



Health Information and Quality Authority

Report of the assessment of compliance with medical exposure to ionising radiation regulations

Name of Medical Radiological Installation:	Cork University Hospital
Undertaking Name:	Health Service Executive
Address of Ionising Radiation Installation:	Model Farm Road, Wilton, Cork
Type of inspection:	Announced
Date of inspection:	25 August 2020
Medical Radiological Installation Service ID:	OSV-0007353
Fieldwork ID:	MON-0028535

About the medical radiological installation:

Cork University Hospital (CUH) is the tertiary referral centre for the HSE Southern area, and the supra regional area of Limerick, Clare, Tipperary, Waterford and Kilkenny. CUH therefore acts as a regional centre for secondary and tertiary care for the catchment population of approx 600,000 served by the HSE Southern area and a supraregional centre for a total a population of 1.1 million. CUH now has 800 beds following completion of the transfer of Cardiac and Renal services to the recently constructed Cardiac Renal Centre. The hospital currently employs 3,400 staff. The main Radiology facilities are located on the ground floor in the main hospital complex and provide imaging services to all patients attending the hospital and Cork University Maternity Hospital whether as an inpatient, outpatient or an external referral. Radiology also takes referrals from other hospitals within the CUH group and also from the wider South - South West Hospital Group. Radiology performed 154,405 patient examinations in 2019 including Cardiac Catherisation exams (no exam weighting/factoring applied). The multi-disciplinary Radiology team numbers 135 whole time equivalents and is made up of: Consultant Radiologists, Specialist Radiology Registrars, Radiographers, Radiology Nursing staff, Medical Physics, Clerical Administration, Healthcare Assistants, Porters, Domestic staff. Radiology in CUH is a teaching department with links to the Faculty of Radiologists in the Royal College of Surgeons Ireland and provides training through the specialist Radiology registrar training scheme. It also is heavily involved with the University College Cork (UCC) graduate programme for Radiography and the undergraduate Radiography programme in University College Dublin and provides intensive training through clinical placement for Radiography students. The Radiology department has strong links with the UCC research programme headed by the Professor of Radiology in the Radiology department. The radiology department provide scans, x-rays and procedures to diagnose and treat a wide range of medical conditions. Radiology provides a wide range of high end imaging services with 24/7 imaging across most specialities for the acute presentation. The following radiology services are available on-site in CUH : Computed Tomography (CT), Nuclear Medicine, Interventional Radiology (general and neuro-vascular), Mammography, Ultrasound, General plain film Radiography, Fluoroscopy, Trauma, Coronary Catherisation Labs & Hybrid Lab,

Image intensifiers in theatre complex, Mobile radiography on the wards, Magnetic Resonance Imaging (MRI) (outsourced), Positron Emission Tomography (PET)/CT (outsourced).

How we inspect

This inspection was carried out to assess compliance with the European Union (Basic Safety Standards for Protection against Dangers Arising from Medical Exposure to Ionising Radiation) Regulations 2018 and 2019. The regulations set the minimum standards for the protection of service users exposed to ionising radiation for clinical or research purposes. These regulations must be met by each undertaking carrying out such practices. To prepare for this inspection, the inspector¹ reviewed all information about this medical radiological installation². This includes any previous inspection findings, information submitted by the undertaking, undertaking representative or designated manager to HIQA³ and any unsolicited information since the last inspection.

As part of our inspection, where possible, we:

- talk with staff and management to find out how they plan, deliver and monitor the services that are provided to service users
- speak with service users⁴ to find out their experience of the service
- observe practice to see if it reflects what people tell us
- review documents to see if appropriate records are kept and that they reflect practice and what people tell us.

About the inspection report

In order to summarise our inspection findings and to describe how well a service is complying with regulations, we group and report on the regulations under two dimensions:

1. Governance and management arrangements for medical exposures:

¹ Inspector refers to an Authorised Person appointed by HIQA under Regulation 24 of S.I. No. 256 of 2018 for the purpose of ensuring compliance with the regulations.

² A medical radiological installation means a facility where medical radiological procedures are performed.

³ HIQA refers to the Health Information and Quality Authority as defined in Section 2 of S.I. No. 256 of 2018.

⁴ Service users include patients, asymptomatic individuals, carers and comforters and volunteers in medical or biomedical research.

