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NHS Greater Glasgow and Clyde Job Description

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| 1. **JOB IDENTIFICATION**

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| Job Title: | Consultant Clinical Scientist, Head of Service – Health Physics |
| Responsible To: | Scientific DirectorDepartment of Clinical Physics and Bioengineering (DCPB) |
| Department(s): | Health PhysicsDepartment of Clinical Physics and Bioengineering (DCPB)Gartnavel Royal Hospital |
| Directorate: | Diagnostics |
| Operating Division: | Acute |
| Job Reference: |  |
| No of Job Holders: | 1 |
| Last Update (insert date): | Version 2, April 2025 |

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| 1. **JOB PURPOSE**

The postholder directs, manages and contributes to the Health Physics service that provides clinical scientific and technical support and training in radiation protection and diagnostic radiology physics to ensure the radiation safety of staff, patients and members of the public. The postholder fulfils statutory roles providing expert advice to hospital senior management and leads clinical scientific services relating to radiation safety and the audit and optimisation of practices to ensure compliance with radiation safety legislation. ROLE OF DEPARTMENTThe Department of Clinical Physics and Bioengineering (DCPB) provides specialist medical physics and clinical engineering services to NHS Greater Glasgow & Clyde (NHS GGC) and other Health Boards. These include Medical Equipment Management, Clinical Engineering, Core Services (incorporating **Health Physics**, MRI Physics, the Radionuclide Dispensary and PET-Radiopharmaceutical Production Unit), Radiotherapy Physics and Nuclear Medicine. It is one of the largest medical physics and clinical engineering departments in the UK, comprising over 350 staff.Health Physics provides a Regional Service comprising advice and a range of highly specialised scientific and technical support services to healthcare establishments utilising radiation in their clinical and other services. The establishments include all NHS hospitals and health centres within the eight Health Boards in the West and Borders of Scotland, hospitals run by the Scottish Government, and private organisations for which services are provided on a contractual basis (private dental and veterinary practices). The services include provision of comprehensive advice from qualified radiation experts, scientific and technical services, and reviews of all aspects of radiation protection. The purpose is to enable employers and staff to comply with all relevant radiation legislation and guidance (\*) and to ensure the safety of all patients, staff and members of the public who may be exposed to, or come into contact with, any radiation source. The Health Physics service maintains a continuing programme of research into the development of techniques relevant to the service.\* Some examples of relevant legislation and a key to abbreviations used elsewhere in this document are: Ionising Radiations Regulations 2017 (IRR17), Ionising Radiation (Medical Exposure) Regulations 2017 (IRMER17), Environmental Authorisation (Scotland) Regulations 2018 (EASR18), Radiation (Emergency Preparedness and Public Information) Regulations 2019 (REPPIR19), Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 & ADR19, Control of Artificial Optical Radiation (at Work) Regulations 2011 (AOR11), Health and Safety at Work etc. Act 1974, Management of Health and Safety at Work Regulations 1999.**Scope of service**Health Physics comprises 18.5 whole time equivalent staff, 12.5 clinical scientists (medical physicists), 5 clinical technologists and one departmental secretary. Six consultant grade physicists are registered Radiation Protection Advisers (RPAs), three are Laser Protection Advisers (LPAs), one is a Radioactive Waste Adviser (RWA) and eight physicists are Medical Physics Experts (MPEs) in diagnostic & interventional radiology, as required by radiation safety legislation.The sites served include 12major teaching hospitals, 15 District General Hospitals, 49 smaller hospitals / Health Centres with medical X-ray departments and over 250 dental clinics across 8 Health Boards. There are also 50 departments using radioactive materials, with a large radiotherapy department housing 11 linear accelerators, 2 HDR brachytherapy units and 8 source treatment rooms, a satellite radiotherapy department (housing 2 linear accelerators) a Radionuclide Dispensary, PET Radiopharmaceutical Production Unit (Cyclotron) & PET Centre, 13 Nuclear Medicine Departments and 36 Radionuclide Laboratory Departments.There are over 900 X-ray units, including over 50 highly complex CT scanners, over 120 fluoroscopy units of varying complexity and approximately 10 dual-energy absorptiometry (DXA) units. Acceptance tests and critical examinations of safety features are carried out on all X-ray equipment before utilisation by clinical service (60-100 units per year), and routine tests on imaging and dose performance are carried out on 600 X-ray units each year (N.B. legislation requires that routine tests on most types of unit are performed annually). The tests range in length from 1 h to 2 days depending on the complexity of the equipment. Approximately 170 radiation measurement instruments of various types are calibrated each year (a legislative requirement).There are 108 surgical lasers, which are inspected every 2 years, and 88 phototherapy units that are calibrated 4-monthly to 2-yearly, and for which patient treatment plans are produced.Other services provided by Health Physics include X-ray patient dose surveys for a range of X-ray procedures, investigations into radiation incidents, of which there are about 480 each year, development of radiation safety documentation, specification of radiation protection requirements for new facilities, formulation of specifications for purchase of complex X-ray equipment, and preparation of applications for licences to hold and dispose of radioactive materials. Health Physics is responsible for the oversight of arrangements for personal radiation dosimetry, including the enhanced arrangements for classified persons.The Health Physics service maintains multiple complex databases storing records for various applications, including radiation equipment, calibration results, dosimetry records for classified persons and radioactive waste disposal records for transmission to SEPA. |

