



UNIVERSITY  
OF SUSSEX

Human Resources

## **RADIATION SAFETY POLICY**

### **1. OVERVIEW AND PURPOSE**

- 1.1 Radiation safety refers to the use of safe practices, specialist equipment and dedicated facilities to ensure people, animals and the environment are protected from radiation exposure, whether under normal operating conditions or during an accidental exposure.
- 1.2 This policy sets out the arrangements in place at the University to comply with all legislation concerning radiation safety, and applicable codes of practice and standards, to facilitate safe and responsible research practices without unduly limiting academic research.

### **2. SCOPE**

- 2.1 This policy shall apply to all University activities involving ionising and non-ionising radiation, including artificial optical radiation and electromagnetic fields, that pose a hazard to humans, animals or the environment. For the purposes of this policy, activity can refer to procurement, production, processing, handling, use, transport, storage, holding, or disposal of any regulated radioactive materials and radiation-generating equipment.
- 2.2 This policy does not apply to activities involving naturally generated optical radiation, such as ultraviolet, visible, or infrared light.
- 2.3 Third parties who undertake activities involving regulated radioactive substances, radiation-generating equipment, artificial optical radiation and electromagnetic fields on university premises are required to co-operate and co-ordinate with the University as detailed in the University Health, Safety and Wellbeing Policy.

### **3. RESPONSIBILITIES**

#### **3.1 Vice-Chancellor**

- 3.1.1 The Vice-Chancellor will provide leadership and executive oversight of Health & Safety. They are also accountable for ensuring that all work with radiation is in compliance with the applicable Regulations.

#### **3.2 Executive Deans of Faculty and Professional Services Directors**

- 3.2.1 Executive Deans of Faculty and Professional Services Directors are responsible for health and safety matters relating to the activities of their Faculty or Division, whether these are undertaken on the institution's premises or elsewhere, and must ensure that:

- All activities within the scope of this policy involving hazardous radiation sources are assessed and managed effectively with suitable local governance and oversight arrangements in place, documented, and reviewed regularly.
- All relevant information on risks associated with hazardous radiation sources, including control measures, is documented and communicated clearly and effectively.
- Suitably qualified and experienced individuals are formally appointed as Radiation Protection Supervisors, and they are provided with any training and/or resources and sufficient time required to fulfil their duties.
- Suitable and effective arrangements are in place to deal with emergencies and other untoward occurrences, and these events are reported centrally.
- Appropriate investigations are undertaken following any significant incidents, near misses, or untoward occurrences, and any remedial or improvement actions are implemented.
- Arrangements are in place for effective cooperation and coordination between all relevant parties for the safe management of hazardous radioactive materials.
- All equipment and facilities are maintained and tested to ensure safe and effective operation, and records are maintained of their performance.

### **3.3 Assistant Director of Health, Safety and Wellbeing**

3.3.1 The Assistant Director of Health, Safety and Wellbeing is responsible for:

- The appointment of an internal or external University Radiation Protection Adviser ('RPA') as required by the Ionising Radiations Regulations 2017 (IRR17), Regulation 14.
- The appointment of an internal or external Radioactive Waste Adviser ('RWA') as required by the Environmental Permitting (England and Wales) Regulations 2016
- The appointment of the Radiation Protection Officer, in conjunction with the RPA/RWA.
- Ensuring the Radiation Protection Officer has sufficient support, time and budget to complete their duties.
  - The management and oversight of the Occupational Health Service contract, which provides access to some worker radiation safety services to the University of Sussex.

### **3.4 Radiation Protection Officer**

3.4.1 The Radiation Protection Officer ('RPO') shall:

- Provide expert advice and support as necessary and appropriate on matters relating to radiation safety, including the preparation of specialist policies, Safety Codes of Practice, and guidance.
- Working with key stakeholders to ensure the University's work with radiation is conducted in a safe and compliant manner in accordance with the relevant legislation.
- Ensure that ionising radiation is managed as described in the University's Ionising Radiation Safety Code of Practice.
- Ensure that artificial optical radiation is managed as described in the University's Artificial Optical Radiation Safety Code of Practice.
- Ensure that electromagnetic field radiation is managed as described in the University's Electromagnetic Field Radiation Safety Code of Practice.
- Maintain all necessary records for statutory compliance.
- Advise the University on emergency response and business continuity, and undertake emergency test exercises.
- Liaise with the appointed Radiation Protection Adviser and Radioactive Waste Adviser ('RPA/RWA') with regard to compliance with IRR17 and The Environmental Permitting (England and Wales) Regulations 2016 (EPR16).
- Liaising with regulatory and enforcement authorities with oversight of radiation safety legislation, including the submission of any required notifications or permit/consent applications.
- Advise on the appointment of Radiation Protection Supervisors to supervise work being conducted with Ionising radiation as required by IRR17.

### **3.5 Radiation Protection Supervisors**

- 3.5.1 Radiation Protection Supervisors ('RPSs') are responsible for ensuring that any ionising radiation work undertaken in areas they supervise is appropriately risk assessed, and the work conducted follows the Local Rules in accordance with IRR17 and applicable Environmental Agency permits.

