PRIFYSGOL
BANGOR
UNIVERSITY

IONISING RADIATION (OPEN SOURCES) HEALTH AND SAFETY AND COMPLIANCE POLICY

Date	**Purpose of Issue / Description of Change**	**Equality Impact Assessment Completed**
1st April 2010	Initial Issue	
June 2012	Review	
November 2013	Review	
January 2018	Review	
18th May 2021	Reviewed and approved by the Health, Safety and Emergency Management Task Group	30th March 2020
23rd January 2025	Reviewed and approved by the Health, Safety and Emergency Management Committee	

Policy Officer	**Senior Responsible Officer**	**Approved By**	**Date**
Head of Health & Safety	University Secretary	Health & Safety Committee	19th Feb 2010

This Policy will be reviewed in 2028

1. INTRODUCTION

This document describes Bangor University's Policy for ensuring the safety of staff, students, contractors and any other personnel who may be exposed to sources of ionising radiation. It details how the protection of personnel and the environment against ionising radiation are managed by Bangor University.

By law the University must ensure that:

- Procedures and protocols are in place to ensure all statutory duties are discharged.
- Radiation doses achieved are as low as reasonably practicable (ALARP).

2. POLICY STATEMENT AND SCOPE

It is the policy of Bangor University, so far as is reasonably practicable, but in accordance with the relevant statutory requirements and good practice, to ensure the health and safety of staff, students and visitors to the University.

This Policy states University policy to ensure the safety of staff, students, contractors and any other personnel who may be exposed to open sources of ionising radiation. It details how the University manages the use of open sources to protect both personnel and the environment.

The requirements of this Policy must be followed by all Colleges handling open sources of ionising radiation and Professional Services who may, because of the services they provide, come into contact with open sources of ionising radiation, in addition to all guidance given by the University's Radiation Protection Advisor (RPA), Radiation Waste Advisor (RWA) and Radiation Protection Officer (RPO). Section 5 contains the University's formal Ionising Radiation Policy Statement.

The Policy applies to:

- Each College and Professional Service.
- Staff, students and maintenance personnel.
- All open sources of ionising radiation.

The Policy does not apply to:

- Radon*.
- X-Rays*.

** Dealt with by other specific Policy Standards.*

3. RELATED POLICIES AND LEGISLATION

In addition to those general duties in law, the University and its constituent Colleges and Services, have obligations under the following items of legislation that relate to the use of Ionising Radiation:

- Environmental Permitting Regulations 2016 (EPR 2016).
- The Ionising Radiations Regulations 2017 (IRR 2017).
- Work with Ionising Radiations (IRR 2017) ACOP L121 (second edition).
- Nuclear Safeguards (EU Exit) Regulations 2019 (NSR19).
- The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (CDG 2009)
- Bangor University Policies and Local Rules.

4. DEFINITIONS / TERMINOLOGY

For the purposes of this Policy the following definitions apply:

- Ionising Regulations: This refers to the use of 'open sources' of radiation only.
- Open Source: Is a source of Ionising Radiation in the form of a radioactive material which is not encapsulated or otherwise contained. This means the open radioactive material can move around and if uncontrolled would lead to contamination.
- ALARP: As Low As is Reasonably Practicable.

5. UNVERSITY RESPONSIBILITIES: IONISING RADIATION POLICY STATEMENT

Responsibility for the safe and compliant use of radioactive material lies with the University Executive. At the operational level, the Head of College and Director of Professional Service (where applicable) is responsible for radiation protection within their area of responsibility.

The University is committed to the effective management of ionising radiation. The ALARP principle is applied to all radiation work to ensure employees, students, contractors, visitors and the environment is protected. To ensure doses are ALARP the following controls will be implemented:

a. The University will comply with the standard conditions issued by Natural Resources Wales authorisations to accumulate and dispose of radioactive waste, and will apply "best available technique" for all work carried out.

b. All work will be carried out in accordance with relevant legislation, in particular:
    - The Ionising Radiations Regulations 2017 (IRR 2017) and supporting ACOP and guidance.
    - Nuclear Safeguards (EU Exit) Regulations 2019 (NSR19).
    - Environmental Permitting (England & Wales) Regulations (EPR 2016).

c. The University will ensure the organisation and specific roles as detailed in Section 6 & 7 are in place.

d. The University will appoint a *'Qualified Expert'*, Radiation Protection Advisor (RPA) who will be consulted to provide advice to the University on all work with ionising radiation.

e. The University will appoint a *'Qualified Expert'*, Radioactive Waste Adviser (RWA) who will be consulted as necessary to achieve and maintain an optimal level of protection of the environment and population.

f. The University will appoint a Radiation Protection Officer (RPO) to oversee the University's Radiation Protection Supervisors (RPSs).

g. The RPSs will oversee, on a day to day basis work with ionising radiation within their areas of responsibility. RPSs are named in the appropriate Local Rules document.