**4. ORGANISATIONAL POSITION**

Scientific Director, DCPB

Consultant Clinical Scientist

**Head of Health Physics**

**Consultant Clinical Scientist**

**This Post**

Technical Manager

Principal Clinical Technologist

5 x Consultant Clinical Scientists (RPA/MPE/LPA/RWA)

1.5 x Principal Clinical Scientists (MPE)

4 x Senior Practitioner Clinical Scientist

Pre-registration Clinical Scientists (trainees)

5 x Specialist Clinical Technologists

Departmental

Secretary

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| 1. **SCOPE AND RANGE**

The postholder:* directs and manages the provision of highly specialist clinical scientific and technical services bythe Health Physics service
* determines the level and standard of service provision required to meet legislative requirements, formulates arrangements to provide this service, and co-ordinates service provision.
* directs services involving testing of all radiation equipment, which have a direct impact on patient care, and verifies reports for a proportion of these tests.
* is responsible for providing oversight of the Board arrangements for personal radiation dosimetry, including enhanced arrangements for classified persons.
* performs various statutory roles, including Radiation Protection Adviser and Qualified Person with respect to instrument calibration (IRR17), Radioactive Waste Adviser in relation to radioactive waste (EASR18), Medical Physics Expert in Diagnostic & Interventional Radiology (IRMER 2017) and Laser Protection Adviser.
* reviews radiation safety management, practices and facilities in hospital departments several times per month, and provides advice on radiation safety matters 40-80 times per week.
* co-ordinates the provision of training in radiation safety for staff with radiation protection responsibilities working within the NHS in the West of Scotland and Borders.
* plans and directs a programme of research and development into new techniques in radiation protection, diagnostic radiology physics and non-ionising radiations.
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| 1. **MAIN DUTIES/RESPONSIBILITIES**

**Managerial Duties (20%)**1. Plan and direct the delivery of regional Health Physics services to the hospitals and health care establishments outlined in Section 3, to meet legislative requirements.
2. Formulate long term plans for the Health Physics service to meet future needs relating to legislative requirements, technological advances and clinical service development.
3. Develop policies establishing the level and standard of Health Physics service provision to ensure the safety of staff and patients and comply with radiation legislation (see section 3).
4. Direct and manage regional clinical scientific and technical services provided by Health Physics to diagnostic radiology and other clinical departments, for both ionising and non-ionising radiation equipment.
5. Responsible for procurement and maintenance of radiation test instruments, and other physical assets of the Health Physics service, and purchase of supplies, as delegated budget holder. This includes responsibility for selecting suppliers and authorising purchases, taking account of cost and reliability.
6. Responsible for the provision of recommendations on purchase of personal dosimeters for radiation workers throughout NHS Greater Glasgow and Clyde, including selection of supplier.
7. Maintain radiation test instruments and sources used as calibration standards and make arrangements for calibrations traceable to UK National Standards to be performed, in order to provide calibration services for ionising and non-ionising radiation instruments.
8. Direct and manage staff within the Health Physics service, including counselling in relation to disciplinary and grievance matters, making recruitment and selection decisions and advising on career development. Responsible for work allocation and motivation of staff to achieve service objectives.
9. As line manager, appraise and direct professional development of scientific staff in the Health Physics service. Responsible for safe use of highly complex equipment by staff of Health Physics service.
10. Direct the development of database information systems to process data on radiation equipment calibration and performance within the region. Responsible for the management of existing database systems, which store information, calculate calibration results and generate reports.
11. Responsible for overseeing the development of quality management procedures and protocols to ensure consistent provision of all aspects of the Health Physics service.
12. Participate in the Senior Management Team for DCPB Core Services.

