York and Scarborough Teaching Hospitals
NHS Foundation Trust

**Tender Specification – Radiation Protection and Medical Physics Service**

Radiation Protection Services (incorporating the use of ionising & non ionising radiation) are required for York and Scarborough Teaching Hospitals NHS Foundation Trust across the Trusts acute hospital and community services, for a wide variety of diagnostic and therapeutic equipment from both ionising and non-ionising radiation sources.

These services cover diagnostic x-ray equipment, ultrasound equipment, nuclear medicine equipment, laser equipment, ultraviolet equipment, magnetic resonance imaging, infrared equipment & electromagnetic fields.

1. **Integral to the service will be:**

The provision of a Radiation Protection Adviser in relation to Ionising Radiation Regulations 2017[1] and the Medical Physics Expert in relation to Ionising Radiation (Medical Exposure) Regulations 2017. The latter specifically to cover radiation physics, radiation protection, diagnostic radiology & nuclear medicine across all aspects of the Trust diagnostic and treatment activities.

The provision of Radiation Protection Advisor in relation to Non-Ionising Radiation as required The Control of Artificial Optical Radiation at Work Regulations 2010, The Control of Electromagnetic Fields at Work Regulations 2016, the Health and Safety at Work etc Act 1974 and the Management of Health and Safety at Work Regulation 1999.

The Provision of a Dangerous Goods Safety Advisory Services for Class 7 radioactive materials and access as required to a Radiation Waste Advisor, to advise the Trust on radioactive waste management as required by the Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 and the Environmental Permitting (England and Wales) Regulations 2016 and specific regulations and guidance.

[1] IRR 17Regulation 14, schedule 4, HSE statement radiation protection advisors. https://www.hse.gov.uk/radiation/rpnews/statementrpa.htm

Please note that the equipment schedule in Annex is subject to change and the Service Provider is required to carry out non-routine visits commensurate with standards and legislation that are applicable to this contract.

**Standards and legislation that are applicable to this contract.**

- Ionising Radiation Regulations (IRR 17)
- Ionising Radiation (Medical Exposure) Regulations 2017 (IRMER 2017)
- Environmental Permitting Regulations 2016 (EPR 2016)
- Medicine (Administration of Radioactive Substances) Regulations 1998 (MARS)
- Carriage of Dangerous Goods & Use of Transportable Pressure Equipment Regulations 2009
- The Health and Safety at Work etc Act 1974
- Management of Health & Safety at Work Regulations 1999 (MHSWR)
- Provision & Use of Work Equipment Regulations 1998 (PUWER)
- Personal Protective Equipment Regulations 2022 (PPER)
- NHS Breast Screening Programme (NHSBSP 7020)
- NHS Breast Screening Programme (NHSBSP Publication 33)

## 2. Service Provision

The Service Provider MUST:

- make planned quality assurance visits and carry out measurements on the equipment specified in the Schedule of Equipment and associated Schedule of Works [1]. The Trust will arrange for equipment/rooms to be available for testing on the dates as agreed with the Service Provider.
- make additional quality assurance visits to equipment specified in the Schedule of Equipment following any equipment repairs or modifications which may affect radiation output in accordance with the Schedule of Works[1], or for the acceptance of testing additional equipment as advised by the Trust.
- provide nuclear medicine scientific / medical physics expert support in accordance with the Schedule of Works.
- make planned visits to carry out non-Ionising radiation protection audits of laser equipment specified in Schedule of Equipment in accordance with the Schedule of Works[1].
- make planned visits to carry out output checks on Ultraviolet Therapy Machines as specified in the Schedule of Equipment in accordance with the Schedule of Works[1].
- provide Ionising Radiation Protection Services as specified in the Schedule of Works[1].

