

Policy Under Review

Please note that this policy is under review. It does, however, remain current Trust policy subject to any recent legislative changes, national policy instruction (NHS or Department of Health), or Trust Board decision. For guidance, please contact the Author/Owner.

Information Category	Detailed Information
Document Title:	Ionising Radiation Safety Policy V3.2
This document replaces (exact title of previous version):	Ionising Radiation Safety Policy V3.1
Date Issued / Approved:	October 2023
Date Valid From:	October 2023
Date Valid To:	May 2026
Author / Owner:	Trevelyan Foy, Radiation Protection Adviser/Radioactive Waste Adviser
Contact details:	01872 252495
Brief summary of contents:	Policy and procedures to ensure the health, safety and welfare of staff, patients and members of public who may be exposed to hazards arising from the use of ionising radiations on the Trust's premises and areas on other sites where Trust staff work.
Suggested Keywords:	Ionising, IRR, IRMER, radiation, safety, x-ray, xray.
Target Audience:	RCHT: Yes CFT: No CIOS ICB: No
Executive Director responsible for Policy:	Chief Medical Officer
Approval route for consultation and ratification:	Radiation Protection Committee
Manager confirming approval processes:	Richard Andrzejuk

Information Category	Detailed Information
Name of Governance Lead confirming consultation and ratification:	Kevin Wright
Links to key external standards:	<p>The Ionising Radiations Regulations 2017.</p> <p>The Ionising Radiation (Medical Exposure) Regulations 2017.</p> <p>The Health and Safety at Work Act, 1974.</p> <p>The Environmental Permitting Regulations 2010.</p> <p>The Management of Health and Safety at Work Regulations 1999.</p> <p>Work with Ionising Radiation: Approved Code of Practice and Guidance. L121.</p> <p>Fitness of Equipment Used For Medical Exposure to Ionising Radiation – Guidance Note PM 77.</p>
Related Documents:	<p>Non-Ionising (Laser and Optical) Radiation Safety Policy.</p> <p>Core Training Policy.</p>
Training Need Identified:	Yes, in conjunction with Learning and Development
Publication Location (refer to Policy on Policies – Approvals and Ratification):	Internet and Intranet
Document Library Folder/Sub Folder:	Clinical / Medical Physics

This document is only valid on the day of printing.

Controlled Document.

This document has been created following the Royal Cornwall Hospitals NHS Trust Policy on Document Production. It should not be altered in any way without the express permission of the author or their Line Manager.

Ionising Radiation Safety Policy

V3.2

October 2023

UNDER REVIEW

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Data Protection Act 2018 (UK General Data Protection Regulation – GDPR) Legislation.

The Trust has a duty under the Data Protection Act 2018 and UK General Data Protection Regulations 2016/679 to ensure that there is a valid legal basis to process personal and sensitive data. The legal basis for processing must be identified and documented before the processing begins. In many cases we may need consent; this must be explicit, informed, and documented. We cannot rely on opt out, it must be opt in.

Data Protection Act 2018 and UK General Data Protection Regulations 2016/679 is applicable to all staff; this includes those working as contractors and providers of services.

For more information about your obligations under the Data Protection Act 2018 and UK General Data Protection Regulations 2016/679 please see the Information Use Framework Policy or contact the Information Governance Team.

Royal Cornwall Hospital Trust rch-tr.infogov@nhs.net

UNDER REVIEW

1. Introduction

- 1.1. The Trust has numerous sources of ionising radiation under its control, including x-ray-generating equipment, both diagnostic and therapeutic, together with both sealed and unsealed radioactive sources. These sources are used to benefit patients directly through Medical Exposures and indirectly through the maintenance and calibration of associated equipment and research and development activities.
- 1.2. Medical Exposures are used within the Trust for the purposes of medical diagnosis, treatment, research, occupational health surveillance, health screening and as a medico-legal procedure.
- 1.3. This policy addresses ionising radiation. Laser and non-laser optical radiation sources (i.e. infra-red, visible, ultraviolet) are addressed in the Non-Ionising (Laser and Optical) Radiation Safety Policy, accessible via the document library.
- 1.4. This version supersedes any previous versions of this document.

2. Purpose of this Policy/Procedure

- 2.1. It is the policy of Royal Cornwall Hospitals NHS Trust, to ensure that staff, patients, visitors, contractors, members of the public and the environment are not exposed unnecessarily to ionising radiation in order to minimise the health risks arising from the Trust's use of ionising radiation.
- 2.2. All usage of ionising radiation must be justified and controlled such that any exposure received by any person is as low as reasonably practicable, social, and economic factors being taken into account. More detailed safety rules and guidance are identified in departmental quality systems, local rules, procedures, and other radiation safety documentation which support this policy.
- 2.3. The Trust will fully co-operate with any inspections by statutory bodies and furnish any information requested. The Trust will respond expeditiously to requirements and comments raised by an inspector.
- 2.4. Royal Cornwall Hospitals NHS Trust accepts its responsibility to comply with the requirements of the relevant UK legislation, including:
 - Ionising Radiations Regulations 2017 (IRR 2017).
 - Ionising Radiation (Medical Exposure) Regulations 2017 (IR(ME)R).
 - Environmental Permitting Regulations (EPR).
 - Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations (CDG).
- 2.5. Failure to comply with this policy may lead to disciplinary action and/or prosecution of the Trust or individual.