**Strategic Policy Development/Implementation and Advice (20%)**1. Interpret ionising radiation and radioactive substances legislation, standards and guidance, and advise Health Board managers and staff on policies to meet these legal requirements and provide expert scientific and specialist technical advice to facilitate compliance.
2. Determine and implement policies relating to introduction of new services to meet new clinical needs.
3. Interpret radiation legislation and as lead RPA provide advice and assistance to facilitate structured arrangements for radiation safety management for a selection of Health Board areas, and private healthcare organisations with which Health Physics has contracts, determined by Health Physics organisational arrangements. Collaborate with management and staff in producing radiation safety documentation.
4. Interpret policies for dealing with radiation emergencies, plan and contribute to the development of strategies and goals to meet the requirements, and contribute to arrangements for service provision.
5. Participate in National / International Committees for the development of standards, methodologies, and training programmes relating to aspects of the Health Physics service. Represent NHS Scotland on UK Government Working Parties and Committees to determine policy for aspects of radiation use.
6. Contribute to NHSGGC preparations for Radiation Monitoring Units, playing a leading role in standing up an RMU as required.
7. Advise on and contribute to the management of radiation assets in the National Medical Equipment Management System (NMEMS).
8. Responsible for ensuring Health Physics provides an ongoing contribution to the NHSGGC strategy for the electrical safety testing of radiological installations.
9. Responsible for developing Health Physics arrangements for providing clinical scientific input to projects in diagnostic imaging involving the use of artificial intelligence (AI).
10. Responsible for ensuring NHSGGC has well developed and regularly tested contingency and emergency plans for the transport of radioactive materials by road.

**Scientific Consultant Duties (25%)**1. Perform statutory roles relating to radiation safety, including Radiation Protection Adviser (IRR17), Radioactive Waste Adviser in relation to radioactive waste (EASR18), Medical Physics Expert for diagnostic & interventional radiology (IRMER17) and Laser Protection Adviser.
2. Co-ordinate and direct critical examinations of safety features and acceptance tests, confirming delivery to schedule, verifying equipment performance for new diagnostic X-ray equipment and installations (IRR17), and give approval for equipment to be put into clinical use for patient diagnosis.
3. Interpret results from performance tests on X-ray equipment, surveys of radiology patient doses, verify results in reports, and recommend optimisation strategies for equipment used in patient diagnosis.
4. Verify ultraviolet phototherapy measurements and provide highly specialist patient dose treatment charts which are used directly for prescription of patient phototherapy treatment.
5. Provide scientific and technical advice on the calibration of highly specialist ionising and non-ionising radiation measuring instruments used for evaluation of patient diagnosis and therapy equipment, and design and develop new instrument calibration methodologies as required.
6. Design, specify and approve the radiation protection requirements for radio-diagnostic, radionuclide and radiotherapy facilities (IRR17), and laser and ultraviolet facilities (AOR2011).
7. Plan and carry out a programme of inspections, audits and reviews of radiation protection arrangements for approximately 20 departments each year and provide reports and advice based on these (IRR17)
8. Assess dose for and investigate a proportion of the approximately 500 radiation incidents received each year and produce reports for onward transmission to regulatory authorities (HIS, HSE, SEPA) as required.
9. Provide expert advice and Medical Physics Expert services to the NHS Greater Glasgow and Clyde Clinical Research Imaging Facility, working in collaboration with the University of Glasgow.
10. Provide expert advice to NHS staff on dealing with radiation incidents or any matters involving radiation exposure (first on callout list of staff held by hospital switchboard for 24 h callout).
11. Provide expert advice and assistance to the Police under the NAIR Scheme (National Arrangements for Incidents involving Radioactivity) to deal with radiation emergencies (first on list of staff for 24 h callout).
12. Provide expert advice and assistance for any major emergency involving radiation in the West of Scotland and beyond. Duties could include directing staff involved in casualty decontamination in A&E Department or managing monitoring and decontamination of the public at mass screening centres (e.g. RMUs).
13. Represent Health Physics at the DCPB Clinical Governance meeting.
14. Participate in the NHSGGC Radiation Safety Committee and NHSGGC Health and Safety Forum.
15. Attend other relevant Radiation Safety Committee meetings across NHSGGC and Health Boards to which Health Physics provides a service.