- provide non-Ionising Radiation Protection Services as specified in the Schedule of Works[1].
- all work activities are to be carried out at mutually convenient times agreed between the Service Provider and the Trust and where possible, between the hours of 09:00am to 17:00pm weekdays, excluding Public Holidays.
- supply support for this service during normal working hours, Monday-Friday 09:00am to 17:00pm.
- provide support to review new ionising and non-ionising equipment as part of the monthly medical equipment resource group (MERG).
- supply arrangements for out of hours advice (e.g., if radioisotope delivery arrives damaged, patient attends ED following treatment, tube breakdown on long weekend) or work to provide contingency arrangements.
- provide the services of a Magnetic Resonance Safety Advisor to the Trust.
- be able to work collaboratively with original equipment manufacturers and/or independent imaging support companies (third party providers) to provide joint service contracts to support periodic quality assurance testing.
- As required at the point of contract renewal provide a de-mobilisation plan detailing handover and working arrangements with the new service provider.

## 3. Obligations of the Service Provider

Where appropriate the Service Provider SHOULD send the Trust:

- Electronic reports of the results of equipment surveys
- Provide an annual audit of doses for diagnostic reference
- Email confirmation of any advice given
- Annual report of the work carried out for the Trust by the provider, to include as a minimum contract performance, diagnostic reference level, critical staff changes, compliance assurance statement for each modality
- Any additional legislation or good practice recommendations should be notified to the Trust for discussion. As a result of these discussions, any amendments may be made to the contract if mutually agreed.
- Annual QA report for all Trust equipment as Annex B9
- Reports of annual quality assurance surveys are expected to be sent within one month of completion of the work to the relevant Departmental Manager.

**Training**

Provision of training at a mutually agreed convenient location with agreed numbers of attendees on the following basis:

- 2 sessions per annum for Trust staff working with ionising radiation
- 1 session per annum for existing Radiation Protection Supervisors
- 2 sessions per annum for Trust staff working with non-Ionising radiation – LPSs
- 1 LPS course on MHRA core of knowledge standard per annum
- 1 MRI course per annum.

## 4. Diagnostic X-Ray Equipment

Quality assurance surveys to be carried out on the X-Ray equipment listed in the Schedule of Equipment at the frequency indicated in the schedule. Surveys to include the relevant level B tests described in IPEM 89a and 91b.

Acceptance testing, plus or minus critical exam on new X-Ray equipment installations and performance assessment studies on modifications to existing equipment to be carried out as required.

Assistance with the assessment of equipment suitability and equipment replacement programmes including room & facility design. This will vary from year to year depending on replacement programme.

An Institute of Physics & Engineering in Medicine Report 89 – The Commissioning and Routine Testing of Mammographic Ray Systems or to current or future standards.

B Institute of Physics & Engineering in Medicine Report 91 – Recommended Standards for the Routine Performance Testing of Diagnostic X-Ray Imaging Systems or to current or future standards.

## 5. Ultrasound Equipment

Quality assurance measurements on the Ultrasound equipment listed in Schedule of Equipment at the frequency indicated in the schedule. Testing to include the relevant B test described in IPEM 71c using an appropriate multipurpose test tool (H).

Institute of Physics & Engineering in Medicine Report 102 – Routine Quality Assurance of Ultrasound Imaging Systems or to current or future standards.

## 6. Nuclear Medicine Scientific Support

Scientific support to nuclear medicine and Radio pharmacy to assist with compliance with the Ionising Radiations Regulations 2017 including:

- Quality assurance measurements on the gamma camera

- Assistance with complex imaging investigations
- Assistance in the use of the nuclear medicine imagine computer
- Annual calibration of Radionuclide Assay Calibrators
- Annual calibration of radiation contamination monitors in accordance with the relevant NPL Good Practice Guide
- Annual wipe tests on sealed sources held by Radio Pharmacy and Theatres and issue of leakage test certificate will be required
- Annual assessment of SLNB detector probes held by Theatres to check function and response. Provision of response data will be required.

Provision of Medical Physics Expertise in Nuclear Medicine under the terms of the Ionising Radiation (Medical Exposure) Regulations 2017.

Regular and timely engagement in design of protocols, legislative compliance procedures and dose reporting, e.g., it would be expected to have medical physics input into protocols returned within approximately 4 weeks of document provision. On site support for nuclear medicine to provide a routine fortnightly Iodine-131 service offering thyrotoxicosis treatment and QA tasks requiring an on-site physicist as needed.

