Object Class Code (EOCC) for Class IIB and IV lasers. The Property Office will review vouchers submitted with an EOCC indicating the purchase of Class IIIB or IV lasers. Information regarding the description, location, division and individual responsible for the laser will be forwarded to the Engineering Safety Office. The Engineering Safety Office will provide a copy of laser permit application to the Principal Investigator and/or Division purchasing the laser.

#### 6. TRAINING

Every person who operates or works with a laser shall complete the university's General Laser Safety Training (GLST), or an approved equivalent. Persons

completing GLST shall also complete specific laser safety training given by the Permittee or Division Laser Safety Officer (DLSO). No person may work in a Nominal Hazard Zone (NHZ) prior to completing both laser safety-training classes. The university provides GLST at no charge to TAMUS laser users; register online at: <http://ehsd.tamu.edu/Training.aspx>.

## 7. TEES DIVISION LASER SAFETY OFFICER

Each TEES Division (Department, Center or Laboratory) with permitted lasers shall designate a Division Laser Safety Officer (DLSO). This person may be a Permittee or a delegate, but shall be a budgeted employee. (Normally the Permittee retains the function and title of the DLSO.) The DLSO shall maintain the Laser Safety Program for the individual lasers in the affected Division, Department, Center, or laboratory. The DLSO, acting under the permit's authority, has the responsibility to institute corrective actions including shutdown of laser operations when necessary due to unsafe conditions.

## 8. LASER SAFETY SURVEY

The TEES Permittee or DLSO shall ensure that a Laser Safety Survey is conducted for each laser prior to initial use. The survey shall be performed at least quarterly, and shall be performed prior to operating a laser for the first time after assembly, maintenance, or modification of the beam path, operating wavelength, or power level. Survey records shall be retained by the Permittee or DLSO, for inspection by the University LSO.

## 9. INJURY & INCIDENT REPORTING

9.1 Each permittee shall immediately seek appropriate medical attention for the injured individual and notify the Division Safety Officer and the Engineering Safety Office, of any exposure injury involving a laser in a TEES or TAMU facility or operation. The Engineering Safety Office shall be notified of any non-injury incident (near miss) which involves potential exposure to laser radiation exceeding the Maximum Permissible Exposure (MPE). A written summary of an injury or non-injury incident shall be forwarded to the Engineering Safety Office not later than two (2) working days following the incident. Records of any incident and follow-up shall be maintained by the Permittee or DLSO.

An Incident Reporting Form is available at <http://engineering.tamu.edu/safety/>.

9.2 A [First Report of Injury](#) Form, should be completed and forwarded to TEES Personnel Services (fax 458-7720) in order to appropriately notify the TAMUS Office of Risk Management and Safety and initiate Workers' Compensation Insurance processes.

## **Related Statutes, Policies, or Requirements**

[Regulation 24.01.01, Supplemental Risk Management Standards](#)

### **Contact Office**

Engineering Safety Office  
(979) 845-4986