**Education and Training (15%)**1. Responsible for provision of radiation safety training within 8 Health Boards.
2. Oversee the organisation of courses on radiation physics and safety for radiologists, radiation protection supervisors, radionuclide users, laser protection supervisors, laser theatre staff, phototherapy staff and trainees in medical physics, and contribute to these courses (approximately 2 University courses of 50 lectures/ practicals, 3 full day and 3 half day staff courses per year) and ensure certificates of attendance are issued.
3. Give lectures and contribute to radiation safety and other training courses to dentists, clinical staff, medical physicists, nurses and other NHS staff (20-50 lectures per year).
4. Examine and appraise understanding of students and trainees on courses by means of examinations.
5. Train and supervise physicists, technologists and other staff who join or are attached to the section.
6. Responsible for ensuring Health Physics arrangements are in place for accommodating trainees on the Scottish Medical Physics and Clinical Engineering Training Scheme (SMPCETS) and clinical technologist training schemes.
7. The postholder will build on their knowledge through private study, and attendance at relevant courses and scientific meetings.
8. Maintain records of professional activities for Continuing Professional Development, sufficient to fulfil requirements to maintain registration with the Health and Care Professions Council (HCPC) as a Clinical Scientist, and to qualify for recertification as a Radiation Protection Adviser, Radioactive Waste Adviser and Medical Physics Expert.

**Research and Development (20%)**1. Initiate research and development programmes which support the Health Physics service across the region and obtain funding for research proposals when appropriate.
2. Co-ordinate the Health Physics research and development programme, and ensure findings are implemented and reported to the scientific community. Findings may influence practices in the NHS throughout the UK.
3. Initiate and direct research projects to be undertaken by staff and trainees within Health Physics.
4. Direct and participate in development of new test methods and test tools to evaluate the higher levels of performance of new medical x-ray equipment.
5. Direct the development of optical radiation dosimetry for new phototherapy techniques, when required.
6. Train and supervise staff/students undertaking research to fulfil requirements of PhD and other research degrees within Health Physics.
7. Present results of research projects at scientific conferences and supervise the same for other staff.
8. Responsible for Health Physics providing radiation dose assessments as part of the development and implementation of clinical trials.
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| **7. SYSTEMS and EQUIPMENT****1. Instruments used for measuring ionising and non-ionising radiation** * A variety of instruments for measurement of radioactive contamination, dose rate and doses to staff and patients, and for calibration with radioactive sources.
* A variety of instruments for measurement of X-ray equipment performance including kV, dose, dose rate and image quality used in critical radiation safety examinations, acceptance tests and routine surveys.
* Optical radiation radiometers and spectro-radiometers and laser power meters.

**2. Equipment whose radiation output is measured as part of routine performance tests and during acceptance before units are put into clinical use** * An extensive range of X-ray equipment, including interventional fluoroscopic units, for which training and competence has been verified or with assistance from other competent staff.
* A range of equipment emitting optical radiations, including UVA and UVB phototherapy cabins, surgical and therapy lasers and photodynamic therapy lamps.
* The postholder is required to operate equipment competently and safely during incident investigations, the development of test protocols and other investigations.

