



University of
St Andrews

Laser safety - policy

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1. Introduction

Lasers generate significant quantities of optical power over small areas and at significant distances from the aperture. As a consequence, there can be significant risks associated with the use of such equipment. These include the risk of fire, thermal injuries to the eyes and skin as well as photochemical reactions in the eye and skin.

There is specific legislation addressing work with lasers, namely The Control of Artificial Optical Radiation at Work Regulations (AOR). This legislation requires the employer to determine if there is a significant risk of injury or harm to an employee due to artificial optical radiation. A suitable and sufficient risk assessment must then be undertaken, and appropriate and proportionate control measures must be implemented to eliminate or minimise the risk of injury.

A number of international standards and guidance documents set out in detail how to manage the risk arising from artificial optical radiation. The following policy is based on these documents, as well as those of the Health and Safety Executive (HSE), European Commission (EC) and Association of University Radiation Protection Officers (AURPO).

1.1. Intended Audience

This policy document is intended to be used by all staff and students within the University who use or encounter potentially hazardous lasers as a part of their work or studies.

While this policy covers laser pointers themselves this does not class someone using a laser pointer as a laser worker.

1.2. Where this Policy applies

This policy applies to all Schools, Units, and premises within the University, be that on University premises or out with the University, where that work being undertaken is under the control of the University.

1.3. Glossary

AEL	Accessible emission limit (the maximum laser radiation per class, usually expressed as watts per sq m.)
AUPRO	Association of University Radiation Protection Officers BS British Standard
CW	Continuous wave
ELV	Exposure limit value
EN	European Norm
AOR	Artificial optical radiation
DLSO	Departmental Laser Safety Officer (appointed by the Head of School or Unit)
HSE	Health and Safety Executive (www.hse.gov.uk)
ICNIRP	International Commission on Non-Ionising Radiation Protection
IEC	International Electrotechnical Commission
ISO	International Organisation for Standardisation
LED	Light emitting diode
MPE	Maximum permissible exposure
NOHD	Nominal ocular hazard distance
PPE	Personal protective equipment

ULSA	University Laser Safety Adviser (externally appointed by Director of EHSS)
ULSO	University Laser Safety Officer (appointed by the Director of EHSS)

2. Policy

The following sections define the University's Policy on the safe use of lasers.

2.1. Statement of Policy

This University will comply, so far as is reasonably practicable, with all legislation with regard to the safe use of lasers.

The Office of the Principal has ultimate authority for regulating work with lasers within the University.

A suitably qualified University Laser Safety Officer (ULSO) will be appointed by the Director of EHSS to provide advice to the Office of the Principal on laser safety.

A suitably qualified University Laser Safety Adviser (ULSA) may be appointed by the Director of EHSS to provide expert advice and support to the Office of the Principal on laser safety. However, the University is not legally obliged to appoint this post.

The University Radiation Hazards Management Group will have operational oversight of laser safety within the University, developing policy and monitoring compliance against that policy.

The Head of School or Unit has the responsibility for ensuring this policy is implemented within their School or Unit.

Each school or unit that works with potentially hazardous lasers shall appoint a Departmental Laser Safety Officer (DLSO).

All Line managers and supervisors have a duty to ensure that workers under their control comply with this policy.

All employees have a duty to ensure their safety and the safety of others by their acts and omissions when working with hazardous lasers.

All staff and students making use of potentially hazardous lasers as part of their activities relating to their University employment or studies must be appropriately trained prior to starting work with such devices. For the avoidance of doubt, this includes work both on and off University premises.

All visiting staff & students making use of potentially hazardous lasers must be appropriately trained with the evidence recorded in the University's radiation management system, prior to starting work with such devices.

All contractors, maintenance engineers etc., must provide evidence of appropriate risk assessments, method statements before arriving on site.

All staff and students making use of potentially hazardous lasers as part of their activities relating to their University employment must be registered as laser workers.

All potentially hazardous lasers must be registered on the University's radiation management system.

All laser systems are engineered to operate at no greater power than that required for the

task.

All laser pointers used in the University shall be Class 1 or Class 2 (less than 1mW in power). To ensure this, all such laser pointers should be purchased through ITS or be tested by the ULSO prior to use.

All Class 3B and Class 4 lasers where the beam is accessible must be operated in an enclosed room which is to be formally classified as a Laser Controlled Area.