This section describes HIQA's findings on compliance with regulations relating to the oversight and management of the medical radiological installation and how effective it is in ensuring the quality and safe conduct of medical exposures. It outlines how the undertaking ensures that people who work in the medical radiological installation have appropriate education and training and carry out medical exposures safely and whether there are appropriate systems and processes in place to underpin the safe delivery and oversight of the service.

2. Safe delivery of medical exposures:

This section describes the technical arrangements in place to ensure that medical exposures to ionising radiation are carried out safely. It examines how the undertaking provides the systems and processes so service users only undergo medical exposures to ionising radiation where the potential benefits outweigh any potential risks and such exposures are kept as low as reasonably possible in order to meet the objectives of the medical exposure. It includes information about the care and supports available to service users and the maintenance of equipment used when performing medical radiological procedures.

A full list of all regulations and the dimension they are reported under can be seen in Appendix 1.

This inspection was carried out during the following times:

Date	Times of Inspection	Inspector	Role
Tuesday 25 August 2020	09:30hrs to 14:00hrs	Noelle Neville	Lead
Tuesday 25 August 2020	09:30hrs to 14:00hrs	Agnella Craig	Support

Governance and management arrangements for medical exposures

Cork University Hospital (CUH) is a model 4 hospital in the South/South West Hospital Group. CUH also forms part of the Cork University Hospitals Group (CUHG) which includes Mallow General Hospital (MGH) and Bantry General Hospital. On the day of inspection, inspectors focused on aspects of the radiology service provided at the hospital and on key regulations including those relating to medical physics expertise. This was as a result of non-compliances identified during a routine announced inspection at MGH which is part of the CUH Group on 19 February 2020.

In relation to medical physics experts (MPEs) at CUH, inspectors noted that MPE involvement in medical radiological practices was evident, with the level of involvement in line with the services provided at the hospital. MPEs had contributed to the establishment of DRLs, acceptance testing and quality assurance of medical radiological equipment, incident analysis and training of staff in relevant aspects of radiation protection. However, inspectors viewed evidence of and were informed that there was an identified resourcing deficit of diagnostic physics staff which had impacted on the quality assurance (QA) testing of equipment and had the potential to further impact services provided. Inspectors were concerned in relation to the continuity of medical physics expertise at both the hospital and external sites which also relied on medical physics expertise. This concern was accepted and acknowledged by senior management who informed inspectors that this issue had been escalated to the hospital's risk register and several business cases had been submitted in relation to same. Management at the hospital should review current and future MPE staffing for CUH and associated satellite sites and enact any changes identified as part of that review as a matter of urgency.

Overall, inspectors found that staff and management had a clear understanding of the allocation of responsibility for the protection of service users. From the records reviewed and discussions with management and staff, inspectors were assured that systems and processes were in place to ensure that referrals were only accepted from those entitled to refer and individual for medical radiological procedures. Inspectors were also assured that medical exposures took place under the clinical responsibility of a practitioner. However, inspectors identified the development, oversight and approval of policies as an area of potential improvement in relation to radiation protection at the hospital. Some policies were provided to inspectors in draft format and inspectors found that policies should be updated to ensure that they are reflective of day-to-day practice and ensure clarity regarding roles and responsibilities of staff within the hospital.

Regulation 4: Referrers

Referrals for medical radiological procedures in the Radiology Department were

accepted from registered medical practitioners and inspectors were also informed that radiographers were entitled to adapt certain referrals where necessary. Referrals were also accepted from dentists and recognised advanced nurse practitioners. Inspectors spoke with staff who demonstrated a clear understanding of the referral process. The hospital received referrals in electronic and hard copy format from internal and external sources. A sample of referrals viewed by inspectors were in line with the regulations and the referrer was consistently identifiable. While the hospital was compliant with this regulation, inspectors found that the hospital should definitively document those that can act as a referrer at the hospital for clarity.

Judgment: Compliant

Regulation 5: Practitioners

Inspectors spoke with staff in the Radiology Department and found that only those entitled to act as practitioners had taken clinical responsibility for individual medical exposures as per the regulations. While the hospital was compliant with this regulation, inspectors found that the hospital should explicitly define in documentation who can act as a practitioner within the hospital.