### **3.6 Principal Investigators, Supervisors, Technical Managers and line managers**

- 3.6.1 Principal Investigators, Supervisors, and Technical Managers are responsible for ensuring that all activities under their supervision or control have been risk assessed and that they have received all required approvals and permissions **before** issuing final consent to commence.
- 3.6.2 Additionally, they are responsible for ensuring that: identified control measures are fully implemented and maintained; that all persons under their control are fully aware of any risks and are trained and competent to carry out such activities safely,

including emergencies; and for providing appropriate supervision and monitoring compliance with this policy and all local arrangements through accurate record keeping and assurance checks.

- 3.6.3 Line managers are responsible for ensuring all staff working with hazardous radiation sources are following the Safety Codes of Practice, Local Rules, and Regulations, and ensuring that the work is risk assessed appropriately.

### **3.7 Radiation Safety Sub-Committee**

- 3.7.1 The Radiation Safety Sub-Committee (RSSC) is a sub-committee of the University Health & Safety Committee and functions as the University's oversight and approval body for all activities involving hazardous radioactive materials and radiation-generating equipment, as reflected in its Terms of Reference.

### **3.8 Artificial Optical Radiation Group**

- 3.8.1 The Artificial Optical Radiation Group ('AORG') is a sub-group of the RSSC and provides oversight and approval for all regulated artificial optical radiation at the University, as reflected in its Terms of Reference.

### **3.9 All Staff, Students, Contractors, Third Parties, and Visitors**

- 3.9.1 Every individual (staff member, student, contractor, third party, and visitor) has a responsibility to:
- Comply with all safety arrangements, including, but not limited to, following all applicable safety procedures, including Safety Codes of Practice and Local Rules, and wearing required Personal Protective Equipment as identified in local operational documents.
  - Co-operate with and follow any safety instructions or directions from Principal Investigators, supervisors, Technical Managers, line managers, or safety personnel.
  - Report any incidents, accidents, or defects in equipment through the appropriate local reporting and escalation channels.
- 3.9.2 Staff and students acting in a manner that poses a risk to their safety, or the safety of others, may be subject to improvement programmes and or disciplinary action. Individuals who are not members of the University of Sussex, deemed to be acting in such a manner, may be asked to leave the site.

## **4. POLICY**

- 4.1 Terms used in this policy are defined as follows:

- 4.1.1 **Artificial Optical Radiation (AOR)** is a spectrum of electromagnetic radiation with wavelengths between 100nm to 1mm that is produced by artificial means, either in a coherent (laser) or non-coherent form (lamps). Examples of damage caused by AOR include burns and DNA damage.

- 4.1.2 **Electromagnetic Fields (EMF)** are static electric, static magnetic and time varying electric, magnetic and electromagnetic fields with frequencies up to 300GHz.
- 4.1.3 **Ionising Radiation (IR)** refers to a form of high-energy radiation that can remove electrons from atoms and molecules, leading to the formation of ions. This type of radiation can cause damage to biological molecules such as DNA, which can lead to the development of cancer.
- 4.1.4 **Local Rules**  
Local rules are a requirement from the Ionising Radiation Regulations 2017 (IRR17) for areas where ionising radiation is used. Local Rules are written documents that include site specific safety instructions and procedures, that are put in place to ensure work with ionising radiation is carried out safely and dose to individuals is restricted to as low as reasonable possible.
- 4.1.5 **Radiation Protection Adviser (RPA)** refers to an individual or body which meets the criteria of competence set out by the Health and Safety Executive to provide guidance on the legislation requirements of ionising radiation work. The RPA must have relevant experience in the employer's field.
- 4.1.6 **Radiation Protection Officer (RPO) or University RPO** is the lead member of staff who manages the usage of radiation on the campus.
- 4.1.7 **Radiation Protection Supervisor (RPS)** is a member of staff who is responsible for ensuring that the Local Rules in place for a radiation area under their jurisdiction are maintained. The RPS is appointed in writing, and their name and contact details are included in any Local Rules which they are supervising.
- 4.1.8 **Radioactive Waste Adviser (RWA)** refers to an individual or body which meets the criteria of competence set out by the Environment Agency (EA) to provide guidance upon the legislation requirements of accumulating/disposing of radioactive waste that requires a permit from the EA. The RWA must have relevant experience in the employer's field.
- 4.1.9 **Static electric fields** are constant fields, which do not change in intensity or direction over time, in contrast to low and high-frequency alternating fields. Hence, static electric fields have a frequency of 0 Hz. They exert a force on charges or charged particles. A high-intensity field can cause micro shocks, which are unpleasant, but current evidence does not show adverse effects.
- 4.1.10 **Static Magnetic Fields** are constant fields, which don't change in intensity or direction over time. Hence, they have a frequency of 0 Hz. They exert an attractive force on metallic objects containing, for example, iron, nickel or cobalt. Equipment such as Magnetic Resonance Imaging (MRI) and Nuclear Magnetic Resonance (NMR) produces these fields, and the fields generated can pose a variety of hazards depending on their size and strength.
- 4.2 All activities involving regulated radioactive substances and radiation-generating equipment are managed and controlled to minimise the risk of harm to humans and/or the environment, including prevention of their theft, loss, or misuse.