Suitable and sufficient risk assessments for the use of hazardous optical radiation sources must be registered on the University's radiation management system. This would include Class 1 laser products that contain a hazardous laser which is accessible during routine and non-routine maintenance of the system.

An annual inspection of all potentially hazardous laser sources and associated facilities will be undertaken by each School or Unit.

EHSS will audit each School and Unit annually.

2.2. Governance and Operational Arrangements

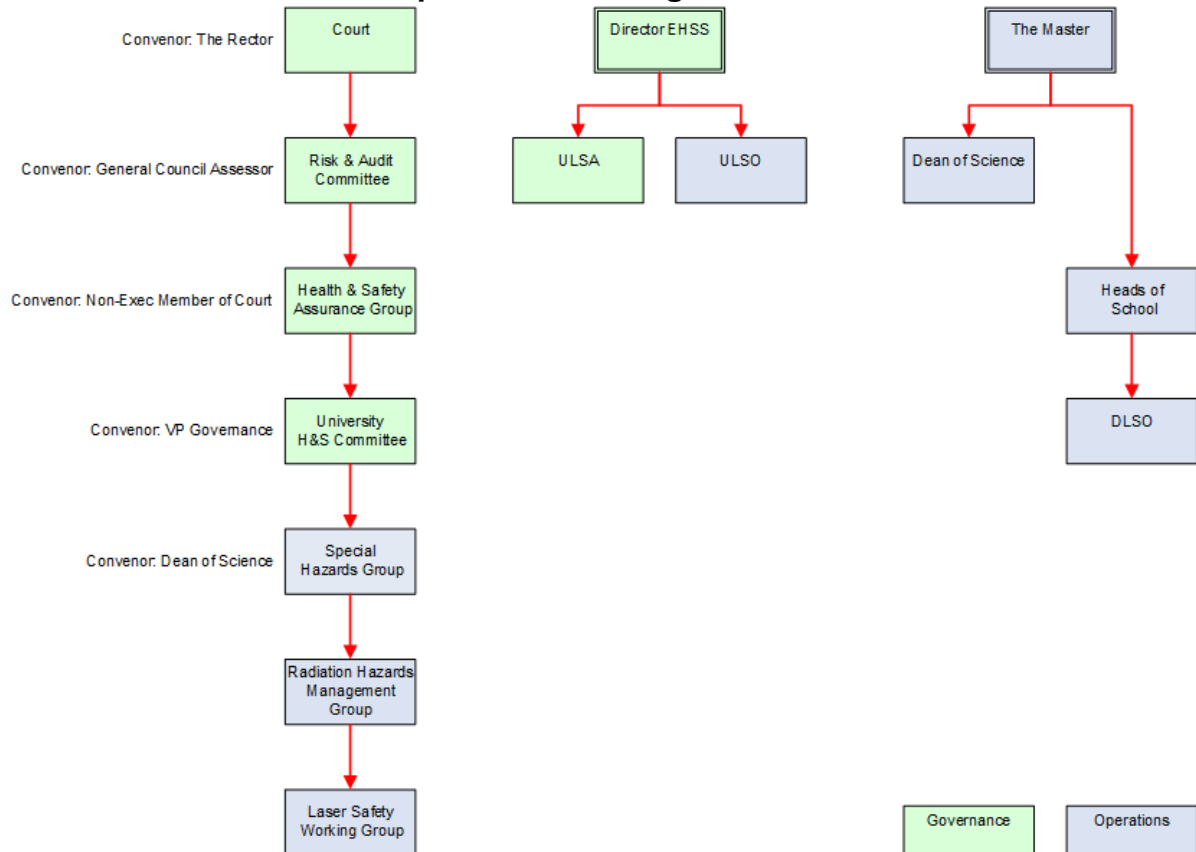


Figure 1. Organisational structure for the Management of Laser Safety within the University

3. Roles and Responsibilities

All staff, students, visitors and contractors are required to comply with this policy. Failure to comply could lead to formal disciplinary action being taken by the University.

3.1. University Laser Safety Adviser (ULSA)

The University may engage the services of an expert safety adviser to manage work with sources of high power artificial optical radiation, especially when hazardous levels of laser radiation are being used. The ULSA shall be appointed by and report to the Director of EHSS.

The ULSA shall:

- Provide expert advice to senior management and the Radiation Hazards Management Group.
- Advise and support the ULSSO.
- Develop and maintain suitable & sufficient policies and local rules, ensuring compliance with national and international regulations and standards.
- Conduct regular audits of the University's radiation management system and records in conjunction with the ULSSO.