Judgment: Compliant

Regulation 6: Undertaking

The hospital had a Radiation Safety Committee (RSC), the purpose of which included ensuring compliance with the regulations. The RSC was incorporated into local governance structures, reporting to the Executive Quality and Safety Committee which reported to the Executive Management Board and in turn the Chief Executive Officer. Inspectors were informed that the Chief Executive Officer of the hospital was to become chair of this committee at the next meeting to be held in September 2020. The lines of governance and clinical oversight were communicated to inspectors by management and other staff during the inspection. In addition, documentation reviewed, including a hospital organogram, outlined the reporting structures in place within the hospital for radiation safety.

Overall, while the allocation of responsibilities for the radiation protection of services users was clear amongst staff and management, inspectors identified the development, oversight and approval of policies as an area of potential improvement in relation to radiation protection at the hospital. Some policies were provided to inspectors in draft format and inspectors found that policies should be updated to ensure that they are reflective of day-to-day practice and ensure clarity regarding

roles and responsibilities of staff within the hospital.

Judgment: Substantially Compliant

Regulation 19: Recognition of medical physics experts

Inspectors were informed that medical physics expertise was provided at the hospital by a team of on-site MPEs. This team also provided medical physics expertise to several hospitals and community dentists in the southern region. The hospital had arrangements in place for the continuity of medical physics expertise. However, on review of documentation and discussions with staff, inspectors noted that the hospital had identified a resourcing deficit of diagnostic physics staff at the hospital. While continuity arrangements were in place, inspectors had concerns in relation to the potential impact of the reported staffing deficits in meeting the requirements of the regulations both at the hospital and external sites. This finding was accepted and acknowledged by senior management who informed inspectors that this issue had been escalated to the hospital's risk register and several business cases had been submitted in relation to same. Management at the hospital should review current and future MPE staffing for CUH and associated satellite sites and enact any changes identified as part of that review as a matter of urgency.

Judgment: Substantially Compliant

Regulation 20: Responsibilities of medical physics experts

Documentation reviewed by inspectors and discussions with management and staff indicated that MPEs had contributed to aspects of this regulation relevant to the medical radiological practice. This included contributing to the establishment of DRLs, acceptance testing and QA of medical radiological equipment, incident analysis and training of staff in relevant aspects of radiation protection. Inspectors also noted from documentation reviewed that one of the hospital's MPEs carried out the separate role of radiation protection adviser (RPA) in relation to diagnostic physics. However, due to an identified resourcing deficit of diagnostic physics staff, inspectors noted that some pieces of equipment were overdue for QA testing. This was noted as a recurring issue in the RSC minutes that had been escalated to the hospital's risk register and several business cases had been submitted in relation to same.

Judgment: Substantially Compliant

Regulation 21: Involvement of medical physics experts in medical radiological practices

Inspectors found that despite the diagnostic physics staffing challenges outlined to inspectors, MPE involvement in medical radiological practices was evident, with the level of involvement in line with the services provided at the hospital and commensurate with the radiological risk posed by the practice. In addition, staff outlined that MPEs were available for consultation and advice on matters relating to radiation protection concerning medical exposure.

Judgment: Compliant

Safe Delivery of Medical Exposures

On the day of inspection, inspectors focused on aspects of the radiology service provided at the hospital and on key regulations including those relating to medical physics expertise. This was as a result of non compliances identified during a routine announced inspection at MGH which is part of the CUH Group on 19 February 2020.

Inspectors found from the regulations reviewed that the hospital had measures in place to ensure that safe and effective medical exposures were provided to service users in compliance with the regulations. This included evidence of the establishment of local DRLs in the majority of areas with further work in progress for the remaining areas, the availability of information in relation to the benefits and risks associated with radiation and the appropriate justification of medical exposures. An up-to-date inventory of equipment and QA reports were provided to inspectors which showed that an appropriate QA programme was in place. However, while QA testing had been performed on the majority of equipment, inspectors noted from documentation that a minority of equipment was overdue QA testing due to the availability of diagnostic physics staff. In addition, while a number of pieces of equipment had passed their nominal replacement date, inspectors noted that this equipment was approved for clinical use and had passed all necessary QA testing.

Notwithstanding areas noted for improvement, inspectors found that the hospital had assurances in place to ensure that effective and safe medical exposures based on the regulations reviewed as part of this dimension.

