

Radiation Protection Policy

Synopsis

The Radiation Protection Policy outlines the roles and responsibilities for those involved in the management and use of ionising radiation and, artificial optical radiation (lasers and ultraviolet) within the University of Aberdeen.

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Approval

Approved by: SMT

Date: 21st March 2024

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Revision Record

| Issue | Date | Reason for Review |
|-------|--------------|--|
| Draft | Dec 2023 | New document for consultation |
| Rev 1 | January 2024 | Update following consultation with Radiation Hazards Sub-Committee |
| Rev 2 | April 2024 | Published following approval by SMT |

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1.0 Purpose of the Policy

This policy relates to the use of ionising radiation and lasers by the University of Aberdeen and describes a management framework:

- to ensure the health and safety of staff, students, contractors and members of the public.
- to protect the environment.
- to ensure compliance with relevant legislation.

The management framework includes a description of responsibilities of UOA staff and provisions for seeking expert advice.

2.0 Scope of Policy

This Policy applies to all staff, students, visitors (including contractors) who work with sources of ionising radiation or lasers on any University premise or otherwise in connection with University related activities. Sources of ionising radiation includes X-ray generating equipment and radioactive sources (both sealed and unsealed).

3.0 Definitions

| Term | Definition |
|--------------------|--|
| Ionising radiation | Energy released in the form of electromagnetic waves or particles that has the ability to ionise |
| LASER | Light Amplification by Stimulated Emission of Radiation |
| UV | Ultraviolet |
| LPS | Laser Protection Supervisor |
| LPA | Laser Protection Adviser |
| RPA | Radiation Protection Adviser |
| RPS | Radiation Protection Supervisor |
| RWA | Radiation Waste Adviser |

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5.0 Legislative Requirements

The University has a number of duties imposed on it from different legislation and work with radiation is subject to permits and authorisations from both the Health and Safety Executive (HSE) and the Scottish Environmental Protection Agency (SEPA).

The University must comply with the Justification of Practices Involving Ionising Radiation Regulations 2004, the Ionising Radiation Regulations 2017 (IRR17), The Control of Artificial Optical Radiation at Work Regulations 2010 (AOR) and The Control of Electromagnetic Fields at Work Regulations 2016. These regulations are enacted under the health and safety at work act 1974 and enforced by the Health and Safety Executive (HSE).

The University must also comply with the Environmental Authorisations (Scotland) Regulations 2018 (EASR18), enforced by the Scottish Environmental Protection Agency (SEPA).

In addition, if the University intends to expose individuals to ionising radiation as part of an ethically approved research trial it must comply with the Ionising (Medical Exposure) Regulations 2017 (IR(ME)R17), enforced by Healthcare Improvement Scotland (HIS).

6.0 Responsibilities

University Court

The University Court has ultimate responsibility for overseeing health, safety and wellbeing matters at the University. As such, they should seek assurance that risk control measures are in place for work with ionising radiation and lasers and that the University complies with relevant radiation safety legislation.

Senior Management Team

The Senior Management Team has delegated authority from the University Court and as such, should seek reassurance that appropriate risk control measures for work with ionising and lasers are in place, are being implemented and that those with specific responsibilities outlined in this Policy are trained and competent.

Heads of Schools / Directors

Heads of Schools and Directors of Support Services must ensure that work with ionising radiation and lasers is carried out in accordance with the arrangements described in the UOA Ionising Radiation Safety arrangements and the UOA laser safety arrangements document and other relevant radiation safety documents. In particular they should ensure that:

- line managers and supervisors are aware of their responsibilities within schools with regard to ionising radiation and laser safety and that they are aware of the relevant provisions in the radiation safety arrangement documents.
- suitable risk assessments are conducted and recorded and approved ahead of work being carried out.
- measures are provided to eliminate or control risks arising from work with ionising radiation and lasers.