3.2. University Laser Safety Officer (ULSO)

Irrespective of the arrangements for expert laser safety advice, the University shall appoint in writing, an internal University Laser Safety Officer to perform executive duties on behalf of the Director of EHSS, ensuring that the institution's policies & procedures relating to laser safety are followed.

The ULSSO shall:

- Maintain and administer the University's radiation protection database.
- Generate, review and maintain suitable and sufficient guidance documents that offer to all staff and students, an accessible interpretation of the regulations.
- Provide, review and maintain suitable and sufficient training courses and material.
- Conduct regular audits of laser facilities at school & unit level.
- Investigate all suspected laser accidents and incidents.
- Liaise with the Director of EHSS.

3.3. Radiation Hazards Management Group

The Radiation Hazards Management Group is the body responsible for developing policy, guidance and for reporting issues on laser safety. Policy shall be formally approved by the Director of EHSS.

3.4. The Laser Safety Working Group

As a sub-group of the Radiation Hazards Management Group, the Laser Safety Working Group will address specific laser safety issues handed down to it by the Radiation Hazards Management Group. The Group may also initiate its own lines of work.

The core membership of the group shall be:

- The ULSO.
- The DLSO for the School of Physics and Astronomy (as main users of laser in the University).
- Co-opted DLSO's from across the University who have skills and knowledge specific to the topic of interest may also be asked to join the group.

The Laser Safety Working Group shall:

- Report to the Radiation Hazards Management Group.
- Act as a forum for the discussion, development and promotion of laser safety.
- Be consulted on laser safety policy and local rules for controlled lab areas.
- Review and approve guidance documents and laser safety training courses and material.
- Review school/unit laser safety audit reports.
- Review accident or incident reports involving lasers.
- Review and approve all risk assessments and safe schemes of work where open beam work is conducted using hazardous levels of laser radiation. These reviews may be conducted electronically rather than in person.
- Be provided with resources necessary to conduct these duties.
- Seek the assistance of the ULSA as appropriate.

3.5. Departmental Laser Safety Officer (DLSO)

In Schools and Units where work with potentially hazardous laser radiation is undertaken, the Head of School or Unit, in consultation with the ULSO, should appoint in writing, a suitably qualified member of staff to undertake the role of Departmental Laser Safety Officer (DLSO).

The DLSO shall:

- Receive suitable LSO training from a reputable training organisation.
- Advise their Head of School/Unit, other staff and students on all matters relating to laser safety.
- Co-ordinate laser safety with their School/Unit Safety Co-ordinators.
- Approve new controlled laser areas.
- Ensure that all purchases, loans or gifts of lasers are identified, controlled and recorded on the radiation protection database as appropriate and that lasers are not released for use until suitable and sufficient risk assessments and control measures have been put in place.
- Ensure that all laser workers have undertaken suitable training and that it is recorded in the University's radiation management system.
- Ensure risk assessments are written, approved and made available to the laser workers.
- Verify the Maximum Permissible Exposure (MPE) and Nominal Ocular Hazard Distance (NOHD) calculations are correct and if applicable, the specification of, including the protection levels, of safety eyewear is appropriate.
- Review local rules for controlled laser lab areas within their School/Unit.
- Ensure research supervisors/principal investigators conduct monthly inspections

of their labs/laser systems and that adverse findings are being acted upon.

- Conduct annual audits of laser labs/laser systems, paying particular attention to any system where open beam work with potentially hazardous lasers is conducted.
- Recommend to the Head of School/Unit when work with any laser system found to be unsafe, or where the risk assessment, control measures, worker training, PPE etc. is unsuitable, is stopped immediately.
- Advise research supervisors/principal investigators on the design and operation of designated laser labs.
- Approve and co-ordinate all laser maintenance operations.
- Receive reports of all suspected laser accidents and incidents.
- Conduct incident investigations in conjunction with the ULSO.