**3. Computers, commercial software and database systems used in Health Physics**There is a regular requirement to create spreadsheets for scientific analytical tasks. The postholder creates some spreadsheets for single analytical tasks, and sets up initial versions of other software, which are then developed by others to provide user friendly data analysis resources for Health Physics.**Computers**PCs and laptops are used for data analysis; producing reports, documents and drawings; database data entry and retrieval; and email communication on a daily basis for extended periods.**Commercial Software** General purpose and specialised commercial software packages [Microsoft Office (Word, Excel, Access, PowerPoint)] are used for producing reports, data analysis, data storage, preparation of talks and lectures. Paradox and Delphi database systems are used for data storage and reporting for survey measurements, equipment calibration, radioactive waste disposal records and producing patient treatment plans. The National Medical Equipment Management System (NMEMS).**Clinical Systems**Various clinical systems used for displaying, processing and interpreting patient images, including those involving Artificial Intelligance (AI).  |
| **8. DECISIONS AND JUDGEMENTS**The postholder has the freedom to act and make independent judgements in a wide range of situations. Judgements often require analysis, interpretation and comparison of a range of options, involving highly complex technical and scientific information. They often also take account of social and economic factors, and knowledge of legislation. As the lead expert in general radiation safety in the NHS for the West of Scotland, the postholder is required to advise NHS management on the interpretation of all types of radiation legislation and guidance. Judgements are often made about situations with unique characteristics.Some of the judgements made are set out below.1. Determine the way in which radiation legislation and guidance should be interpreted to ensure compliance for NHS organisations, recommend policies to fulfil requirements, and transmit these to NHS management.
2. Determine allocation of staff duties, staffing levels, and staff training requirements for the Health Physics service in order to maintain an appropriate level of service provision, based on current legislation, professional guidance and scientific knowledge.
3. Contribute to design and planning decisions, and determine the protection requirements for 10-15 new radiation facilities each year to ensure safety of staff and patients.
4. Evaluate risks, judge whether practices in hospital departments relating to radiation use and safety are acceptable and make recommendations on optimisation as appropriate (4-5 times per week).
5. Contribute to judgements on technological and safety aspects of X-ray equipment during specification and procurement (about 10-15 times per year).
6. Analyse new radiation equipment performance and evaluate whether equipment fulfils performance criteria and safety standards and can be put into clinical use (10-15 times per year).
7. Analyse and interpret results from tests of highly complex equipment carried out by staff before written reports are verified for circulation. Reports include measurements of equipment performance, instrument calibrations and surveys of patient doses. Determine reasons for any potentially erroneous results, judge the significance of findings, and make recommendations, which may include equipment optimisation, replacement or suspension (10 times per year).
8. As Laser Protection Adviser determine the appropriate level of safety measures in new laser facilities to ensure safety of staff and patients, and assess whether standard of operation of existing laser facilities continues to fulfil safety requirements (1-2 times per month).
9. Determine approach to ultraviolet (UV) dosimetry in Dermatology Departments throughout the region. Verify accuracy of UV dosimetry measurements and patient treatment charts (2-3 times per month).
10. Evaluate risks and recommend appropriate actions to deal with an extensive range of enquiries involving radiation exposure, on matters such as radiation protection management, radiation incidents, radiation research proposals, and radioactive waste disposal many times each day.
11. Specify methods for performing measurements on new types of radiation equipment, to be set out in protocols, several times per year.
12. Study and evaluate draft radiation legislation, standards and guidance circulated by regulatory bodies for consultation on behalf of management, several times per year.
13. Investigate radiation incidents, determine causes, and recommend action required to address shortcomings (10 per month).
14. As the lead Medical Physics Expert for diagnostic imaging, be prepared to intervene as appropriate to ensure the implementation of advice provided.
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| 1. **COMMUNICATIONS AND RELATIONSHIPS**