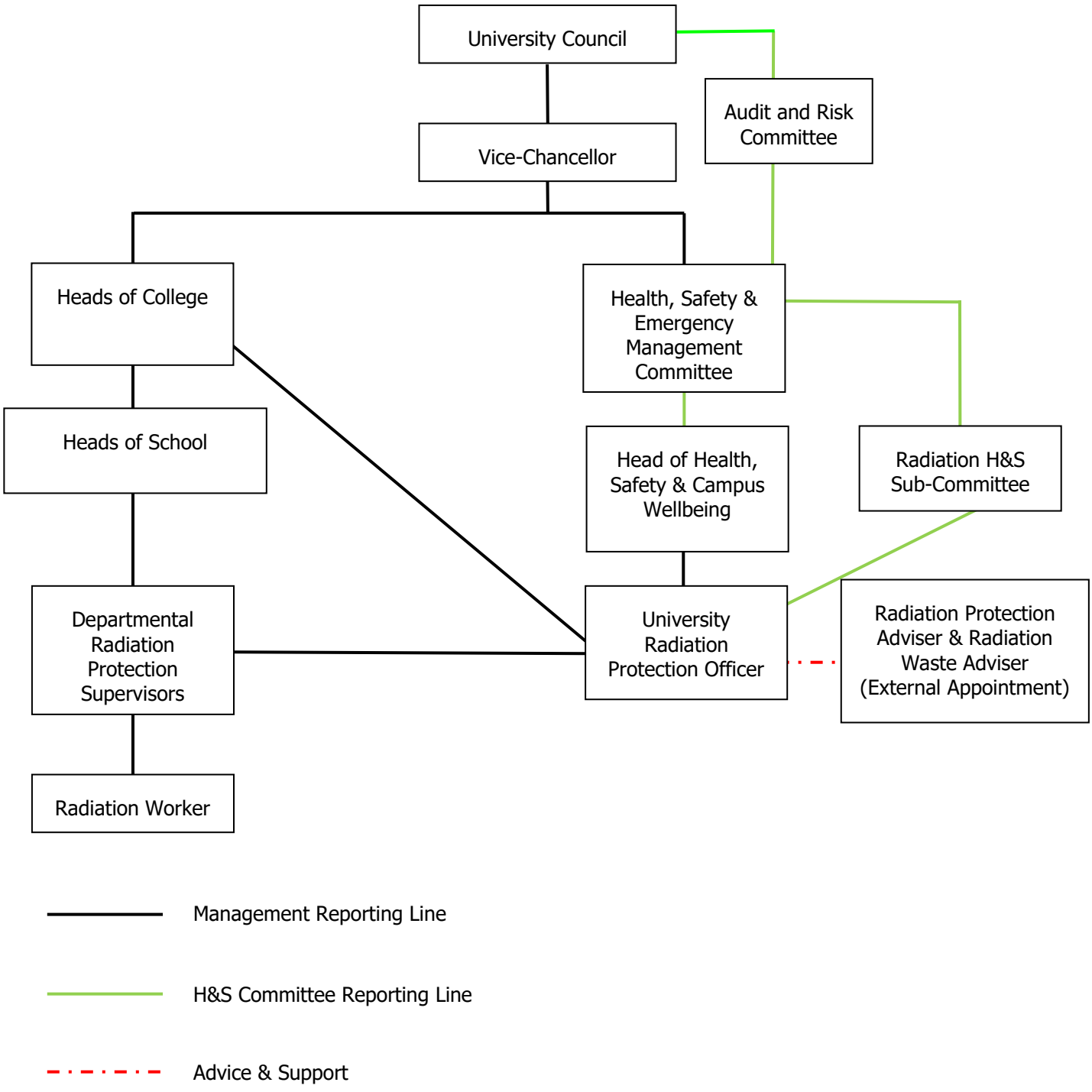
h. In each location where ionising radiation is used, Local Rules, approved by the RPA, will detail arrangements to achieve radiation protection of employees, students, contractors and visitors.

i. All new research or teaching, involving the use of ionising radiation, will be subject to a prior risk assessment to justify its use, identify measures needed to restrict exposure to individuals and any contingency arrangements needed to manage foreseeable accidents and incidents.

j. The Radiation Health and Safety Sub-Committee will provide advice to senior management to ensure the safe use of ionising radiation. The Sub-Committee meets twice a year and in turn reports to the University Health, Safety and Emergency Management Committee.