3. Scope

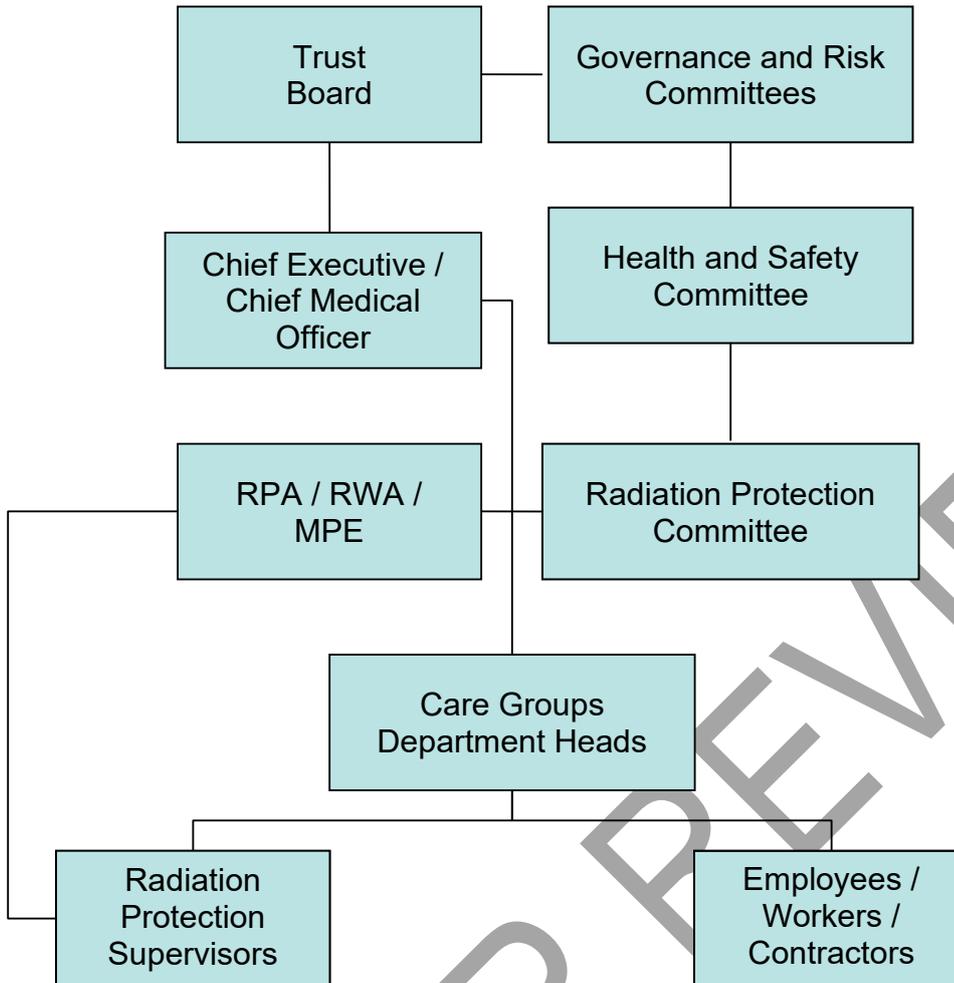
- 3.1. This policy applies to all individuals employed by or providing a service on behalf of the Trust including contractors, voluntary workers, supernumerary staff, students, locum, and agency staff and to individuals holding honorary employment contracts.
- 3.2. This policy covers all sites owned by Royal Cornwall Hospitals NHS Trust and those areas on other Employer's sites where RCHT staff work with ionising radiation (including community hospitals).
- 3.3. This policy will be enforced and amplified by written Standard Operating Procedures, which are the responsibility of Clinical Directors/ Head of Departments.

4. Definitions / Glossary

Term / Abbreviation	Definition
Dose	In relation to ionising radiation, any measure of cumulative exposure to ionising radiation that may be compared with the limit values specified in IRR2017 Schedule 3.
DRL	Diagnostic Reference Level. A level of dose that is not expected to be exceeded for a typical examination of a standard-sized patient.
IRR2017	The Ionising Radiations Regulations 2017. A statutory instrument enacted for the purposes of protecting employees and members of the public from the risks associated with work with ionising radiation.
IR(ME)R	The Ionising Radiation (Medical Exposure) Regulations 2017. A statutory instrument enacted for the purposes of protecting patients and research participants from the risks associated with the use of ionising radiation for medical diagnosis and treatment.
Local Rules	Systems of work for a specific area or a specific practice made in accordance with the Ionising Radiations Regulations for the purposes of ensuring that exposures to staff and the public are restricted so far as reasonably practicable.
Medical Exposure	Exposure of a person to ionising radiation for the purpose of medical or dental examination or treatment which is conducted under the direction of a suitably qualified person. Medical exposures include any such exposure carried out for legal purposes; for the purposes of research; or incurred when knowingly and willingly providing support for another's medical exposure.

Term / Abbreviation	Definition
MPE	<p>Medical Physics Expert.</p> <p>An individual having the knowledge, training, and experience to act or give advice on matters relating to radiation physics applied to exposure, whose competence in this respect is recognised by the Secretary of State.</p>
RPA	<p>Radiation Protection Adviser.</p> <p>An individual who meets such criteria of competence as may from time to time be specified in writing by the Health and Safety Executive. The RPA advises the Trust on compliance with the Ionising Radiations Regulations 2017.</p>
RPS	<p>Radiation Protection Supervisor.</p> <p>An individual appointed by the Trust to help ensure compliance with IRR2017, in particular by supervising the arrangements set out in the Local Rules.</p>
RWA	<p>Radioactive Waste Adviser.</p> <p>An individual with the knowledge, training and experience needed to give radioactive waste management and environmental radiation protection advice in relation to radioactive waste in order to ensure the effective protection of members of the public, and whose competence in that respect is recognised by the regulator.</p>
Trust	<p>Royal Cornwall Hospitals NHS Trust.</p> <p>The Trust is the Employer for the purposes of the legislation except where specifically identified.</p>

5. Ownership and Responsibilities



5.1. The Trust Board

The Trust Board retains overall responsibility for the health, safety, and welfare of employees and non-employees.

5.2. The Chief Executive

5.2.1. The overall and final responsibility for Health and Safety and Environmental Protection rests with the Chief Executive.

5.2.2. Overall responsibility for ensuring that the Trust complies with the requirements of the relevant legislation. This responsibility cannot be delegated.

5.3. The Chief Medical Officer

The Chief Medical Officer is identified as the Trust Board member with operational responsibility for radiation safety.

5.4. The Radiation Protection Committee

The Radiation Protection Committee, which meets twice annually, reviews, and advises on the implementation of the relevant radiation protection legislation and on other Health and Safety matters in connection with both ionising and non-ionising radiations. The Committee will inform the Trust, via the governance structure, of the state of protection arrangements in force. The full responsibilities of the committee are detailed in the terms of reference.

5.5. Occupational Health Department

The Occupational Health Department will provide an Appointed Doctor for the health surveillance and assessment of the fitness to work of classified employees.

5.6. Roles of Staff with Specific Radiation Safety Responsibilities

5.6.1. The Radiation Protection Adviser (RPA)

The Radiation Protection Adviser, formally appointed by the Chief Medical Officer on behalf of the Trust, provides expert advice on radiation matters to assist the Trust with compliance with the requirements of the relevant legislation. They must be consulted on all matters required by the legislation.

5.6.2. The Radioactive Waste Adviser (RWA)

The Radioactive Waste Adviser is formally appointed by the Director of Medical Physics and Clinical Technology on behalf of the Trust to provide qualified expert advice in respect to legislation pertaining to the accumulation and disposal of radioactive waste, particularly the Environmental Permitting Regulations 2010. They must be consulted on all matters required by the legislation.

5.6.3. Medical Physics Expert(s) (MPE)

Medical Physics Experts are formally appointed by the Director of Medical Physics and Clinical Technology on behalf of the Trust to act as duty holders under IR(ME)R in the areas of Diagnostic Radiology, Radiotherapy and/or Nuclear Medicine to provide advice on dosimetry and contribute to quality assurance, optimisation and radiation protection relating to medical exposures.