3.6. Line Managers, Research Supervisors & Principal Investigators

The day-to-day health and safety management of individual research labs and/or projects is normally the responsibility of the Research Supervisor or Principal Investigator. They must ensure that:

- All laser workers undertake appropriate laser safety training and training in relevant operational techniques.
- The DLSO is informed of the intention to bring on-site a laser prior to its purchase or loan and arrival.
- All laser equipment brought in is fit for purpose and safe to use.
- All lasers are engineered to operate with no greater power than required for the task.
- Suitable and sufficient risk assessments and safe schemes of work are approved prior to the start of any work involving lasers.
- For those rare cases where work is required on unenclosed hazardous levels of laser radiation, the risk assessment contains a robust justification for the work and that it has been approved by the DLSO or ULSO.
- Laser workers are given access to the relevant risk assessments and safe schemes of work and that they are effectively trained in the relevant operating techniques.
- Calculations of the Maximum Permissible Exposure (MPE), Nominal Ocular Hazard Distance (NOHD) and the protection level of any protective eyewear are made.
- Inexperienced staff are adequately trained and supervised.
- All lasers, laser apertures, beam paths, interlocked panels etc. are appropriately labelled, and controlled laser areas are clearly identified.
- Arrangements are in place for laser safety eyewear to be provided and worn by any people working with unenclosed hazardous levels of laser radiation, and that training is given in the correct use and maintenance of this eyewear.
- Regular safety inspections are undertaken of laser labs and systems and that any adverse findings are acted upon appropriately.
- Lasers are made safe prior to disposal or dealt with appropriately if they contain hazardous materials.
- Report all suspected laser accidents and incidents to the DLSO.

3.7. Laser Workers

All laser workers must:

- Observe the policies, local rules, guidance and safe schemes of work applicable to the lasers that they will be using and to follow the guidance of supervisors and the DLSO.
- Undertake appropriate laser safety training and training in relevant operational techniques.
- Not leave a laser experiment running unattended unless a risk assessment has established that it is safe to do so.
- Be responsible for their own safety and that of others who may be affected by their acts or omissions.
- Wear the appropriate protective eyewear when detailed in the risk assessment.
- Report any defects to protective eyewear or other forms of PPE to the DLSO.
- Immediately report all suspected laser accidents and incidents to the DLSO.

4. Registration of Laser Workers

All staff and students working with potentially hazardous lasers (e.g., Class 1M, 2M, 3R, 3B and Class 4) must be registered as a laser worker in the University's radiation management system. This should include undergraduate project students undertaking projects within research groups/labs but not undergraduate students undertaking teaching lab experiments.

5. Registration of Lasers

All potentially hazardous lasers (Class 1M, 2M, 3R, 3B and Class 4) must be registered in the University's radiation management system.

Class 1 laser products that contain a potentially hazardous laser, and where that laser may require internal adjustment or maintenance, must also be registered.

Class 1 and Class 2 lasers, which includes laser pointers, do not need to be registered although it is strongly recommended that all lasers in research and teaching are registered.

6. Laser Pointers

Only Class 1 or Class 2 laser pointers can be used on University premises.

IT Services have sourced and will supply compliant laser pointers from reputable suppliers. University staff and students are strongly encouraged to purchase laser pointers via ITS.

Laser pointers purchased from other suppliers must be tested by the ULSO and identified by an appropriate label.

Laser pointers must not be modified in any way.

When operating laser pointers, users must ensure that they use them in a safe manner and do not expose themselves or others to the beam. Users must comply with the following during operation:

- Follow the manufacturer's safety instructions.
- Take care when operating the laser pointer.
- Keep the 'on' button depressed only when necessary.
- Do not keep the 'on' button depressed when not pointing at the screen.
- Do not point at or towards the audience.

- Do not point at mirrored surfaces.
- Never look into the laser aperture.
- Never look directly or stare into the beam/beam aperture when on.
- Never allow unauthorised use, especially by children.

7. Lasers in Entertainment Venues

Lasers are used extensively in entertainment and when used responsibly they pose no risk.

The University must ensure that any lasers used by University staff for entertainment purposes are used safely. This includes assessing and controlling risks associated with the laser lighting display through completion of a risk assessment. In addition, the University has a responsibility as a 'Venue' to ensure that 3rd parties who bring laser systems into a University venue operate them in a safe manner, and to ensure that the devices themselves are safe.

Most lasers used in entertainment are Class 3B or 4, and therefore require actions to control the risk of significant eye injury. The Artificial Optical Regulations state that the laser beam must be 3m above the head of the highest person in the area, and the reflected laser beams must be suitably controlled (e.g. covering of shiny/reflective surfaces).