Required to provide technical and scientific advice of a highly complex nature to an extensive range of professional staff at hospital, Health Board and wider levels. Required to interpret information related to legal compliance with respect to radiation safety and communicate requirements to other groups. Communication on specific matters may be oral, lectures to groups of 20-100, presentations at meetings, by telephone, E-mail, letter or written reports. Comprehensive written reports are prepared giving recommendations on a range of topics including reviews of radiation safety, radiation equipment performance, radiation equipment replacement, radioactive waste disposal strategies and incident investigations (several times per month). Some reports set out recommendations on Health Board management strategy on broad issues, for wide circulation, while other are for individual hospital departments. The groups involved are set out below.**Management:** Provide advice on a variety of issues related to radiation safety and radiation equipment. Advise managers of need to take action and allocate funding to deal with shortcomings in safety, in circumstances where these may not be perceived as a high priority. Review radiation safety issues and provide input into development of services involving radiation use. Contribute advice and recommendations at NHS Radiation Safety and other related Committees to support and consolidate radiation safety practices.**Scientific and Medical Professionals in other organisations:** Present lectures and scientific papers at national and international conferences, and to meetings of professional groups organised by Government or scientific professional bodies, often involving several hundred delegates.**Clinicians and Dentists:** Advise on radiation safety and technical aspects of radiation equipment performance, optimisation of clinical practices, and legislative requirements. Interview as part of incident investigations, when required. Communicate sensitive information on risks following incidents resulting in radiation exposure. Give lectures on clinical application of radiation safety to groups of 10-100 staff.**Other Professional Staff:** Provide information and advice on radiation safety, legal compliance, operation of complex X-ray equipment and on dealing with radioactive patients and materials. Give lectures, tutorials, demonstrations, practicals and other forms of training to groups of 40-60 radiographers, clinical scientists and nurses. Interview staff as part of incident investigations, when required. Discuss incident investigations with local staff. Motivate staff to implement appropriate radiation protection management systems. Explain sensitive information on risks to staff following radiation exposure incidents.Regulatory Agencies and Inspectors: Consult and discuss legislative compliance issues on behalf of hospital management. This includes representatives of the Scottish Government Health Department, Healthcare Improvement Scotland, the Health and Safety Executive, the Scottish Environment Protection Agency and National Procurement.**Trainees and Students:** Give lectures and practical training on a range of topics to radiology trainees and medical, dental, medical physics and other students undertaking degree courses. Supervise and motivate medical physics trainees and students undertaking scientific and technical projects.**Patients:** Communicate highly sensitive information relating to understanding of risks to patients or relatives following radiation exposures, when required.**Non NHS staff:** Give complex advice on compliance with legislation and guidance during installations.**Equipment Manufacturers/Suppliers:** Communicate highly complex information during installation and acceptance of X-ray and other radiation equipment. When required, interview as part of investigations of radiation exposure incidents resulting from equipment failures, to determine causes. **Hospital Estates Staff & Contractors:** Provide advice on design, planning and installation of radiation facilities for new and existing hospital developments to ensure legislative compliance. **Police and other Emergency Services:** Provide advice at the appropriate level on necessary actions and precautions to deal with radiation accidents and emergency situations. |
| 1. **PHYSICAL, MENTAL AND EMOTIONAL DEMANDS OF THE JOB**

Physical SkillsSpecific requirements for accuracy while using a range of specialist radiation measuring equipment and operating complex imaging equipment; for precision in positioning test equipment and phantoms to millimetre accuracy and adjusting equipment settings with fine screwdrivers; and for constancy while recording measurement data and assessing test images. Physical Demands1. A rare requirement to wear a lead equivalent protective apron, weighing 5-6 kg for up to 1 h.
2. Extended periods of time (up to 3 h) spent sitting at a desk, typing and editing reports, and analysing data using desktop PC or laptop computer.

Mental Demands1. The post holder is required to deal with an extensive range of tasks involving different demands, often at the same time. Intense concentration is frequently required for extended periods in order to ensure the work is completed satisfactorily and all results verified.
2. The post holder frequently requires intense concentration to ensure highly complex information is analysed accurately, and results and conclusions are determined within a limited timescale, and then recorded and presented in a clear manner. Tasks include complex mathematical analysis involving spreadsheet calculations, detailed analysis of test results on highly complex equipment and analysis of situations requiring consideration of legal, ethical, social and economic issues.
3. The postholder is frequently required to concentrate for periods of 3 hours at a time, in order to ensure that highly complex situations are analysed correctly, and sufficient information is recorded to enable a full representation of findings to be prepared.
4. The postholder is required to adapt to deal with frequent interruptions, which require them to respond to requests for specific information or give immediate decisions and judgements on management, scientific accuracy or safety.
5. The postholder will be required to provide immediate advice in response to evolving situations, e.g. during radiation emergencies.

Emotional Demands1. Occasional interviews of individuals who may have contributed to radiation incidents.
2. Occasional explanation of implications of management decisions and changes to individuals affected.
3. Addressing concerns of staff and members of public about their safety and allaying their fears following radiation exposure.
4. Rare involvement in reassuring individuals and providing advice on minimising hazards after radiation exposure, or on arrival at the scene of a road traffic or other accident involving radioactive materials. This relates to participation in emergency callouts under the NAIR scheme and Emergency Response Plan for Major Radiation Incidents (first name in Health Physics on call-out list).