6. ORGANISATION

UNIVERSITY ORGANISATION CHART - RADIATION PROTECTION



7. ROLES AND RESPONSIBILITIES

This Section details the specific duties of 'responsible groups / persons' for delivering the environmental and health and safety commitments to ensure compliance with relevant legislation.

These are in addition to the general duties of all employees, students, contractors and visitors to comply with all aspects of Local Rules and other health and safety documents relevant to the area they are working in (or entering):

Health, Safety and Emergency Management Committee (HSEMC)

The HSEMC is chaired by a member of the Executive Board. The primary function of the Committee is to oversee and lead on, on behalf of the Vice-Chancellor, all aspects of University health, safety and emergency management arrangements, seeking assurance and directing, as necessary, to ensure the University operates a good health and safety management system. The Committee receives and acts on reports from various specialist sub-Committees, including the Radiation Health and Safety Sub-Committee, and is the route by which all significant health and safety issues are channeled to the Employer (University Council).

Radiation Health and Safety Sub-Committee

The Radiation Health and Safety Sub-Committee, which includes the RPO and RPSs, meets twice a year to oversee, discuss, monitor and examine radiological issues affecting the University, consider current and planned radiation work, and to update on potential or impending changes to legislation.

The Sub-Committee reports to the Health, Safety & Emergency Management Committee.

Head of College and Directors of Professional Services

Heads of College and Directors of Professional Services are responsible, as applicable, for the implementation of the Ionising Radiation Policy and Local Rules. Head of College and Directors, with guidance from the RPO and RPA, shall, where applicable, nominate suitably qualified and trained member(s) of staff to manage radiation safety on a daily basis i.e. Radiation Protection Supervisors.

Heads of College and Directors of Professional Service, as applicable, must also be satisfied that suitable arrangements are in place for the management of radiation risk and relevant staff and students within their area of responsibility are aware of the University's rules and requirements regarding the management of open sources of ionising radiation.

Radiation Protection Advisor (RPA)

In accordance with the IRR2017, the University has appointed a Radiation Protection Advisor (RPA). The RPA, who is an external consultant, shall advise University management of all aspects of the use of ionising radiation and radioactive substances relating to the health and safety of workers, including the designation of workers and the classification of designated areas. The RPA's responsibilities include:

- Identifying requirements relating to Controlled and Supervised Areas.
- Prior examination of 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.
- Regular checking of work systems provided to restrict exposure to ionising radiation.
- Periodic examination and testing of engineering controls, design features, safety features, and warning devices and regular checking of systems of work to restrict exposure to ionising radiation.

The RPA will also be consulted in relation to:

- Prior Risk Assessments.
- Transport of Radioactive materials
- The conduct of various investigations required by IRR2017.
- The drawing up of contingency plans.
- Dose assessments and required records.

Radiation Waste Adviser (RWA)

The EPR 2016 require the permit holder to consult a Radioactive Waste Adviser on the following matters and have due regard to the advice provided by the Radioactive Waste Adviser:

- 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, or equipment and procedures for measuring and assessing, as appropriate, exposure and radioactive contamination of the environment and the population.

Radiation Protection Officer (RPO)

To ensure the requirements of the IRR2017 and the EPR2016 are met, the University has appointed a Radiation Protection Officer (RPO) to provide guidance and support. In addition, the RPO will provide support and co-ordinate with both the RPA and the RPSs with regards to ionising radiation issues. Responsibilities include:

- Managing the radiation database.
- Ensuring all radiation workers receive appropriate training before undertaking any radiation work.
- Appointing enough local RPSs with training provided as required.
- Ensuring suitable Local Rules and risk assessments are produced.
- Monitoring radiation areas to ensure Local Rules, Risk Assessments and safe working practices are followed.
- Coordinating the work required to upgrade / commission / de-commission radiation laboratory facilities.
- Provide advice and guidance to Campus Services, Colleges and Professional Services if impacted by radiation work.
- Provide advice and guidance to the Radiation Health and Safety Sub-Committee and Health, Safety and Emergency Management Committee, as appropriate.
- Liaising with Natural Resources Wales, the Health and Safety Executive, the Office of Nuclear Regulation, and other relevant bodies as applicable, on behalf of the University.
- Ensure regular calibration of measuring instruments and regular checking that they are serviceable and correctly used.
- Ensuring all accidents and incidents associated with radiation work are reported to Health and Safety, the RPA and other Regulatory Authorities, as required, with the subsequent investigation appropriate to the nature of the incident.