5.6.4. Radiation Protection Supervisors (RPS)

5.6.4.1. Radiation Protection Supervisors are formally appointed by Service Managers/Department Heads, with advice from the RPA as needed. This appointment is made on behalf of the Trust.

5.6.4.2. Radiation Protection Supervisors supervise all work practices using ionising radiation within their defined area of responsibility, to:

- Ensure that they are undertaken in accordance with the Local Rules.
- Ensure all safety devices provided are utilised and maintained, protective equipment worn, and safe working practices applied.

5.6.4.3. In addition, the RPS:

- Reports and investigates all radiation accidents and incidents which involve members of staff and the public, including environmental incidents.
- Actions any radiation safety matter brought to their notice, and reports to their Manager on any matter which they are unable to rectify.

5.6.5. **Appointed Doctor**

The Appointed Doctor carries out an assessment of the fitness to work of those employees that have been identified as requiring classification and conducts routine health surveillance for all currently classified staff.

5.7. **Head of Planning and Projects**

The Head of Planning and Projects ensures that:

- The RPA and MPE are consulted at the facility design stage as subject matter experts to advise on radiation protection and equipment selection.
- The final plans for new or modified facilities have the approval and sign-off of the RPA prior to commissioning. (See [Appendix 3](#)).

5.8. **The Head of Procurement and Supplies**

The Head of Procurement is responsible for ensuring that specifications for radiation sources and equipment used in connection with medical exposure are approved by the respective MPE and RPA prior to equipment purchase/issue of invitations for tender. (See [Appendix 3](#)).

5.9. **Triumvirate Members**

Triumvirate members ensure that specialist radiation safety training of all personnel under their control is carried out.

5.10. **Service Managers/Department Heads**

Service Managers / Department Heads are responsible within their area for:

- 5.10.1. Operational management of radiation protection in the areas for which they are responsible.

- 5.10.2. Ensuring that the RPA (and MPE, where applicable) is fully aware of all existing and proposed uses of ionising radiation within their area and for seeking advice from specialist advisers on safety and compliance, in particular risk management.
- 5.10.3. Risk management surrounding the use of ionising radiations, including ensuring that Prior Risk Assessments are performed when introducing new or modified equipment and techniques, and that these are subject to review.
- 5.10.4. Ensuring that the RPA and MPE are involved in the planning and purchase of all new and replacement facilities and equipment that utilise ionising radiation – see [Appendix 3](#).
- 5.10.5. Identifying suitably trained candidates to be formally appointed by the Employer as Radiation Protection Supervisors for each area where work with ionising radiation is undertaken.
- 5.10.6. Maintaining quality systems as required by the regulations, including the implementation of written procedures concerning medical exposures in accordance with the Ionising Radiation (Medical Exposure) Regulations 2017.
- 5.10.7. The safe management of radioactive sources and disposal of radioactive waste.
- 5.10.8. Management of equipment used in relation to work with ionising radiations.
- 5.10.9. Ensuring that equipment is added to the Trust's equipment replacement programme where there are safety concerns or where cost-benefit analysis demonstrates that exposure arising from the equipment is no longer as low as reasonably practicable, social, and economic factors being taken into account.
- 5.10.10. Ensuring that all staff working with ionising radiations receive appropriate training and records of training are maintained.
- 5.10.11. Ensuring that staff comply with Trust procedures and SOPs relating to radiation.
- 5.10.12. Undertaking a programme of clinical audit.
- 5.10.13. Providing regular reports to the Radiation Protection Committee on compliance with the arrangements in place for radiation protection of staff, patients, and the public.
- 5.10.14. Ensuring that repeated occurrences of non-compliance with radiation protection arrangements, including those relating to personal dosimetry, are escalated in accordance with the appropriate Trust processes. As a general indication, the following steps are recommended:
 - First occurrence within a rolling 12-month period is a discussion with their line manager, summarised in an email to create an audit trail.

- Second occurrence is a further discussion, recorded on the personnel file, and the individual is asked to write a reflection on the incident.
- Third occurrence is a formal, documented discussion that is escalated to Clinical Director and Head of Department with potential action under the appropriate Trust process.

5.11. All Employees

All employees have a duty to take reasonable care, when carrying out their work, to protect themselves, their colleagues, and any other person. They must:

- 5.11.1. Perform their work in accordance with their training such that they do not place themselves or others at risk.
- 5.11.2. Not attempt to carry out work with ionising radiation nor perform any task nor operate any radiation equipment unless they have been correctly trained and authorised to do so.
- 5.11.3. Exercise reasonable care in carrying out their duties and work in accordance with the Local Rules and Standard Operating Procedures.
- 5.11.4. Comply with the employer's procedures and protocols for medical exposures.
- 5.11.5. Attend training programmes as required by the Trust and provide the Trust with documentation of continuing education, if required.
- 5.11.6. Only undertake work for which they have been authorised and adequately trained.
- 5.11.7. Use the protective clothing and equipment provided for their safety and ensure that it is maintained in a safe condition.
- 5.11.8. Wear, replace and return as directed any personal dosimeters issued to them.
- 5.11.9. Report to their immediate line manager or radiation protection supervisor any unsafe acts and conditions, including faults in equipment, facilities or procedures that may adversely affect the health and safety of any person, or cause untoward radiation exposure of an individual so that remedial action can be taken to manage the risk.
- 5.11.10. Report any accident incident in which a patient or member of staff may have received an unintended or greater than intended radiation exposure or where there was a failure in radiation protection arrangements.

6. Standards and Practice

6.1. Overview

- 6.1.1. The Trust is committed to minimising risks arising from the Trust's use of ionising radiations.
- 6.1.2. The Trust will ensure that structures and systems are in place and regularly reviewed in order to ensure that:
 - A radiation protection management structure is developed and maintained to ensure that the Trust complies with current legislation.
 - Any new practice involving the use of ionising radiation shall undergo prior risk assessment.
 - The risk resulting from any exposure to radiation shall be exceeded by the individual or societal benefit it produces, i.e. practices shall only be undertaken where they are justified.
 - The dose from any diagnostic medical exposure is kept as low as is reasonably practicable (ALARP) social and economic factors being taken into account, consistent with the required clinical purpose.
 - All exposures of target volumes for external beam radiotherapy shall be individually planned, taking into account that doses to non-target tissues/critical organs shall be kept ALARP, consistent with the intended therapeutic purpose.
 - All exposures to members of the public, staff and contractors, and the environment will be ALARP and constrained in accordance with best practice standards and guidance.
 - It is not reasonably foreseeable for an individual dose limit to be exceeded (or alternatively register the individual as a classified worker).
 - Employees are appropriately trained and undergo relevant continuous training and development.