Regulation 8: Justification of medical exposures

All referrals reviewed by inspectors on the day of inspection in the Radiology Department were available in writing, stated the reason for the request and were accompanied by sufficient medical data. Staff demonstrated to inspectors that previous diagnostic information from procedures which took place in the hospital

and some local hospitals was available for review on the hospital's radiology information system although the hospital did not have access to the national integrated medical imaging system (NIMIS) which would allow for imaging from a wider range of hospitals to be viewed if necessary.

Information in relation to the benefits and risks associated with radiation was available to individuals undergoing medical exposure from radiology staff and on posters in the waiting area of the Radiology Department.

The hospital had a policy on the justification of radiological examinations. Inspectors spoke with staff responsible for the justification of medical exposures, who described how each medical exposure was justified. Inspectors reviewed a sample of records and spoke with staff and found that justification was conducted by appropriate individuals as defined by Regulation 5. In addition, the record of justification was captured for all procedures carried out at the hospital. While this policy had been recently approved in August 2020, inspectors found that the policy would benefit from further review in relation to alignment with current regulations

Judgment: Compliant

Regulation 11: Diagnostic reference levels

Management at CUH had submitted a self-assessment questionnaire to HIQA towards the end of 2019 stating their perceived level of compliance with the regulations. Management had assessed its level of compliance with this regulation as non compliant. However, inspectors noted that significant work was underway in improving compliance in relation to diagnostic reference levels (DRLs)

Inspectors were provided with a draft policy on dose reference levels in radiology which outlined a dose audit training programme for departmental teams who would subsequently calculate, monitor and revise local DRLs. Staff informed inspectors that a dose monitoring system was available in areas of the hospital which assisted in the collection of dose data. While the hospital had previously relied on the use of national DRLs, work was underway in establishing local DRLs across the hospital with higher risk areas prioritised and evidence of same seen. The hospital should complete the establishment of local DRLs as a priority to ensure compliance with this regulation.

Judgment: Substantially Compliant

Regulation 14: Equipment

Inspectors were provided with an up-to-date inventory of medical radiological

equipment and noted that the equipment was kept under strict surveillance regarding radiation protection. Documentation reviewed by inspectors showed that appropriate QA programmes, including regular performance testing had been implemented for each piece of medical radiological equipment on the inventory. However, while QA testing had been performed on the majority of equipment, inspectors noted from documentation that a minority of equipment was overdue QA testing due to the availability of diagnostic physics staff.

Inspectors viewed records demonstrating that a number of pieces of equipment at the hospital had exceeded their nominal replacement age. However, it was noted that this equipment was approved for clinical use and had passed all necessary QA testing. The hospital had also submitted a business case in relation to the replacement of certain pieces of equipment. Inspectors were also informed that a system was in place for reporting and recording equipment faults and processes were in place to take equipment out of service where it was deemed necessary for patient safety.

Judgment: Substantially Compliant

Appendix 1 – Summary table of regulations considered in this report

This inspection was carried out to assess compliance with the European Union (Basic Safety Standards for Protection against Dangers Arising from Medical Exposure to Ionising Radiation) Regulations 2018 and 2019. The regulations considered on this inspection were:

Regulation Title	Judgment
Governance and management arrangements for medical exposures	
Regulation 4: Referrers	Compliant
Regulation 5: Practitioners	Compliant
Regulation 6: Undertaking	Substantially Compliant
Regulation 19: Recognition of medical physics experts	Substantially Compliant
Regulation 20: Responsibilities of medical physics experts	Substantially Compliant
Regulation 21: Involvement of medical physics experts in medical radiological practices	Compliant
Safe Delivery of Medical Exposures	
Regulation 8: Justification of medical exposures	Compliant
Regulation 11: Diagnostic reference levels	Substantially Compliant
Regulation 14: Equipment	Substantially Compliant

Compliance Plan for Cork University Hospital OSV-0007353

Inspection ID: MON-0028535

Date of inspection: 25/08/2020

Introduction and instruction

This document sets out the regulations where it has been assessed that the undertaking is not compliant with the European Union (Basic Safety Standards for Protection against Dangers Arising from Medical Exposure to Ionising Radiation) Regulations 2018 and 2019.

This document is divided into two sections:

Section 1 is the compliance plan. It outlines which regulations the undertaking must take action on to comply. In this section the undertaking must consider the overall regulation when responding and not just the individual non compliances as listed in section 2.