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- any incidents involving sources ionising of radiation are investigated, records kept and learning disseminated as appropriate.
- equipment and facilities are maintained and, where appropriate, tested to ensure safe operation.
- controls are in place regarding the purchase of radioactive sources, equipment containing embedded radioactive sources, x-ray equipment and lasers.
- individuals who undertake work with ionising radiation or lasers are competent to do so and are provided with the appropriate information, instruction and training to do so safely.
- suitably trained individuals are appointed as Radiation Protection Supervisors (RPS) and Laser Protection supervisors (LPS).
- that appropriate expert advice is taken from the RPA, LPA, RWA and MPE when appropriate.
- audit programs described in the safety arrangements documents are carried out and reviewed by the school.

Line Managers / Supervisors

Line Managers / Supervisors must ensure that:

- work with radiation has been properly risk assessed in accordance with provisions of the Ionising Radiation Safety Arrangements and Laser Safety arrangements documents prior to commencing.
- the findings of the risk assessments are acted upon and appropriate controls, corresponding to the risk, are implemented.
- local rules describing the safety arrangements are in place for every controlled & supervised radiation area and every laser-controlled area and that these rules are disseminated to all staff, students and contractors who may be affected by them.
- staff, students and contractors under their supervision have received training, information and instruction relevant to the risks.
- in the event of accidents or incidents, the RPS or LPS is informed as well as the University Health and Safety Team.
- they liaise with the RPSs and LPSs and that they seek advice from the RPA, LPA, RWA and or the MPE as required when new work is planned.
- The LPA is contacted for advice before using Ultraviolet radiation sources which cannot be completely enclosed and may result in staff exposure during use.

Radiation Protection Supervisors

The RPS must:

- help ensure that the local rules are disseminated and followed by all staff and students who may be affected by them and that the local rules are followed.
- ensure that where new work is proposed, this is brought to the attention of the RPA, RWA or MPE for their input for risk assessment and development and modification of local rules where appropriate.
- undertake an annual audit of users, stock inventories and risk assessments.
- undertake an annual audit of the physical environment for which they are responsible.

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Laser Protection Supervisor

The LPS must:

- Coordinate and consult with the LPA in the development of risk assessments and appropriate laser safety rules.
- Ensure that any local rules are brought to the attention of all users of the lasers in the area for which they have responsibility.

Ionising Radiation and Laser Users

All users of ionising radiation and lasers within the University must comply with the local rules that apply to their work areas. They must ensure that they undertake training appropriate to their requirements.

In addition, ionising radiation users must:

- not knowingly expose themselves or any other person to ionising radiation to an extent greater than is reasonably necessary for the purposes of their work and shall exercise reasonable care while carrying out such work.
- make full and proper use of any personal protective equipment.
- forthwith report to their supervisor / manager any defect they discover in any personal protective equipment.
- take all reasonable steps to ensure that personal protective equipment is returned to its storage location.

In addition, lasers users must:

- read and follow the safety procedures summarised in the local rules and adhere to instructions provided by manufacturer for the safe use of equipment as appropriate.
- inform their LPS if any new/loan/demo laser is brought into the department.
- never point a laser at themselves or anyone else.
- always wear lasers safety glasses as directed in the local rules.

Head of Health, Safety and Resilience Team

The Head of Health, Safety and Resilience must:

- Ensure the provision of competent advice from an RPA, RWA, LPA and MPE in accordance with the needs of the University.
- Monitor any contract for the above to ensure that advice, audits and inspections are provided to meet legal requirements.
- This policy is maintained and reviewed as and when necessary, in conjunction with the Radiation hazards Sub-committee members.

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6.1 Expert advice

The university must seek expert advice as part of its statutory obligations under the radiation safety legislation and general health and safety legislation. The normal expectation will be that expert advisers as described below will be appointed as part of a wider contractual arrangement to provide radiation protection services to the University.