6.2. Medical Exposures

- 6.2.1. Any equipment or apparatus used in connection with medical exposures will be selected, installed, and maintained so as to restrict, as far as reasonably practicable, the exposure of the patient consistent with the intended clinical purpose. See Appendix 3.
- 6.2.2. Quality Assurance tests will be carried out at regular intervals in accordance with legislation or recommended standards on all equipment or apparatus involved in medical exposures.

- 6.2.3. Each department conducting medical exposures shall develop (in conjunction with the Medical Physics Expert):
- A set of Standard Operating Procedures (SOP) to address the requirements of IR(ME)R Regulation 6(1) regarding procedures.
 - Written protocols for every standard radiological practice (exposure charts/programmes).
 - Diagnostic Reference Levels for diagnostic examinations.
 - Referral criteria.
 - QA procedures together with measures for review and clinical audit.
 - A register of practitioners and operators in their area of work that includes name, dates and nature of training and the extent of their duties under IR(ME)R.

6.3. Adverse Event Reporting

- 6.3.1. All adverse events shall be recorded in accordance with standard Trust procedures (DATIX). For radiation, this shall include breaches of the local rules, events in which a patient or member of staff may have received an exposure much greater than intended, where no exposure was intended, or for radiotherapy treatment exposure less than intended.
- 6.3.2. An investigation shall be undertaken by the Head of Department in conjunction with the RPA (and MPE, as appropriate).
- 6.3.3. The RPA/MPE shall report the event as may be required to the appropriate external regulatory agencies.

6.4. Pregnant or Breastfeeding Staff

- 6.4.1. Anyone working with ionising radiation who becomes pregnant should inform their manager in writing immediately, so that an individual risk assessment can be performed, and a dose assessment undertaken if necessary.
- 6.4.2. Before returning to work with unsealed radioactive materials staff should inform their manager if they are intending to breastfeed so that arrangements can be made for a risk assessment to be undertaken.

6.5. Co-operation Between Employers

The Trust will establish good communication and co-operation with those employers whose staff may be occupationally exposed by the Trust's radiation work.

6.6. Training

- 6.6.1. The Trust will ensure that staff working with ionising radiation will be trained to a level commensurate with the work being performed and the degree of hazard involved. The training needs analysis for radiation protection will be contained within Trust training policy.
- 6.6.2. All IR(ME)R practitioners and operators must have received adequate training as defined in IR(ME)R 17.1- 17.6
- 6.6.3. Staff acting as practitioners for the clinical administration of radiopharmaceuticals or the clinical use of sealed radioactive sources must hold an appropriate certificate from the Administration of Radioactive Substances Advisory Committee (ARSAC) as required by IRMER 2017.
- 6.6.4. All drivers of vehicles carrying radioactive material must receive adequate training in accordance with the ADR / Carriage of Dangerous Goods Act.
- 6.6.5. For staff whose regular duties involve work with ionising radiation, role specific training shall be provided at local departmental induction.
- 6.6.6. It is the responsibility of the local Head of Department to liaise with the RPA/MPE regarding the scope, content and suitability of the training programme provided.
- 6.6.7. Heads of Departments shall ensure that audit of compliance with training requirements is carried out.
- 6.6.8. For staff whose role requires professional registration, they shall undertake suitable CPD activities and maintain that registration.
- 6.6.9. Trust-wide standards of radiation protection training shall be monitored by the Radiation Protection Committee.
- 6.6.10. Training routes and materials shall be reviewed at least 3-yearly.
- 6.6.11. The RPA/MPE shall continuously monitor for changes in legislation or best practice standards or guidance that may present a further training need.

7. Dissemination and Implementation

Upon ratification by the Radiation Protection Committee and authorisation by the Chief Medical Officer, this policy shall be disseminated by storage on the electronic document library.

8. Monitoring compliance and effectiveness

Information Category	Detail of process and methodology for monitoring compliance
Element to be monitored	Effectiveness of Policy
Lead	Radiation Protection Committee
Tool	<ul style="list-style-type: none"> • Reports of Expert Advisers. • Reports of Committee members. • Correspondence from staff. • Reports of adverse events. Reports of external inspections or assessments.
Frequency	Six Monthly.
Reporting arrangements	Summary Minutes to Chief Medical Officer.
Acting on recommendations and Lead(s)	Actions identified by RPC to be acted upon by respective Heads of Department.
Change in practice and lessons to be shared	Changes in practice will be fed back to RPC.

9. Updating and Review

- 9.1. The Radiation Protection Committee shall review this policy at least once every three years.
- 9.2. Heads of Departments shall provide feedback to the RPC Chair any arising need for changes to this policy.
- 9.3. The expert advisers (RPA and MPE) shall continuously monitor for changes in legislation or current best practice standards and guidance. Upon their recommendation a full review of this policy shall be commenced.
- 9.4. Any revision activity is to be recorded in the Version Control Table as part of the document control process.

10. Equality and Diversity

- 10.1. This document complies with the Royal Cornwall Hospitals NHS Trust service Equality and Diversity statement which can be found in the [Equality Diversity And Inclusion Policy](#) or the [Equality and Diversity website](#).

10.2. Equality Impact Assessment

The Initial Equality Impact Assessment Screening Form is at Appendix 2.

Appendix 1. Governance Information

Information Category	Detailed Information
Document Title:	Ionising Radiation Safety Policy V3.2
This document replaces (exact title of previous version):	Ionising Radiation Safety Policy V3.1
Date Issued / Approved:	October 2023
Date Valid From:	October 2023
Date Valid To:	November 2025
Author / Owner:	Trevelyan Foy, Radiation Protection Adviser/Radioactive Waste Adviser
Contact details:	01872 252495
Brief summary of contents:	Policy and procedures to ensure the health, safety and welfare of staff, patients and members of public who may be exposed to hazards arising from the use of ionising radiations on the Trust's premises and areas on other sites where Trust staff work.
Suggested Keywords:	Ionising, IRR, IRMER, radiation, safety, x-ray, xray.
Target Audience:	RCHT: Yes CFT: No CIOB ICB: No
Executive Director responsible for Policy:	Chief Medical Officer
Approval route for consultation and ratification:	Radiation Protection Committee
Manager confirming approval processes:	Richard Andrzejuk
Name of Governance Lead confirming consultation and ratification:	Kevin Wright