The University organises laser safety training courses for the staff involved in the Byre Theatre, Student's Union, and Residential Business Services, with refresher training completed every three years. Other people who are likely to be involved with lasers in entertainment across the University can join these courses.

8. Controlled Laser Area

Any lab housing a Class 3B or Class 4 laser will be designated as a Laser Controlled Area.

Access should be restricted to trained and authorised persons only. Door interlocks must be provided on all lab doors where Class 3B or Class 4 lasers are in use and appropriate signage must be displayed both externally and internally to the lab.

It may be appropriate for other classes of lasers to be housed in a laser controlled area e.g. poorly controlled 3R or 1M & 2M lasers with magnifying optics, for which there is a realistic chance that the beam could be hazardous.

9. Risk Assessment

All lasers must be operated under a suitable and sufficient risk assessment. The level of detail in the risk assessment should reflect the risk posed by the laser. Class 1 lasers and Class 2 lasers (this includes laser pointers) can be operated under a generic risk assessment. Potentially hazardous lasers will require a risk assessment to be recorded in the University's radiation management system.

9.1. Generic Safe Scheme of Work for Class 1 and 2 Lasers

When using Class 1 and Class 2 lasers, users must ensure that they use them in a safe manner and do not expose themselves or others to the beam and consider the following during operation:

- Follow the manufacturer's safety instructions.
- Take care when operating the laser.

- Do not point at or towards another person.
- Do not point at mirrored surfaces.
- Never look directly or stare into the beam/beam aperture when on.
- Never allow unauthorised use.
- Do not modify the laser in any way.

9.2. Risk Assessment for Potentially Hazardous Lasers (Class 1M, 2M, 3R, 3B and 4 Lasers)

A generic risk assessment is not appropriate for work with potentially hazardous lasers. A specific risk assessment addressing the exact details of the work must be undertaken and recorded in the University's radiation management system. The assessment must include consideration of:

- The level, wavelength, and duration of exposure.
- The exposure limit values.
- Measurement or calculations of laser exposure.
- The effects of exposure on employees or groups of employees whose health is at particular risk from exposure.
- Any possible effects on the health and safety of employees resulting from interactions between artificial optical radiation and photosensitising chemical substances.
- Any indirect effects of exposure on the health and safety of employees such as temporary blinding, explosion, or fire.
- The availability of alternative equipment designed to reduce levels of exposure.
- Appropriate information obtained from health surveillance, including where possible published information.
- Multiple sources of exposure.
- Information provided by the manufacturers of artificial optical radiation sources and associated work equipment in accordance with the relevant European Union Directives.

If the risk assessment indicates that employees are exposed to levels of artificial optical radiation which exceed the exposure limit values, the employer must devise and implement an action plan comprising technical and organisational measures designed to prevent exposure exceeding the exposure limit values.

The action plan must consider:

- Other working methods.
- Choice of appropriate work equipment emitting less artificial optical radiation.
- Technical measures to reduce the emission of artificial optical radiation including, where necessary, the use of interlocks, shielding or similar health protection mechanisms.
- Appropriate maintenance programmes for work equipment, workplaces, and workstation systems.
- The design and layout of workplaces and workstations.
- Limitation of the duration and level of the exposure.
- The availability of personal protective equipment.

- The instructions of the manufacturer of the equipment where it is covered by relevant European Union Directives.
- The requirements of employees belonging to particularly sensitive risk groups.

Within the risk assessment, the general principles of prevention shall be applied, namely:

- Avoiding risks.
- Evaluating the risks which cannot be avoided.
- Combating the risks at source.
- Adapting the work to the individual, especially as regards the design of workplaces, the choice of work equipment and the choice of working and production methods, with a view, in particular, to alleviating monotonous work and work at a predetermined work-rate and to reducing their effect on health.
- Adapting to technical progress.
- Replacing the dangerous by the non-dangerous or the less dangerous.
- Developing a coherent overall prevention policy which covers technology, organisation of work, working conditions, social relationships and the influence of factors relating to the working environment.
- Giving collective protective measures priority over individual protective measures.
- Giving appropriate instructions to employees.

9.3. Justification of Open Beam Work

The expectation is that all potentially hazardous beams (Class 3B & 4) are fully enclosed ensuring that there is no risk to the laser worker. However, there may be rare circumstances under which work with potentially hazardous open beams is unavoidable, for example:

- Construction and alignment of new optical systems.
- Modification and adjustment of existing systems.
- Maintenance of higher-class lasers housed within Class 1 laser products.