Radiation Protection Supervisors (RPS)

As required by the IRR2017, the University will appoint Radiation Protection Supervisors in all Colleges using ionising radiation to provide an adequate level of day-to-day supervision for all radiation work.

Persons appointed to the role of RPS should be suitably competent through their knowledge, ability, training and experience to carry out this role. The RPO and RPA will make recommendations to the Head of College as to the suitability of potential / proposed RPSs. Each RPS must be appointed in writing by their Head of College and will:

- Know and understand the requirements of the IRR2017 and relevant Local Rules.
- Provide training on local rules.
- Command sufficient authority from radiation workers to allow them to supervise the radiation protection aspects of their work.
- Understand the necessary precautions to be taken and the extent to which these precautions restrict exposure.
- Monitor their work areas to ensure the general infrastructure condition, to check safe working practices are followed and that equipment is tested / maintained / inspected as appropriate.
- Regularly check records to ensure they are maintained in accordance with the Local Rules with records forwarded to the RPO as required.
- Report faults / concerns as required.
- Know what action to take in an emergency.

RPSs will also assume responsibility as competent persons under EPR 2016 except where work with electrically generated x-rays is the only ionising radiation source used.

Radiation Worker

Radiation workers have a legal responsibility to protect both themselves and others from any hazard arising from their work and must not expose themselves or others to ionising radiation more than is reasonably necessary for the purpose of their work. They must also make full use of all protective equipment provided for their safety and dosimeters, reporting all defects immediately to the RPS.

As documented below, training will be provided to all new radiation workers. Before starting work with ionising radiations, radiation workers must be registered and receive a copy of the Local Rules for the area they will be working in, and which they must familiarise themselves with before training.

The RPO may revoke registrations to undertake radiation work if Local Rules, safe working practices etc. are not followed.

Maintenance Engineers

Maintenance personnel carrying out any maintenance/repairs to equipment in Designated Areas must be authorised and supervised by the RPS or RPO.

8. TRAINING AND INFORMATION

New Radiation Workers

To become registered as a University Radiation Worker, all radiation workers must receive the following training.

The RPO will provide EPR 2016, IRR 2017 and relevant University Health and Safety Policies training to all new workers, which includes the action to take in an emergency and maintain a record of such training. Following this awareness training the RPS will provide practical training, including both method

and Local Rules training and maintain a record of this. The RPO / RPA will periodically audit the RPSs training methods.

RPO

The RPO will be required to attend the RPS training course and specific training provided by the RPA. Additional / refresher training will then be arranged as advised by the RPA.

RPS(s)

Prior to appointment, all RPSs will be required to attend a 1-day site based RPS training course run by the RPA. Refresher training will be provided as required by the RPA.

Maintenance Engineers/Campus Services Maintenance Staff

The local RPS will provide job awareness training that covers the hazards and risks to maintenance engineers and Campus Services maintenance staff and contractors before they are permitted access, under direct supervision to radiological areas. In addition, the RPO will provide Laboratory Awareness training to relevant maintenance staff at the request of Campus Services.

Records of Training

The RPA will be responsible for maintaining records of RPO and RPS training. The RPO will maintain records of Radiation Worker training on the radiation database.

All records will include the date of the training, the title of the course, the person's name and who provided the training. Further information on the course content will be provided by the RPA / RPO if required.

Local Rules and Other Information

Local Rules are a legal requirement for Controlled and if applicable, Supervised Areas and are designed to ensure all exposures to ionising radiation are kept to as low as is reasonably practicable. Local Rules reflect good practice and are the cornerstone in ensuring compliance with IRR 2017 and EPR 2016. As such the University issues Local Rules (produced by the RPO and RPA) for all Designated Areas.