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Links to key external standards:	<p>The Ionising Radiations Regulations 2017.</p> <p>The Ionising Radiation (Medical Exposure) Regulations 2017.</p> <p>The Health and Safety at Work Act, 1974.</p> <p>The Environmental Permitting Regulations 2010.</p> <p>The Management of Health and Safety at Work Regulations 1999.</p> <p>Work with Ionising Radiation: Approved Code of Practice and Guidance. L121.</p> <p>Fitness of Equipment Used For Medical Exposure to Ionising Radiation – Guidance Note PM 77.</p>
Related Documents:	<p>Non-Ionising (Laser and Optical) Radiation Safety Policy.</p> <p>Core Training Policy.</p>
Training Need Identified:	Yes, in conjunction with Learning and Development
Publication Location (refer to Policy on Policies – Approvals and Ratification):	Internet and Intranet
Document Library Folder/Sub Folder:	Clinical / Medical Physics

Version Control Table

Date	Version Number	Summary of Changes	Changes Made by
01.07.2002	V2.0	Original	
01.07.2007	V2.1	Minor amendments.	Richard Cranage (Radiation Protection Adviser)
22.10.2009	V2.2	Minor amendments, changes to TOR of RP Committee.	Richard Cranage (RPA)
11.07.2011	V2.3	Changes in structure to reflect policy on policies. Revision of appendices. 'Ionising' added to title for clarity.	Richard Cranage (RPA) / Trevelyan Foy (MPE)

Date	Version Number	Summary of Changes	Changes Made by
18.02.2013	V2.4	Appendix 4 – Radioactive Materials added. Role of RWA added.	Trevelyan Foy (RPA)
06.07.2017	V2.5	Interim revision pending new legislation – policy version 2.4 transcribed onto new Trust policy template.	Trevelyan Foy (RPA)
08/01/2019	V3.0	Updated to reflect new legislation. Appendix regarding transport of radioactive materials added.	Trevelyan Foy (RPA/RWA) / Tracy Cayton-Smith (MPE) / Chloe Trevail
14/10/2022	V3.1	Expansion of definitions/glossary. Minor formatting changes. Change to quoracy of RPC.	Trevelyan Foy / Lorna Sweetman
21/09/2023	V3.2	RPC membership and terms of reference moved to separate document. Added detail to the escalation process for non-compliance with radiation protection arrangements (in response to HSE recommendation).	Lorna Sweetman

All or part of this document can be released under the Freedom of Information Act 2000.

All Policies, Strategies and Operating Procedures, including Business Plans, are to be kept for the lifetime of the organisation plus 6 years.

This document is only valid on the day of printing.

Controlled Document.

This document has been created following the Royal Cornwall Hospitals NHS Trust [The Policy on Policies \(Development and Management of Knowledge Procedural and Web Documents Policy\)](#). It should not be altered in any way without the express permission of the author or their Line Manager.

Appendix 2. Equality Impact Assessment

Section 1: Equality Impact Assessment (EIA) Form

The EIA process allows the Trust to identify where a policy or service may have a negative impact on an individual or particular group of people.

For guidance please refer to the Equality Impact Assessment Policy (available from the document library) or contact the Equality, Diversity, and Inclusion Team
rcht.inclusion@nhs.net

Information Category	Detailed Information
Name of the strategy / policy / proposal / service function to be assessed:	Ionising Radiation Safety Policy V3.2
Department and Service Area:	Medical Physics
Is this a new or existing document?	Existing
Name of individual completing EIA (Should be completed by an individual with a good understanding of the Service/Policy):	Trevelyan Foy, Radiation Protection Adviser/Radioactive Waste Adviser
Contact details:	01872 252495

Information Category	Detailed Information
Policy Aim - Who is the Policy aimed at? (The Policy is the Strategy, Policy, Proposal or Service Change to be assessed)	Minimise the risk posed by exposure to ionising radiations.
Policy Objectives	Ensure exposures (except exposure of radiotherapy target volumes) are maintained as low as reasonably practicable, social, and economic factors being taken into account.
Policy Intended Outcomes	High standards of regulatory compliance. Minimisation of health detriment.
How will you measure each outcome?	Monitoring of patient radiation doses, staff doses, results of environmental monitoring, monitoring of adverse events (DATIX).
Who is intended to benefit from the policy?	Staff, patients, visitors, volunteers, contractors, and the environment.

Information Category	Detailed Information
6a. Who did you consult with? (Please select Yes or No for each category)	<ul style="list-style-type: none"> • Workforce: Yes • Patients/ visitors: No • Local groups/ system partners: No • External organisations: No • Other: No
6b. Please list the individuals/groups who have been consulted about this policy.	Please record specific names of individuals/ groups: Radiation Protection Committee (RPC).
6c. What was the outcome of the consultation?	Re-ratification of existing policy.
6d. Have you used any of the following to assist your assessment?	National or local statistics, audits, activity reports, process maps, complaints, staff, or patient surveys: No.

7. The Impact

Following consultation with key groups, has a negative impact been identified for any protected characteristic? Please note that a rationale is required for each one.

Where a negative impact is identified without rationale, the key groups will need to be consulted again.

Protected Characteristic	(Yes or No)	Rationale
Age	No	
Sex (male or female)	No	
Gender reassignment (Transgender, non-binary, gender fluid etc.)	No	
Race	No	
Disability (e.g. physical or cognitive impairment, mental health, long term conditions etc.)	No	
Religion or belief	No	
Marriage and civil partnership	No	

Protected Characteristic	(Yes or No)	Rationale
Pregnancy and maternity	No	
Sexual orientation (e.g. gay, straight, bisexual, lesbian etc.)	No	

A robust rationale must be in place for all protected characteristics. If a negative impact has been identified, please complete section 2. If no negative impact has been identified and if this is not a major service change, you can end the assessment here.

I am confident that section 2 of this EIA does not need completing as there are no highlighted risks of negative impact occurring because of this policy.

Name of person confirming result of initial impact assessment: Trevelyan Foy, Radiation Protection Adviser/Radioactive Waste Adviser.

If a negative impact has been identified above OR this is a major service change, you will need to complete section 2 of the EIA form available here:

[Section 2. Full Equality Analysis](#)

UNDER REVIEW

Appendix 3. Design of New or Modified Facilities and/or Procurement of Equipment Used in Connection with Medical Exposure

1. Definition of Equipment Used in Connection With Medical Exposure

1.1. 'Equipment used in connection with medical exposure' includes all equipment whose design, construction, installation, or maintenance can affect the magnitude or distribution of the dose of the person undergoing medical exposure. It includes:

1.1.1. **Radiation equipment:** equipment that delivers ionising radiation to the person undergoing a medical exposure AND equipment that directly controls the extent of that exposure.

1.1.2. **Ancillary equipment:** such as digital imaging systems, couches, anti-scatter grids, beam modifiers (filters, wedges, applicators), computerised radiotherapy treatment planning systems, radioisotope dose calibrators, image recording systems such as digital detectors.