If open beam work is necessary, a robust justification must be detailed in the risk assessment, where it is clearly demonstrated that:

- All laser systems are engineered to operate at no greater power than that required for the task.
- That suitable and sufficient procedural controls are in place.
- That appropriate PPE has been provided.

9.4. Review of Risk Assessments

Risk assessments should be reviewed regularly or if:

- There is reason to suspect that the risk assessment is no longer valid.
- There has been modification, relocation, or replacement of the laser equipment.
- The conditions of use have changed.
- There have been changes to the environment in which the laser equipment is used.
- There have been changes to the personnel who could have access to the laser equipment or who could be exposed to laser hazards.
- After an accident or incident involving the laser referenced in the risk assessment.
- There are indications of a reduction in compliance with safety procedures.

10. Provision of Training

When a risk assessment indicates that workers could be exposed to potentially hazardous laser radiation, laser workers must be provided with suitable and sufficient information and training which must include the following:

- The technical and organisational measures taken.
- The exposure limit values.
- The significant findings of the risk assessment, including any measurements taken, with an explanation of those findings.
- Why and how to detect and report adverse health effects to the eyes or skin.
- The circumstances in which employees are entitled to appropriate health surveillance.
- Safe working practices to minimise the risk of adverse health effects to the eyes or skin from exposure to artificial optical radiation.
- The proper use of personal protective equipment.

The PI must provide training on the specific operation of each laser system to the laser worker. This training will be recorded on the operational training record form and attached to the risk assessment.

All laser workers will receive copies of:

- The Laser Safety Policy
- The Local Rules of the Laser Controlled Area
- The Emergency Action Notice

All visiting staff & students making use of potentially hazardous lasers must be appropriately trained with the evidence recorded in the University's radiation management system prior to starting work with such devices.

All previously trained users should undertake refresher training on a regular basis, at no less than every 3 years.

11. Health Surveillance

If the risk assessment indicates that there is a risk of adverse health effects to the skin of laser workers as a result of exposure to laser radiation, the DLSO will refer the worker to University Occupational Health Unit.

Any worker who is aware of any condition that could be adversely affected by exposure to laser radiation should refer themselves to Occupational Health and undergo routine health surveillance as appropriate. They may volunteer this information to their line manager and DLSO.

12. Purchasing Lasers and Equipment Containing Lasers

All Schools and Units that work with potentially hazardous lasers must implement a clearly defined procedure for purchasing lasers that details the following:

- The requisitioner will inform the DLSO that a new laser is being purchased prior to the purchase order being raised.
- The laser must conform to the requirements of British Standard BS EN 60825-1.
- The DLSO must register the laser prior to delivery.

- The risk assessment must be approved by the DLSO before the laser can be released from Stores or the local point of delivery.

This part of the policy does not apply to laser pointers purchased via IT Services.

13. Disposal of Laser Equipment

Broken and redundant lasers should be disposed of by:

- Removing any keys from the power supply and disposing of them separately from the laser.
- Arranging suitable collection of the laser as waste electronic & electrical equipment (WEEE) through the Estates collection system if the laser does not contain hazardous chemicals or materials.
- Noting the disposal of the laser against the relevant laser registration record in the University's radiation management system.

14. Local Rules

Local Rules shall be produced for each Laser Controlled Area within a lab, which should be as concise, clear, and as readable as possible. The local rules must be displayed in the lab and shall include the following information:

- Identification of the area to which the rules apply.
- Names and contact details of appointed individuals such as the responsible person (PI or unit manager), ULSO and DLSO.
- All laser workers authorised to work on the laser system.
- Summary of the principal hazards identified in the risk assessment(s).
- Safe operating procedures and the control measures, including the correct use of Personal Protective Equipment (PPE).
- Emergency and incident reporting procedures.
- Procedure(s) requiring a permit to work.

15. Emergency Procedures

In the event that a worker receives laser beam exposure in excess of the MPE directly to the eye, they should be taken directly to the Accident & Emergency Department at Ninewells Hospital, Dundee.

The person (or person accompanying the injured person) should take details of the source which may have caused the injury (e.g., wavelength of the beam, power output etc.) and detailed information on the incident. An accident report must be completed and submitted to the Director of EHSS.

In the event of an actual or suspected hazardous exposure to laser radiation or a possible failure of a protective measure, the laser emission should be terminated immediately.