- 4.3 Compliance with legislation and requirements concerning radiation safety is achieved by the following:
- 4.3.1 Arrangements are in place to ensure effective oversight and management of all activities involving regulated radiation sources, with clearly defined routes of responsibility and accountability.
  - 4.3.2 All activities involving hazardous radioactive materials and radiation-generating equipment will be subject to a robust risk assessment and approval process.
  - 4.3.3. All control measures and conditions identified during the risk assessment and approval process are fully implemented prior to activity commencing and are maintained for the duration of the activity.
  - 4.3.4 All regulated activities are notified as appropriate to the relevant competent authorities, and that all correct licences, permits, notifications, registrations and/or consents are in place prior to the activity commencing. Any conditions and requirements of these will be complied with.
  - 4.3.5 All individuals conducting activities involving regulated radioactive materials or radiation-generating equipment shall receive suitable and sufficient training and be subject to competency assessments at appropriate intervals. All training will be refreshed at appropriate intervals.
  - 4.3.6 Arrangements are in place to deal with emergencies and other untoward occurrences for all activities with regulated radioactive materials or radiation-generating equipment, and these are tested at an appropriate interval. The RPA will be informed of emergencies or untoward occurrences.
  - 4.3.7 Accurate records are maintained of all regulated radioactive materials or radiation-generating equipment held on site, and all associated documentation pertaining to radiation safety, including storage, disposal, training, and assurance activities, is retained in line with all relevant legislative requirements and University policies.
  - 4.3.8 The central Health and Safety team maintains mechanisms for the effective dissemination of information to all relevant parties following University information governance and record retention processes.
  - 4.3.9 There will be cooperation with all other appropriate employers in order for all involved parties to comply with the regulations set out in IRR17 and have information on the possible exposure to their employees from ionising radiation.
  - 4.3.10 All facilities (buildings and equipment) used to handle or work with regulated radioactive materials or radiation-generating equipment are designed and maintained to meet legal requirements set by the competent authorities.
  - 4.3.11 All radioactive material will be disposed of in accordance with permit conditions or exemption conditions, such as via a licensed waste contractor for disposal at a suitable facility. The RPA/RWA will be consulted on the disposal of radioactive waste.

- 4.3.12 Occupational health services such as pre-employment checks, health surveillance, exposure records, classified worker assessment, etc., are provided and where identified as appropriate in relation to radiation safety.
- 4.3.13 Dosimetry for ionising radiation will be supplied by a supplier that has been approved by the Health and Safety Executive.
- 4.3.14 All radioactive materials are transported or consigned via a suitably qualified courier in appropriate packaging to ensure compliance and prevent unintentional release or unauthorised access.
- 4.3.15 Suitable security procedures are put in place to prevent the release of radioactive material, as identified by risk assessment.
- 4.3.16 Appoint an RPA approved by the Health and Safety Executive and appoint an RWA approved by the Environmental Agency via 'RPA 2000'.
- 4.3.18 All usage of ionising radiation follows the "As Low as Reasonably Practicable" principle to reduce radiation exposure to workers and the public.
- 4.3.19 All ionising radiation activities will be risk assessed in accordance with IRR17 Reg 8, and all areas working with ionising radiation sources will have Local Rules where areas have been designated in accordance with IRR17.

## **5. LEGISLATION AND GOOD PRACTICE**

### **5.1 Legislation**

5.1.1 Please see below for related key legislation relevant to this policy area:

- [The Ionising Radiation Regulations 2017 \(IRR17\)](#)
- [The Ionising Radiation \(Medical Exposure\) Regulations 2017 \(IR\(ME\)R\)](#)
- [Environmental Permitting \(England and Wales\) Regulations 2016 \(EPR16\)](#)
- [The Control of Artificial Optical Radiation at Work Regulations 2010 \(AOR10\)](#)
- [Control of Electromagnetic Fields at Work Regulations 2016 \(CEMFAW 2016\)](#)

### **5.2 Codes and Standards of Practice**

5.2.1 Please see below for related key codes and standards of practice relevant to this policy area:

- [HSE Work with ionising radiation \(Ionising Radiations Regulations 2017\) – Approved Code of Practice and guidance \(HSE L121\)](#)
- [HSE Electromagnetic fields at work - A guide to the Control of Electromagnetic Fields at Work Regulations 2016 \(HSG281\)](#)

- [HSE Guidance for Employers on the Control of Artificial Optical Radiation at Work Regulations \(AOR\) 2010](#)

**Review / Contacts / References**

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Related internal policies, procedures, guidance:	Ionising radiation: <a href="https://www.sussex.ac.uk/hso/hsoatoz/ionradiation">https://www.sussex.ac.uk/hso/hsoatoz/ionradiation</a> Artificial optical radiation: <a href="https://www.sussex.ac.uk/hso/hsoatoz/artificial-optical-radiation">https://www.sussex.ac.uk/hso/hsoatoz/artificial-optical-radiation</a>
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