2. Operational Implementation

2.1. N.B. A diagrammatic representation of these arrangements is shown below.

2.2. The Trust will:

2.2.1. Implement appropriate arrangements via its management structures to ensure that consultation with an RPA in accordance with IRR2017 is undertaken with respect to any new or modified sources of radiation, or new or modified radiation facilities.

2.2.2. Implement appropriate arrangements via its management structures to ensure that consultation with an RPA/MPE in accordance with IRR2017 is undertaken regarding the selection and use of equipment used in connection with medical exposure.

2.3. **Heads of Department**, in conjunction with the nominated **Project Manager** (where applicable) must implement this procedure within their area regarding proposed:

- New or second-hand radiation sources or equipment used in connection with medical exposure.
- Replacement radiation sources or equipment used in connection with medical exposure.
- Modified radiation sources or equipment used in connection with medical exposure.
- Use of loan, hire or demonstration sources or equipment used in connection with medical exposure.
- New or replacement facilities.

- Modifications to existing facilities

2.3.1. They shall:

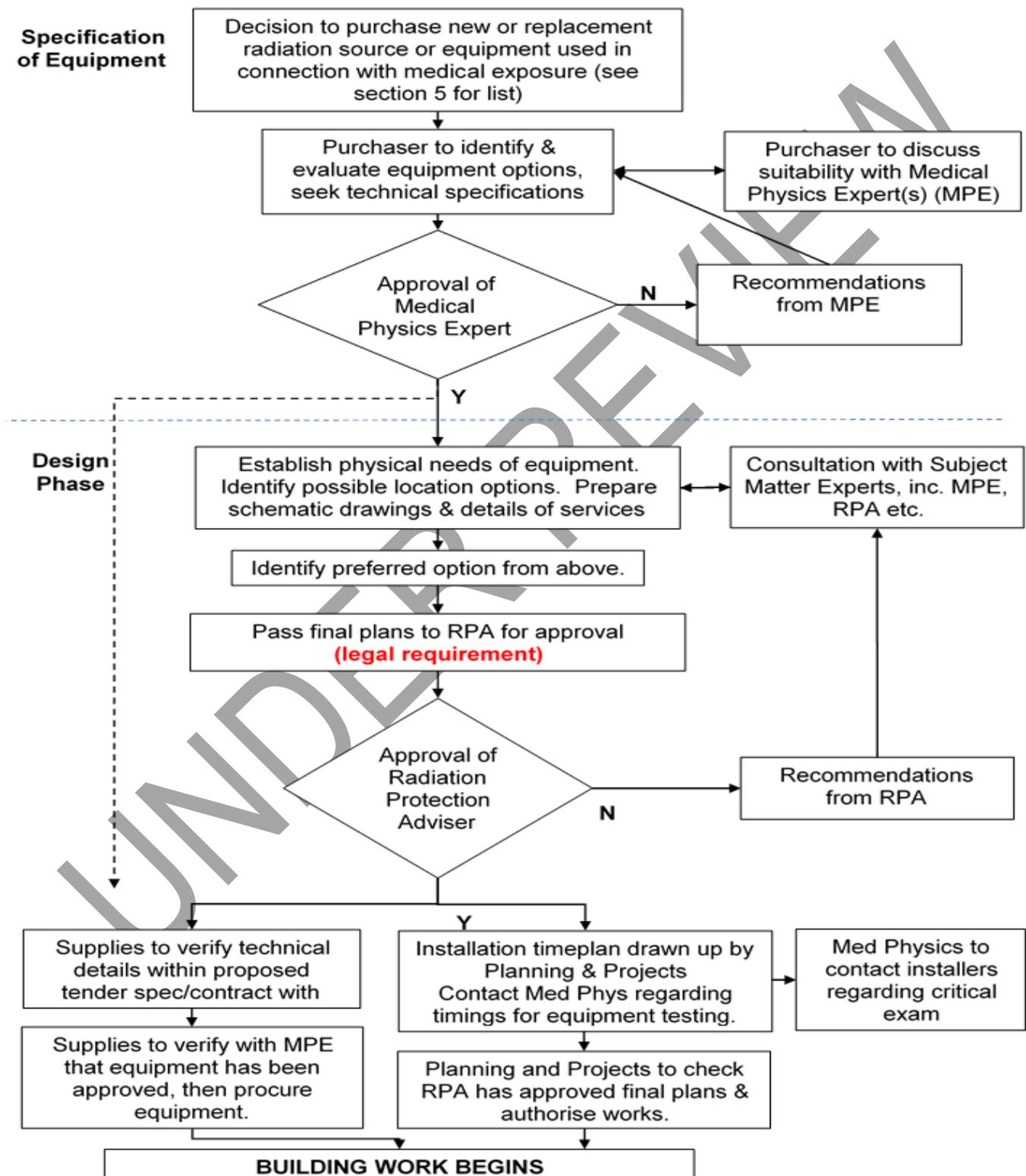
- Ensure that radiation risk assessments are undertaken, in accordance with the radiation risk assessment procedure.
- During development of the equipment and or facility specification, consult with the Radiation Protection Adviser(s) (RPA).
- For equipment used in connection with medical exposure, during development of the equipment specification, engage in consultation with the Medical Physics Expert(s) (MPE) regarding the specification and suitability of equipment.
- Supply such information as may be required by the RPA or MPE to make an assessment – e.g. equipment specifications, floor plans, description, and scope of intended work.
- Ensure, in conjunction with the Head of Planning and Projects, that RPA approval of the plans for new facilities is obtained.
- Ensure, in conjunction with the Head of Procurement and Supplies, that RPA, and where appropriate MPE, approval of the equipment specification is obtained.
- Ensure, in conjunction with the Head of Procurement and Supplies, that the RPA/MPE ensures appropriate technical details are included within tender specification documents.
- Ensure that the RPA is given access to inspect/test shielding during any building works.
- Where applicable, ensure that the installer undertakes a critical examination the equipment and consults with the Trust RPA regarding the outcomes of that examination, addressing any recommendations of the RPA.
- For equipment used in connection with medical exposure, ensure the equipment is acceptance tested by Clinical and Radiation Physics prior to clinical use and that recommendations from the MPE regarding the outcomes of that examination are addressed.
- Ensure that operators are given adequate training as advised by the RPA/MPE.
- For diagnostic imaging equipment and techniques, ensure that diagnostic reference levels (DRLs) are established in conjunction with the MPE.
- Under advice from the RPA/MPE, ensure that a suitable quality assurance programme is implemented.

