

LA TROBE UNIVERSITY

LASER SAFETY PROCEDURES

1. POLICY AND SCOPE

1.1 The University Safety Policy is the enabling policy. The following statement is a specific requirement of that policy:

- The University recognises its obligation to take reasonable precautions to protect the safety of its employees, students and visitors while they are on the premises.

1.2 The Laser Safety Procedures are designed to ensure the safety of University employees and students using lasers in the course of their employment, teaching or research and visitors to the University.

1.3 A system of laser classification is given in the Australian Standard 2211-1991 "Laser Safety", and is based on the accessible emission limits (AELs). The classification system is summarised here:

Class 1 lasers are either inherently safe or safe by virtue of their engineering design.

Class 2 lasers are low power devices which little or no potential hazard. They are not intrinsically safe, but the aversion responses of the eye will normally provide protection.

Class 3A and 3B lasers emit higher levels of radiation than Class 2.

Class 3B (restricted) lasers can operate at the same power levels as class 3A lasers but have higher power density.

Class 4 lasers are high power devices and are capable of producing hazardous diffuse reflections and skin injuries. They may also constitute a fire hazard.

1.4 These Procedures only apply to those lasers used in departments for teaching or research. For other applications of lasers, contact the University Radiation Safety Officer for advice.

2. REGULATIONS AND CODES OF PRACTICE

2.1 Legal requirements

Victorian Occupational Health and Safety Act 1985

2.2 Standards and codes of practice relevant to laser safety at La Trobe University

Australian Standard AS2211-1991 "*Laser Safety*"

3. RESPONSIBILITIES

3.1 The University Radiation Safety Officer (URSO) is responsible for:

- a) The co-ordination, implementation and review of the University Laser Safety Policy and Procedures.

- b) Providing advice and assistance on laser safety matters to Department Laser Safety Officers and others in the University.
- c) Maintaining detailed records, registers and inventories on laser safety matters.

The URSO has the authority within the University to:

- d) Direct that any unacceptable practice involving laser radiation cease immediately.
- e) Vary or waive the application of the University's Laser Safety Procedures within the scope of the Regulations and prescribed standards.

3.2 The Chairperson is responsible for:

- a) Nominating the Department Laser Safety Officer (LSO) where Class 3A lasers or above are used, and ensuring they have the resources, training and authority to perform the required duties.
- b) Ensuring that the conduct of laser radiation work within the Department conforms with the requirements of relevant standards and codes of practice.
- c) Ensuring that proper liaison is maintained between Department and the URSO.
- d) Ensuring that the Department Laser Safety Officer's laser safety reports are provided and recommendations are acted upon.

3.3 The Department Laser Safety Officer (LSO) is responsible for:

- a) Supervising and controlling the acquisition, purchase and use of laser radiation sources within the department.
- b) Coordinating a laser radiation monitoring programme of regular surveys and inspections.
- c) Ensuring that persons using lasers within the department have received appropriate training or instruction in radiation hazards associated with their work.
- d) Ensuring immediate action is taken in the event of unsafe practices, accidents or emergencies.
- e) Liaising with the URSO on matters involving laser radiation safety, monitoring and control procedures within the Department.
- f) Submitting an annual report to the Chairperson, detailing laser radiation activities conducted within the department, and particular issues arising.

The LSO has the authority within the department to:

- g) To direct that any unacceptable practice involving laser radiation cease immediately.

4. LICENCES AND REGISTRATIONS

- 4.1 The URSO shall advise LSOs of any regulatory requirements for laser plant and operator certification.
- 4.2 The LSO shall ensure that all laser regulatory and certification requirements are complied with.

5. TRAINING

- 5.1 All persons using class 3A lasers or above must have received appropriate training or instruction before commencing work involving laser radiation.
- 5.2 The LSO shall conduct or coordinate training courses to provide new staff and students with the background to safety use lasers.
- 5.3 Training costs shall be met by the department.

6. PURCHASE OR ACQUISITION OF LASERS (Class 3A lasers or above)

- 6.1 Details of all intended purchases or acquisitions of class 3A lasers or above, or changes to existing lasers and facilities, shall be forwarded to the URSO by the LSO, Laboratory Manager or Administrative Officer as appropriate.
- 6.2 The LSO shall assess all new Class 3A lasers or above and changes to existing facilities for adequate safety measures and compliance with prescribed standards and codes of practice.
- 6.3 The LSO shall prepare an assessment report for the Department, including any recommendations for precautions and control measures to ensure relevant safety measures are incorporated. *(If the Department has not appointed an LSO, the URSO should be consulted directly).*
- 6.4 A copy of the report shall be forwarded to the URSO.
- 6.5 It is recommended that the purchase requisition or contract of sale specifically include the regulatory standard, code of practice or any other relevant safety standard to which the apparatus is expected to conform.
- 6.6 Written operating and safety procedures shall be developed and implemented for each area in which Class 3A lasers or above are used.

7. INSPECTION AND MONITORING (Class 3A Lasers or above)

- 7.1 The LSO shall regularly inspect each laser of Class 3A or above to ensure compliance with relevant standards and codes of practice. A general checklist is given in Appendix A.
- 7.2 The inspection shall be conducted annually, or more frequently depending on the usage.

8. HEALTH SURVEILLANCE (Class 3B Lasers or above)

- 8.1 All persons operating Class 3B lasers or above must undergo eye examinations:
- a) Prior to using Class 3B lasers or above; and
 - b) On termination of employment or cessation of studies or research
- 8.2 Referrals for eye examinations shall be coordinated by the University Health Service.
- 8.3 Costs of eye examinations shall be met by the department.

9. EMERGENCY PROCEDURES

- 9.1 Persons involved in an actual or suspected exposure in excess of the maximum permissible exposure must be referred immediately to the University Health Service.
- 9.2 Incidents involving exposure to laser radiation shall be reported immediately through the LSO to the URSO.
- 9.3 A written incident report shall be submitted by the department to the URSO as soon as possible after the incident.
- 9.4 The URSO shall notify the Occupational Health and Safety Authority of serious incidents involving laser radiation in accordance with regulatory requirements.

Approved by Council on 2/8/93 (min. ref. 281.8), C93/81(M).
Procedural alterations may be made by the OH&S Committee.
Changes in management authority may only be made by Council.

Appendix A - Inspection Log Book

The following items (where applicable) are to be recorded in a log book kept near each Class 3A laser or above.

Periodical Inspections

- a) Date of inspection
- b) Fixed and removable shielding and enclosures
- c) Interlocks
- d) Beam stop
- e) Warning lights, signs and labels
- f) Personal protective equipment
- g) Electrical cables