Section 2 is the list of all regulations where it has been assessed the undertaking is not compliant. Each regulation is risk assessed as to the impact of the non-compliance on the safety, health and welfare of service users.

A finding of:

- **Substantially compliant** - A judgment of substantially compliant means that the undertaking or other person has generally met the requirements of the regulation but some action is required to be fully compliant. This finding will have a risk rating of yellow which is low risk.
- **Not compliant** - A judgment of not compliant means the undertaking or other person has not complied with a regulation and considerable action is required to come into compliance. Continued non-compliance — or where the non-compliance poses a significant risk to the safety, health and welfare of service users — will be risk rated red (high risk) and the inspector will identify the date by which the undertaking must comply. Where the non-compliance does not pose a risk to the safety, health and welfare of service users, it is risk rated orange (moderate risk) and the undertaking must take action *within a reasonable timeframe* to come into compliance.

Section 1

The undertaking is required to set out what action they have taken or intend to take to comply with the regulation in order to bring the medical radiological installation back into compliance. The plan should be **SMART** in nature. **S**pecific to that regulation, **M**easurable so that they can monitor progress, **A**chievable and **R**ealistic, and **T**ime bound. The response must consider the details and risk rating of each regulation set out in section 2 when making the response. It is the undertaking's responsibility to ensure they implement the actions within the timeframe.

Compliance plan undertaking response:

Regulation Heading	Judgment
Regulation 6: Undertaking	Substantially Compliant
<p>Outline how you are going to come into compliance with Regulation 6: Undertaking: The hospital Chief Executive Officer will chair the Radiation Safety Committee commencing from the next meeting. Policies are currently being updated and in line with hospital policy will be approved by the Hospital Radiation Committee in Q4 2020.</p>	
Regulation 19: Recognition of medical physics experts	Substantially Compliant
<p>Outline how you are going to come into compliance with Regulation 19: Recognition of medical physics experts: The Medical Physics department has already reviewed the staffing requirements of CUH Diagnostics Physics on the basis of European guidelines and submitted a business case to the hospital. The business case provides the detail around numbers and grading of staff that would ensure adequate and appropriate MPE staffing levels. The business case is currently being addressed by hospital management in conjunction with the South/South West Hospital Group and the HSE. This process should be completed by year end. In the interim the process of recruitment of physicists and physics technicians has commenced.</p>	

Regulation 20: Responsibilities of medical physics experts	Substantially Compliant
<p>Outline how you are going to come into compliance with Regulation 20: Responsibilities of medical physics experts:</p> <p>The Medical Physics department has already reviewed the staffing requirements of CUH Diagnostics Physics on the basis of European guidelines and submitted a business case to the hospital. The business case provides the detail around numbers and grading of staff that would ensure adequate and appropriate MPE staffing levels. The business case is currently being addressed by hospital management in conjunction with the South/South West Hospital Group and the HSE. This process should be completed by year end.</p> <p>Regulation 20</p> <p>S - In accordance with Regulation 20, Diagnostic Physics contribute to the definition and performance of quality assurance of the medical radiological equipment. Diagnostic Physics has a team of three staff members dedicated to the implementation of a QA programme in CUH.</p> <p>M – X-ray Equipment Inventory incorporating a QA scheduler Fortnightly QA meetings to progress programme (reports on QA progress, assignment of QA work, etc.) Fortnightly statistics on QA performance Weekly QA Update email (generally circulated)</p> <p>A - Diagnostic Physics have prioritised X-Ray equipment QA Diagnostic Physics QA team composed of three (two MPEs) members of staff with additional support from two others.</p> <p>R - Diagnostic Physics is based in CUH X-Ray equipment is on site and accessible in CUH</p> <p>T - QA Team meets fortnightly to progress programme High dose/risk equipment QA is prioritised Overdue equipment QA is prioritised</p>	
Regulation 11: Diagnostic reference levels	Substantially Compliant
<p>Outline how you are going to come into compliance with Regulation 11: Diagnostic reference levels:</p> <p>As stated in the report, inspectors noted that significant work was underway in improving compliance in relation to diagnostic reference levels with higher risk areas prioritised.</p> <ul style="list-style-type: none"> • S – DRL’s for all general rooms 1, 2, 3, 4D and all procedures performed in CT & Intervention that don’t have DRL’s as per published HIQA National DRL’s February 2020. • M – The DRL’s for the above rooms will be entered into the Hospitals DRL spreadsheet by January 2021. 	