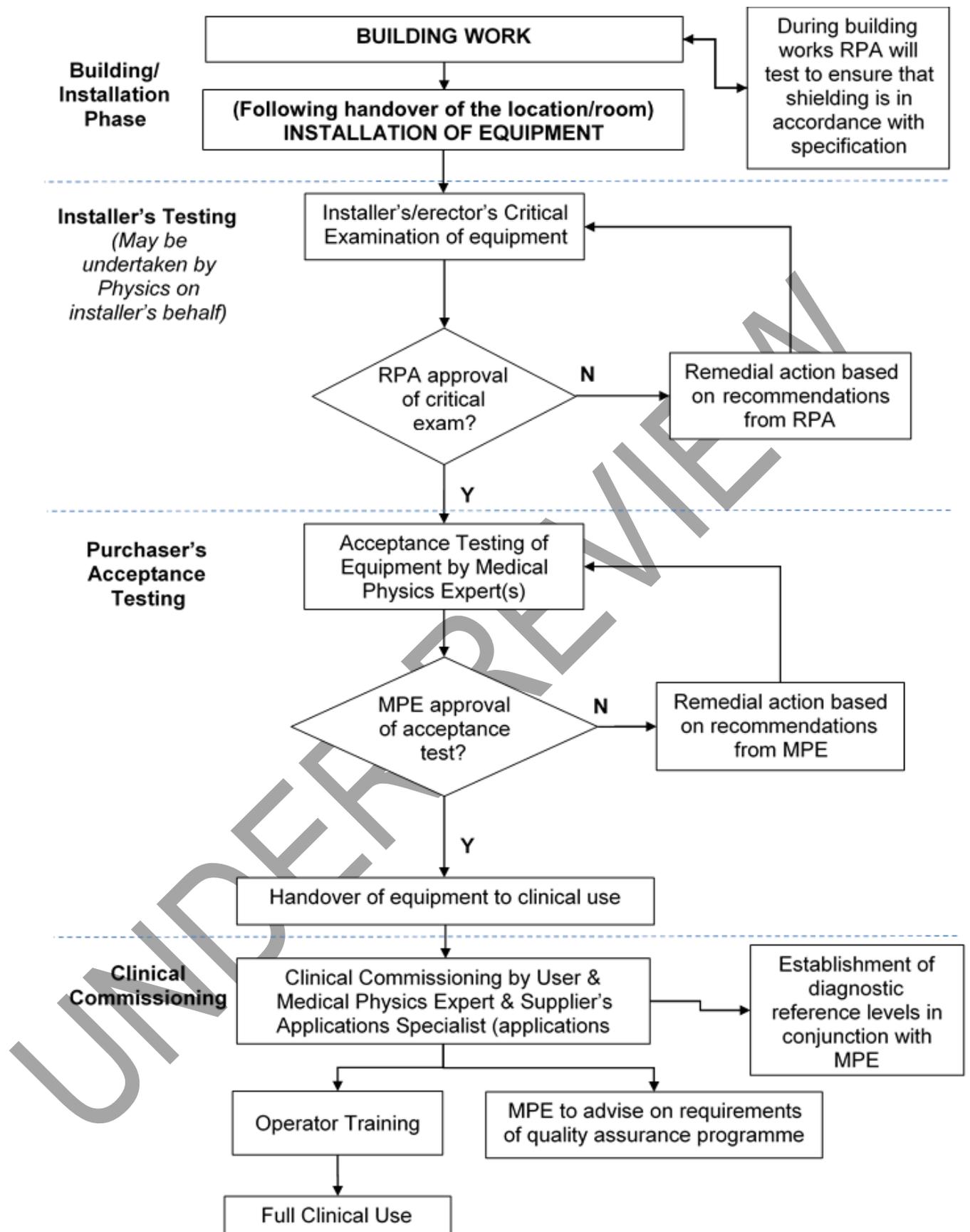
- 2.4. **Employees** must ensure that any new or modified source of radiation which they wish to introduce, or modification to their facility/use of new facilities, has been appropriately identified via the Head of Department and has been subject to the appropriate approvals and acceptance testing.
- 2.5. **Radiation Protection Supervisors** (where appointed for existing facilities) will:
- 2.5.1. Identify to the appropriate manager matters which need to be considered in the risk assessment or require the risk assessment to be reviewed.
 - 2.5.2. Monitor the adequacy of training and standards of competence.
 - 2.5.3. Monitor to ensure that the quality assurance programme is implemented.
- 2.6. The **Radiation Protection Adviser(s)** shall provide specialist radiation protection advice regarding compliance with the regulations, to include but not limited to:
- 2.6.1. The implementation of requirements as to controlled and supervised areas.
 - 2.6.2. The 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 provided to restrict exposure to ionising radiation.
 - 2.6.3. The regular calibration of equipment provided for monitoring levels of ionising radiation and the regular checking that such equipment is serviceable and correctly used.
 - 2.6.4. The periodic examination and testing of engineering controls, design features, safety features and warning devices and regular checking of systems of work provided to restrict exposure to ionising radiation.
- 2.7. The **Medical Physics Expert(s)** shall, in respect of equipment used in connection with medical exposure, advise on radiation protection, patient dosimetry (including the establishment of diagnostic reference levels), quality assurance and optimisation programmes (including acceptance testing) of that equipment.
- 2.8. The **Head of Planning and Projects** will:
- 2.8.1. Ensure that the RPA and MPE are consulted at the facility design stage as subject matter experts to advise on radiation protection and equipment selection.
 - 2.8.2. Ensure that the final plans for new or modified facilities have the approval and sign-off of the RPA prior to commissioning.
- 2.9. The **Head of Procurement and Supplies** will:
- 2.9.1. Ensure that the specifications for new/replacement radiation sources and equipment used in connection with medical exposure are approved by the MPE and RPA prior to the purchase order of new/replacement

radiation equipment.

- 2.9.2. Ensure that tender specifications for new/replacement radiation equipment and equipment used in connection with medical exposure are approved by the MPE and RPA prior to issuing the invitation to tender.

2.10. Process Diagrams





Appendix 4. Management of Radioactive Materials

1. Management Arrangements

- 1.1. Work with radioactive materials shall only be carried out in accordance with RCHT policy and standard operating procedures, which address the requirements of the Environmental Permitting Regulations.
- 1.2. The permit(s) shall be made available to relevant staff via the electronic quality management systems.

2. Authorisation of Practices

- 2.1. Any member of staff seeking to introduce a new practice involving the use of new or existing radioactive materials shall first consult with the RWA/RPA and head of department.
- 2.2. All new practices shall be subject to prior radiation risk assessment.

3. Location of Work With Radioactive Materials

Work with radioactive materials shall only be conducted in the agreed locations; work activities with sources shall not be conducted outside the main hospital site.

4. Source Security

- 4.1. All sources must be kept in their approved locations when not in use.
- 4.2. All sources must be continuously supervised when removed from their approved locations.