## 7. Ultraviolet Equipment

Measurement of equipment outputs for the ultraviolet equipment listed in Schedule of Equipment at the frequency indicated in the schedule, reports to be provided.

Assessment of protective equipment and documentation.

Ionising Radiation Protection Services.

Provision of advice to Trust Management on compliance with the various regulations and standards covering the use of ionising radiation. This includes:

- Fulfilling the statutory roles of Radiation Protection Adviser [Reg. 14 Ionising Radiation Regulations 2017] and Medical Physics Expert [Reg. 14 Ionising Radiation (Medical Exposure) Regulations 2017].
- Liaison with relevant inspecting authorities and aid when undergoing inspections by external agencies such as HSE and Care Quality Commission to ensure compliance with IRR17and IRMER 2017
- Advice on radiation protection for staff, patients, patients' relatives, and the general public
- Advice and assistance with radiation policies, risk assessments, procedures, local rules, contingency plans, and other relevant documentation

- Assistance with the planning of radiation facilities including shielding requirements and the selection of new radiological equipment

- Advice and assistance in the investigation of patient, staff and equipment related radiation incidents and reports to external bodies such as the Care Quality Commission

- Collation of patient dose surveys and advice on diagnostic reference levels

- Attendance at all the Trust quarterly radiation safety meetings.

## 8. Carriage of Dangerous Goods

Advise and support service for the Dangerous Goods Safety Advisory Services for Class 7 radioactive materials as defined in the Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009.

## 9. Non-Ionising Radiation Protection Services

Provision of advice to Trust Management on compliance with the various regulations and standards covering the use of MRI, laser, ultraviolet, infrared sources of non-Ionising radiation and Electro Magnetic Fields. This includes:

- Fulfilling the role of non-Ionising Radiation Protection Adviser

- Advice and assistance on policies, risk assessments, procedures, local rules, and other relevant documentation

- Advice on MRI laser and ultraviolet protection for staff and patients

- Liaison with relevant inspecting authorities and provide assistance when undergoing inspections by external agencies such as HSE and Care Quality Commission

- Advice and assistance in the investigation & reporting of incidents

- Advice on the planning of facilities and the selection of new equipment

- One on-site visit per year to audit protection arrangements

- Assistance with assessment of ultrasound equipment suitability

- Attendance at all the Trust quarterly radiation safety meetings.

## 10. Contingency

To support the Trust for ad hoc woks involving ionising and non-ionising radiation at an agreed price within agreed scopes or work and timescales for delivery.

**11. Key Performance Indicators (KPI's)**

| Key Performance Indicator | Measurement | Remedial period | Remedial Measure |
|---|---|---|---|
| Service support during normal working hours, Monday-Friday 09:00am to 17:00pm.<br>Response in one (1) hour | Timescales to be monitored | One (1) working day for any identified failed response | If not rectified in remedial time scale, a letter of non-conformance will be issued, review with service provider lead contact.<br>If not resolved within five (5) working days alternative service provider can be sought at the cost of current service provider. |
| Response to incident and risk reports ten (10) working days of the incident | Timescales to be monitored | Two (2) working day for any identified failed response | If not rectified in remedial time scale, a letter of non-conformance will be issued, review with service provider lead contact.<br>If not resolved within ten (10) working days alternative service provider can be sought at the cost of current service provider. |
| Document review approval, comments and amends fifteen (15) working days | Receipt of documents and or written approval | Five (5) working days for receipt of document or written approval | If not rectified in remedial time scale, a letter of non-conformance will be issued, review with service provider lead contact.<br>If not resolved within fifteen (15) working days alternative service provider can be sought at the cost |

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|---|---|---|---|
| | | | of current service provider. |
| Non-urgent request response to originator in five (5) working days | Timescales to be monitored | One (1) working day for any identified failed response | If not rectified in remedial time scale, a letter of non-conformance will be issued, review with service provider lead contact.<br>If not resolved within five (5) working days alternative service provider can be sought at the cost of current service provider. |