- A – Responsibility for this is being delegated to each of the Clinical Specialist Radiographers in each area, with oversight and support from the Radiation Protection Officer, CUH.
- R – At present this is realistic target, as we have completed significant work on this following our date of inspection. Please note the target date may be impacted by the ongoing COVID-19 pandemic.
- T – Completing this work is a priority for this Department at this time, and we are focused on completion by January 2021.

Regulation 14: Equipment

Substantially Compliant

Outline how you are going to come into compliance with Regulation 14: Equipment:
 The Medical Physics department has already reviewed the staffing requirements of CUH Diagnostics Physics on the basis of European guidelines and submitted a business case to the hospital. The business case provides the detail around numbers and grading of staff that would ensure adequate and appropriate MPE staffing levels. The business case is currently being addressed by hospital management in conjunction with the South/South West Hospital Group and the HSE. This process should be completed by year end. Equipment requirements are also being reviewed. This process should be complete by year end.

Regulation 14

S - In accordance with Regulation 14, Diagnostic Physics operate an appropriate QA programme for medical radiological equipment in CUH.

M – X-ray Equipment Inventory incorporating a QA scheduler
 Fortnightly QA meetings to progress programme (reports on QA progress, assignment of QA work, etc.)

Fortnightly statistics on QA performance

Weekly QA Update email (generally circulated)

A - Diagnostic Physics have prioritised X-Ray equipment QA

Diagnostic Physics QA team composed of three (two MPEs) members of staff with additional support from two others.

R - Diagnostic Physics is based in CUH

X-Ray equipment is on site and accessible in CUH

T - QA Team meets fortnightly to progress programme

High dose/risk equipment QA is prioritised

Overdue equipment QA is prioritised

Section 2:

Regulations to be complied with

The undertaking and designated manager must consider the details and risk rating of the following regulations when completing the compliance plan in section 1. Where a regulation has been risk rated red (high risk) the inspector has set out the date by which the undertaking and designated manager must comply. Where a regulation has been risk rated yellow (low risk) or orange (moderate risk) the undertaking must include a date (DD Month YY) of when they will be compliant.

The undertaking has failed to comply with the following regulation(s).

Regulation	Regulatory requirement	Judgment	Risk rating	Date to be complied with
Regulation 6(3)	An undertaking shall provide for a clear allocation of responsibilities for the protection of patients, asymptomatic individuals, carers and comforters, and volunteers in medical or biomedical research from medical exposure to ionising radiation, and shall provide evidence of such allocation to the Authority on request, in such form and manner as may be prescribed by the Authority from time to time.	Substantially Compliant	Yellow	31/12/2020
Regulation 11(5)	An undertaking shall ensure that diagnostic reference levels for radiodiagnostic examinations, and where appropriate for interventional	Substantially Compliant	Yellow	31/01/2021

	radiology procedures, are established, regularly reviewed and used, having regard to the national diagnostic reference levels established under paragraph (1) where available.			
Regulation 14(2)(a)	An undertaking shall implement and maintain appropriate quality assurance programmes, and	Substantially Compliant	Yellow	31/12/2020
Regulation 19(9)	An undertaking shall put in place the necessary arrangements to ensure the continuity of expertise of persons for whom it is responsible who have been recognised as a medical physics expert under this Regulation.	Substantially Compliant	Yellow	31/12/2020
Regulation 20(2)(c)	An undertaking shall ensure that, depending on the medical radiological practice, the medical physics expert referred to in paragraph (1) contributes, in particular, to the following: (i) optimisation of the radiation protection of patients and other individuals subject to medical	Substantially Compliant	Yellow	31/12/2020

	<p>exposure, including the application and use of diagnostic reference levels;</p> <p>(ii) the definition and performance of quality assurance of the medical radiological equipment;</p> <p>(iii) acceptance testing of medical radiological equipment;</p> <p>(iv) the preparation of technical specifications for medical radiological equipment and installation design;</p> <p>(v) the surveillance of the medical radiological installations;</p> <p>(vi) the analysis of events involving, or potentially involving, accidental or unintended medical exposures;</p> <p>(vii) the selection of equipment required to perform radiation protection measurements;</p> <p>and</p> <p>(viii) the training of practitioners and other staff in relevant aspects of radiation protection.</p>			
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