Working Conditions1. Frequent use of road transport with occasional journeys to remote areas with 2-3 h journey times (1-2 times per month).
2. Rare exposure to ionising and non-ionising radiation at radiation incidents or accidents or from faulty equipment.
3. Occasional visits to building/construction sites to carry out inspections during new build projects
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| 1. **MOST CHALLENGING / DIFFICULT PARTS OF THE JOB**

Simultaneous involvement in multiple tasks and projects, which require both management and analytical input for decisions in varying timescales; many with short deadlines. The analysis and judgements may be mathematical, socio-economic, ethical, practical, or legal.Keeping abreast and understanding the implications of new developments in multiple fields of scientific and technological progress and clinical applications to a level where specific advice can be given to a wide range of professional groups.Balancing service requirements against the availability of expert scientific staff, particularly when there are competing simultaneous demands from West of Scotland Health Boards.  |
| **12. KNOWLEDGE, TRAINING AND EXPERIENCE REQUIRED TO DO THE JOB**Education / Qualifications*Essential** 1st or upper 2nd class honours degree in physics or allied subject.
* Doctoral training in Physics, Medical Physics or a related subject, or equivalent experience
* Certificate of completion of a formal medical physics training scheme equivalent to STP, or equivalent experience
* Registration as a Clinical Scientist with the Health and Care Professions Council (HCPC)
* RPA 2000 Certificate of Competence to act as a Radiation Protection Adviser under IRR17.
* RPA 2000 Certificate of Competence to act as a Medical Physics Expert under IRMER17.
* Eligibility for Fellowship of IPEM or similar professional body
* Eligibility for entry to Higher Specialist Scientist Register (HSSR)
* Full UK driving licence

*Desirable** Sufficient experience to gain RPA 2000 Certificate of competence as a Radioactive Waste Adviser; otherwise expected to obtain this within an agreed timescale following appointment
* Sufficient experience to gain RPA 2000 Certificate of Competence to act as a Laser Protection Adviser; otherwise expected to obtain this within an agreed timescale following appointment

**Skills, Knowledge and Abilities** *Essential** Extensive advanced theoretical and practical knowledge of radiation protection, diagnostic radiology physics, and non-ionising radiation dosimetry and hazards.
* Specialist knowledge and experience of work procedures and practices in Radiology, Radionuclide Imaging and Radiotherapy
* Comprehensive specialist knowledge of radiation legislation and related guidance, as required to be the leading expert on this in the NHS in the West of Scotland.
* Can test performance of a wide range of highly complex X-ray equipment.
* Analytical skills to tackle practical problems, to detect flaws in applied techniques, to identify errors in reports prepared by staff prior to verification, and to critically appraise new proposals.
* A high level of scientific mathematical and analytical skills, required for complex calculations using spreadsheets and similar techniques to simulate physical interactions in practical situations, in order to tackle problems posed by new techniques or requirements.
* Planning and organisational skills required for managing a regional service and introducing new services to meet changes in legislative requirements and developments in technical facilities.

*Desirable** Training in requirements for dealing with radiation emergencies.
* Specialist knowledge and experience of the medical uses of lasers and ultraviolet phototherapy in Dermatology.

**Experience*** Extensive post qualification experience as RPA and MPE in Diagnostic Radiology across a wide breadth of equipment and clinical applications.
* Extensive experience in a clinical scientific senior leadership role.
* Extensive experience in giving scientific presentations to groups of health care professionals at all levels.
* Able to design and give appropriate lectures to different staff groups on a wide range of topics
* Experience in a senior leadership or management position in Health Physics (Diagnostic Radiology and/or Radiation Protection)

*Desirable** Evidence of national / international reputation in research and development with demonstrable track record in obtaining grants, and of supervising postgraduate students and other staff undertaking research projects.

**Personal Attributes*** Good problem solving and analytical skills.
* Ability to act independently within professional guidelines.
* Ability to communicate effectively with a variety of staff groups.
* Ability to organise work activities for a range of professional and technical staff, to plan work activities and carry them forward to meet deadlines.
* Ability to manage a range of work activities and to supervise other physics and technical staff.
* Ability to provide positive and constructive feedback to staff and have honest and frank conversations when required.
* Ability to motivate staff to work effectively as a team.
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| **13. JOB DESCRIPTION AGREEMENT**A separate job description will need to be signed off by each jobholder to whom the job description applies. **Job Holder’s Signature:** **Head of Department Signature:** | **Date:****Date:** |