Any accident must be reported to EHSS via the [Incident, Accident and Near Miss reporting form](#)

15.1. Eye Injuries (Class 3B & 4 Lasers)

A plan should be in place to manage a person who has an eye injury following exposure to laser radiation. Factors to be considered include the following:

- Immediate first aid action should be taken, which should include calling for medical assistance. Unless advised otherwise, the injured person should be seated.
- Unless advised otherwise by a person appropriately trained, it may be appropriate to place a sterile gauze over the eye to prevent physical contact with the eye.
- Basic information about the laser beam should accompany the injured person to the hospital. Such information should include the part of the eye most likely to be at risk from the wavelengths of the laser beams in use at the time.
- The plan should be recorded, be easily available and rehearsed at appropriate periods. It may be appropriate to develop a pack of information that can be easily grabbed and taken with the injured person.

15.2. Skin Injuries (Class 4 Lasers)

Apart from chronic exposure to ultraviolet radiation, which may result in lesions developing over time, the most likely skin injury from a laser beam will be a thermal burn. This should be treated in the same manner as a burn caused by a flame or exposure to a hot surface or substance.

Initially consult a local first aider for advice but further medical advice should be sought on whether attendance at a hospital is required, based on the depth and area of the burn.

15.3. Suspected Eye Injuries (exposures in excess of MPE)

If there is no obvious eye trauma then any suspected incident is unlikely to be an emergency. However, it may be appropriate to undertake a quick test of visual function by using either an Amsler grid or asking the individual to read from a document with small font text.

A sterile gauze can be placed over the affected eye to minimize the risk of the individual rubbing their eye and causing corneal abrasions.

If a minor injury is suspected, or if reassurance is required, you should contact Ninewells Hospital for advice.

16. Inspection & Audit

Annually, the ULSA and ULSO will audit a sub-set of controlled laser labs from each School or Unit. The findings of the audit will be reported to the Radiation Hazards Management Group, VP Governance, and the VP (Research, Collections & Innovation).

17. Relationship with University Health and Safety Policies

Compliance with the conditions set out within this policy may also require compliance with other University policies, guidance documents or procedures, such as:

- University of St Andrews Fire Safety policy
- University of St Andrews Accident and Incident Reporting policy
- University of St Andrews Compressed and cryogenic gases policy
- University of St Andrews Electrical Safety policy
- University of St Andrews Chemical and Biological Safety guidance.

18. Legislation, Standards & Guidance

This policy document has been produced to ensure compliance with the following pieces of legislation:

- The Control of Artificial Optical Radiation at Work Regulations 2010
- The Health and Safety at Work Act 1974
- The Management of Health and Safety at Work Regulations 1999
- The Supply of Machinery Safety Regulations 1992
- The Provision and Use of Work Equipment Regulations 1998
- The Personal Protective Equipment at Work Regulations 1992
- The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013.

The following standards and guidance documents are relevant for controlling working with lasers and may be consulted if further information is required. Copies of the documents may be obtained from your local DLSO or from the ULSO:

- BS EN 60825-1 Safety of Laser Products, Part 1: Equipment classification and requirements
- BS EN 60825-4 Safety of Laser Products, Part 4: Laser guards
- BS PD IEC/TR 60825-14 Safety of Laser Products, Part 14: A User's guide
- BE EN 207 Personal Eye-Protection Equipment: Filters and eye-protectors against laser radiation
- BS EN 208 Personal Eye-Protection Equipment: Personal eye-protection. Eye-protectors for adjustment work on lasers and laser systems (laser adjustment eye-protectors)
- ICNIRP Guideline on the Limits of Exposure to Laser Radiation of wavelengths Between 180 nm and 1,000 nm. (published in Health Physics 105(3):271-295;2013)
- BS EN ISO 91818-1, Eye and face protection. Protection against laser radiation. Requirements and test methods
- The European Commission's Non-Binding Guide to Good Practice for Implementing Directive 2006/25/EC 'Artificial Optical Radiation'
- AUPRO Guidance Note No. 7 Guidance on the Safe Use of Lasers in Education and Research.

Version number	Purpose / Changes	Document status	Author of changes, role and school / unit	Date
1.0	Revision	Draft	Paul Szawlowski, Deputy Director EHSS	21/06/2019
1.1	Update	Approved	John Nicholson, Health and Safety Manager (Sciences)	30/08/2023