5. Organisational Structure and Duty Holders

- 5.1. The organisational structure for the management of radioactive sources and wastes is within the Trust Radiation Safety Policy. Currently all work with radioactive materials is undertaken by the Clinical Support Care Group. Duties are described in the Trust Radiation Safety Policy.

5.2. Workforce Changes

- 5.2.1. When an existing post holder plans to leave the organisation or is otherwise unable to perform their duties (e.g. on a period of extended leave), the respective **Head of Department** shall consult with the RPA/RWA with regard to appropriate arrangements to ensure service continuity.
- 5.2.2. Under the advice of the RWA/RPA, the **Head of Department** shall ensure all staff are given appropriate training and continuing professional development advice in order to perform their duties

6. Organisational Change

The Trust will inform the EA of changes to its name, cessation of the use of radioactive materials on the premises.

7. Requests From the Environment Agency

7.1. The EA may request a sample of any radioactive waste. The Trust will:

- 7.1.1. Take and analyse such samples of waste and conduct such other tests and surveys as the Agency may require.
- 7.1.2. Make and keep a record of each such analysis, test, or survey; and,
- 7.1.3. Retain such samples as may be directed by the Agency.

7.2. If required, the Trust will:

- 7.2.1. Provide samples as directed.
- 7.2.2. Dispatch samples for tests at a laboratory and ensure that the samples and residues thereof are collected from the laboratory within three months of receiving written notification that testing and repackaging in accordance with the appropriate transport regulations are complete.

7.3. The EA may request other information, e.g. inventories of solid sources, open sources, waste pertaining to various dates in time. The Trust will supply all such information as may reasonably be required without charge.

8. National Arrangements for Incidents Involving Radioactivity

8.1. The site participates in the NAIR scheme as a level 1 responder. As any major event would require the attendance of a level 2 responder, it is not anticipated significant quantities of material will be brought back to site.

8.2. Notwithstanding, if material is brought back to site the following shall apply:

- 8.2.1. Without delay the Environment Agency shall be informed.
- 8.2.2. As soon as practicable provide available details in writing to the EA of the nature of the accumulated waste, the radionuclides present and their activities.
- 8.2.3. Any transfer of the waste shall be to a person whom the EA has agreed in writing may receive that waste; and,
- 8.2.4. As soon as practicable provides available details in writing of the nature of the radioactive waste, the radionuclides present, their activities and the manner and date of disposal.

9. Disposal of Radioactive Sources/Waste

All disposals of radioactive sources/waste shall be in accordance with a written procedure agreed by the RWA/RPA.

Appendix 5. Transport of Radioactive Materials

1. Authorisation

- 1.1. Transport of radioactive materials shall only be carried out by authorised departments, to ensure compliance with the Carriage of Dangerous Goods Regulations.
- 1.2. Any member of staff seeking to introduce a new transport activity shall first consult with the RWA/RPA and head of department for authorisation.
- 1.3. All new practices shall be subject to prior radiation risk assessment. The risk assessment shall indicate other measures which must be put in place before the activity commences, e.g.:
 - Appropriate transport containers.
 - Packaging/consignor/transport/receipt etc. Procedures.
 - Consignment notes.
 - Contingency plans.
 - Emergency equipment.
 - Audit procedures.
 - Staff training.
- 1.4. Transport shall only be undertaken as set out in the risk assessment, i.e. of the agreed sources between the agreed locations using the agreed equipment, vehicles, and personnel.
- 1.5. For any changes in practice (including changes to procedures and work instructions), the head of department and RWA/RPA must be consulted for approval.

2. Oversight of Transport Activities

- 2.1. The organisational structure for the management of radioactive sources and wastes is within the Trust Radiation Safety Policy Section 5.
- 2.2. The respective **Service Manager/Head of Department** shall ensure that:
 - 2.2.1. Systems and procedures are in place for the safe and legislatively compliant transport of radioactive materials as required by the work routinely carried out.
 - 2.2.2. The RPA (and MPE where applicable) is fully aware of all situations in which sources of ionising radiation are transported on public roads (within the scope of the departmental work) and advice is sought from these, and other specialist advisers on safety and compliance.

- 2.2.3. A suitable risk assessment (Prior Radiation Risk Assessment) is performed when introducing new or modified activities involving the transport of ionising radiation.
- 2.2.4. Suitable procedures and record keeping is in place for transport activities, as advised by the RPA / RWA / other advisers.
- 2.2.5. Any consignors, drivers or consignees of radioactive packages receive suitable training, commensurate with their role records or training are maintained.
- 2.2.6. Records are maintained to demonstrate compliance with transport regulations (e.g. training records, consignment paperwork, transport audits etc.).
- 2.2.7. Any vehicle used for transport of radioactive materials is subject to regular maintenance and checks and is suitably equipped.
- 2.2.8. Compliance with relevant Trust procedures and SOPs.
- 2.2.9. Regular (e.g. annual) audit of transport procedures.
- 2.3. The **Estates Service** shall be responsible for ensuring that the Trust appoints a suitable DGSA to advise on transport of radioactive materials and that periodic DGSA audits/reports are undertaken.
- 2.4. The **RPA** report to RPC shall include information pertaining to transport activities.

3. Workforce Changes

- 3.1. When an existing post holder plans to leave the organisation or is otherwise unable to perform their duties (e.g. on a period of extended leave), the respective **Head of Department** shall consult with the RPA/RWA with regard to appropriate arrangements to ensure service continuity.
- 3.2. Under the advice of the RWA/RPA, the **Head of Department** shall ensure all staff are given appropriate training and continuing professional development advice in order to perform their duties.

4. Monitoring of Staff and Vehicles

- 4.1. Personal monitoring of staff shall be carried out where indicated by risk assessment.
- 4.2. As an alternative, where indicated, environmental monitoring of vehicles may be carried out in order to demonstrate that doses are acceptably low as to not require personal monitoring.
- 4.3. Such monitoring will be scheduled and recorded on the personal monitoring/environmental monitoring database held by Clinical and Radiation Physics.

5. Audit

Services undertaking transport activities shall undertake periodic audit of their activities. This shall include:

- Identification of package type.
- Determination of Transport Index.
- Package category labelling.
- Package UN marking.
- Quality assurance of packaging.
- Vehicle preparation and safety equipment.
- Driver training and preparation (e.g. completion of training, correct ID etc).
- Shipment paperwork / recording.
- Vehicle contamination check.

6. National Arrangements for Incidents Involving Radioactivity

The site participates in the NAIR scheme as a level 1 responder. As any major event would require the attendance of a level 2 responder, it is not anticipated significant quantities of material will be brought back to site. Notwithstanding, if material is to be brought back to site it must be transported in accordance with regulatory requirements.