

Section 1. Regulatory Aspects

1.1 Ionising Radiation Regulations 2017

These Regulations are mainly concerned with the protection of the worker from the harmful affects of ionising radiation and are enforced by the Health and Safety Executive (HSE). The Regulations (and associated Approved Code of Practice (ACOP)) require amongst other things:

- the appointment of a Radiation Protection Advisor and Radiation Protection Supervisors;
- classification of workers,
- designation and monitoring of working areas,
- Prior risk assessment and Schemes of Work.

IRR17 requires that the employer takes measures to reduce risk, spending time trouble and money until the point where further sacrifice would be considered grossly disproportionate to any benefit gained. The term used to describe this risk is ***as low as reasonably practicable (ALARP)***¹. This is a more stringent legal requirement than just “balancing” sacrifice and benefits.

Copies of IRR17 and the associated Approved Code of Practice are held by Departmental Ionising Radiation Protection Supervisor (DIRPS) and University Ionising Radiation Protection Officer (UIRPO).

¹ ALARP and BAT are defined more fully in the glossary

1.2. Environmental Permitting Regulations 2016

(EPR16)

These Regulations are enforced by the Environment Agency (EA) and are concerned with the protection of the environment from the harmful effects of ionising radiation and other pollution sources.

The EA issues Permits² authorising the University to *acquire, accumulate and dispose* of radioisotopes. They set limits for storage, accumulation and disposal which **must not be exceeded**. The University is subjected to regular inspections from the EA and breaches can result in the University being prosecuted. Any EPR breaches will also affect future charging for permits.

Permits for unsealed sources must be displayed in all areas where radioisotopes are used or stored and only the latest version should be displayed. Permits for sealed sources should not be displayed.

There are 3 types of permit:

- Standard - replaces fixed condition registration
- Security - for sealed sources and waste management
- Publicly available – for open source use and waste management

Under EPR16 permits can be transferred between operators following application to the EA. If the University stops using radioactive substances an application will need to be made to surrender the permit.

The permits describe management conditions that must be in place to minimise environmental risk. Permit holders are required to demonstrate that they use **best available techniques** (BAT) this means the most effective and advanced techniques to reduce emissions and the impact on the environment as a whole.

² Permit is used as a generic term to describe the range of licences, certificates and authorisations held by the University allowing the holding, use and disposal of radioactive substances.

Sources in equipment such as scintillation counters and electron capture detectors in gas chromatography systems are exempt. However exempt sources are still subject to conditions such as accounting, records, leak testing, reporting lost or stolen sources.

Many manufacturers will take back sources from redundant equipment.

If you are thinking of purchasing apparatus containing radioactive sources, you must first get approval from the UIRPO. You must also obtain the approval of the UIRPO before attempting disposal of such testing equipment. The UIRPO will seek the advice of the RPA, as appropriate.

1.3. The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No 1348)

These Regulations, enforced by the Department of Transport, control the transport of isotopes by road. Similar regulations cover rail and air transport. The Regulations are complex and bureaucratic and therefore any proposal to transport isotopes, either off campus or on campus roads, must be discussed with the UIRPO.

See also the AURPO guidance notes: Transport of Radioactive Materials by Road (2008).

1.4 The Ionising Radiation (Medical Exposure) Regulations 2017

These Regulations, enforced by the Care Quality Commission (CQC), regulate medical exposures and the exposures of healthy volunteers in physiological studies. All exposures require the justification and optimisation of a qualified practitioner. The Regulations are complex, and any such exposures must be discussed with the UIRPO and practitioner.