Radiation workers are informed and instructed about all Local Rules relevant to their work, which are also available in each Supervised Area.

In addition, a copy of the relevant Authorisations (Permit / Licence) will be available in each Radiation Laboratory.

9. PLANNING AND IMPLEMENTATION

Source Acquisition

All sources must be ordered via the database. The nominated RPS or the RPO will then order isotopes following checks to ensure a risk assessment is in place and that stock limits will not be exceeded.

Risk Assessments – General

A Radiological risk assessment must be completed and approved by the RPA / RPO before any new work activity involving ionising radiation commences.

The risk assessment must identify the hazards and evaluate the nature / magnitude of the risks to which workers and others could be subjected. In addition, it should take account of both normal operating conditions and realistic foreseeable accidents and incidents. Where an accident / incident is reasonably foreseeable a contingency plan must be detailed in the Local Rules and all radiation workers trained in implementing the contingency plan.

Infrastructure

The RPO will liaise with the RPA to make certain radiation laboratory facilities are suitable and fit for purpose. This will include communicating with Campus Services where required to ensure any building works carried out as part of radiation laboratory upgrades and / or during commissioning / de-commissioning are undertaken safely and in accordance with legislative requirements.

Equipment

Suitable equipment will be provided in each Radiation Laboratory for the radiation work to be undertaken with the local RPS seeking the advice of the RPO before purchasing any new equipment. In addition, the local RPS will be responsible for ensuring equipment is tested, maintained and inspected as required with records kept.

The RPO will ensure appropriate monitors are available in each laboratory. Monitors will be calibrated annually, affixing a label to indicate this has been undertaken.

Installation of X-ray Equipment

See specific Policy.

Incidents and Accidents

Appropriate spill kits will be provided in all radiation laboratories with the RPS instructed in their use, including the safe disposal of any materials and equipment used to clean spills.

All radiation workers will be instructed that any incident such as loss, theft, contamination of persons, spillage of stock material, contamination spread outside the work area, failure of engineering controls etc must be reported immediately to the RPS who will notify the RPO.

The RPO will then be responsible for informing Head of Health and Safety, Campus Services and the RPA.

Investigation

The RPO (with assistance from the RPA) will investigate any incident / accident, acting on the results of the investigation and preparing a report for the RPA and Senior Management. The RPO, with guidance from the RPA, will determine if the incident is notifiable to the regulator/s (Natural Resources Wales (NRW), Health & Safety Executive (HSE)), Office of Nuclear Regulation (ONR), and the Police.

Notification of Certain Occurrences

The RPO will notify, without delay NRW of the following events:

- Malfunction, breakdown or failure of equipment or techniques or accident, which has caused, is causing or may cause significant pollution or may generate significant amounts of radioactive waste
- The breach of a limit specified in a permit
- Any significant adverse environmental effects
- Any escape of accumulated radioactive waste
- Theft or loss of radioactive waste or material. **NOTE:** The Police will also be informed in such instances.

Records

Records of risk assessments, accident and incidents and the isotope database will be maintained by the RPO.

Monitoring

The local RPS will, on a day to day basis, be responsible for ensuring radiation workers comply with relevant Local Rules and controls outlined in associated radiation work Risk Assessments. The RPO will support this by undertaking regular spot checks to ensure safe working practices are followed.

Change in Details / Cessation of Use

The RPO will notify the NRW / ONR in writing, at least 14 days in advance of any change in the University's registered name or address and 21 days in advance of the intention to cease to keep or use radioactive material, or to cease to accumulate or dispose of radioactive waste.

10. EQUALITY IMPACT ASSESSMENT

Every effort must be made to support individuals so they are treated equally and to enable them to undertake their tasks in the same way as their peers.

However, in some rare instances, there may be a requirement to treat 'persons with a protected characteristic' differently to safeguard their own health, safety and well-being. Any such consideration will be discussed with the RPA, the RPO and the individual concerned with reasonable adjustments made where possible.

11. AUDITS

Health and Safety, Campus Services, may undertake periodic audits or reviews to assess the effectiveness of and compliance with, this Policy.

Colleges / Professional Services must periodically review their own procedures to ensure the requirements of this Policy are implemented, suitable and effective.

The Health, Safety and Emergency Management Committee will review this Policy in accordance with the agreed Review Schedule.

In addition, this Radiation Management System will be audited by the RPA on an annual basis with the formal report and any remedial actions required sent to the RPO for implementation.

Ends.