Radiation Protection Advisor

The University Radiation Protection Advisor (RPA) must hold a valid certificate of competence recognised by the HSE and must be able to provide evidence that they are suitably qualified and experienced upon request. They must be consulted by the University for advice on complying with the Ionising Radiation Regulations (2017) and in particular advice on:

- the content of risk assessments and developing local safety arrangements, local rules, *etc.* for the use of radioactive sources and equipment.
- corresponding with the HSE on matters relating to IRR17 and assisting with the application for consents.
- corresponding with SEPA for the application for environmental authorisations.
- designation of radiation areas.
- the identification of 'Classified Persons' and any relevant monitoring programme;
- investigating accidents and incidents involving radiation and the development of appropriate remedial actions.
- guiding in the selection and use of radiation monitoring equipment.
- suitable training in the use of radiation within the University.
- plans for installations and the acceptance into service of new or modified sources of ionising radiation in relation to any engineering controls, design features, safety features and warning devices needed to restrict exposure to ionising radiation.
- the regular calibration of equipment provided for monitoring levels of ionising radiation and the regular checking that such equipment is serviceable and correctly used.
- the periodic examination and testing of engineering controls, design features and warning devices and regular checking of systems of work provided to restrict exposure to ionising radiation.

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Radiation Waste Advisor

The University Radiation Waste Advisor (RWA) is appointed by the University to provide competent advice relating to the treatment, movement and final disposal of radioactive material from University premises. They must hold a Certificate of Competence from an assessing Body recognised by the UK Environment Agencies. They must be consulted on the following matters:-

- providing advice in regard to the application of and meeting the conditions contained within authorisations issued for the accumulation and disposal of radioactive waste;
- achieving and maintaining an optimal level of protection of the environment and the population;
- checking the effectiveness of technical devices for protecting the environment and the population;
- acceptance into service, from the point of view of surveillance of radiation protection, equipment and procedures for measuring and assessing, as appropriate, exposure and radioactive contamination of the environment and the population; and
- regular calibration of measuring instruments and regular checking that they are serviceable and correctly used.

Laser Protection Adviser

The University laser protection adviser (LPA) is appointed by the University to provide competent advice on the safe use of lasers and in particular:

- advice on the prior examination of plans for installations and the acceptance into service of new or modified laser equipment in relation to any engineering controls, design features, safety features and warning devices needed to restrict exposure;
- advice on appropriate personal protective equipment;
- assistance during an investigation into adverse events relating to lasers;
- advice and assistance in the provision of safety information and training;
- the designation of laser controlled areas;
- advice on safety audits; and
- provide advice on open sources of UV radiation.

Medical Physics Expert

If as part of an ethically approved research study a research subject will be required to be exposed to ionising radiation for the purposes of the study the University must appoint a medical physics expert as defined by regulation 2 of IR(ME)R17 so they can provide the expert advice as required by regulation 14 of IR(ME)R17.

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7.0 Monitoring

The Radiation Hazards Sub-Committee is a standing sub-committee of the University Health and Safety Committee. The terms of reference of the Radiation Hazards Sub-Committee are:

- To keep under review the University's health and safety arrangements covering the use of ionising and non-ionising radiation.
- To make recommendations to the University Health and Safety Committee on steps that require to be taken to ensure the effectiveness of these arrangements.
- To consider applications from Schools who wish to carry out work involving ionising or non-ionising radiation and to grant approvals, if appropriate, for such work to proceed.
- To revoke any approval if the Sub-Committee considers that there are justifiable health and safety reasons why the work in questions should not be permitted to continue.
- To bring to the attention of the University Health and Safety Committee any concerns or matters which require escalation for information or resolving as appropriate or any matter outside the control of the Sub-Committee to address any significant risk to the University as a whole.

8.0 References

| Document Number | Document Name |
|---|---|
| Legislation.gov.uk | Ionising Radiation Regulations 2017 |
| Legislation.gov.uk | Control of Artificial Optical Radiation at Work Regulations 2010 |
| Legislation.gov.uk | Control of Electromagnetic Fields at Work Regulations 2016 |
| Legislation.gov.uk | Environmental Authorisations (Scotland) Regulations 2018 (EASR18) |
| Legislation.gov.uk | Ionising (Medical Exposure) Regulations 2017 |
| HS-GN-042 | Ionising Radiation Safety Arrangements (2021) |