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Radiation Protection Career Guidance

Reference Number: IAC/RPCG/RPA/0001

Title:	**Radiation Protection Career Guidance – Part 1**
Status:	Open (Issue 1)
Scope:	This RPCG article provides useful careers guidance for those that have an interest in radiation protection. This article has been written as Ionactive Consulting Ltd believes there is a need for clear guidance and information regarding the world of radiation protection and the opportunities available. The RPCG comes in a number of parts, this being **Part 1**.
Author:	Mark Ramsay (Ionactive Consulting Ltd)
Use:	This article is provided for general use by all those interested in radiation protection. It may also be of use to those currently working with sources of ionising radiation. Ionactive Consulting Ltd accepts no liability for any outcome (including errors or omissions) arising from using the information presented in this article. If you are in any doubt about how this article might apply in your particular circumstances, contact a suitable Radiation Protection Adviser.
Legislation:	Ionising Radiations Regulations 1999 (SI1999/3232) Radioactive Substances Act 1993

1) Introduction

This Radiation Protection Careers Guidance Article (**Part 1**) is written by Mark Ramsay, a Radiation Protection Adviser (RPA) for many organisations in the UK and worldwide through Ionactive Consulting. We aim to provide you with some basic information about the role of the RPA and how you might become an RPA or at least work within the field of radiation protection. This article series is aimed at anyone with

a general interest in radiation protection, but will be particularly useful for those still at university, or perhaps those that are considering a career change. There is a lot of useful information on the web and we will use this series to point you towards that resource.

Whilst this article may be printed it is designed to be read online as we provide useful embedded links to other external resources. We will also be directing you to other useful areas of our site, all of which will open in a new window.

2) A Career in Radiation Protection

Before we delve into the world of the RPA it is appropriate to consider what we mean by '*Radiation Protection*'. In our Radiation Protection Glossary we define this term as:

> Radiation Protection is a general term applied to the profession / science related to protecting man and the environment from radiation hazards. Strictly speaking it should represent all forms of radiation (e.g. ionising and non-ionising) but is mostly applied to ionising radiations.

> You can visit our glossary at www.ionactive.co.uk/glossary.html where we have over 200 radiation protection related terms clearly explained.

We should point out that this is our definition and certainly not definitive. Therefore radiation protection can deal with both ionising and non-ionising radiation hazards. Whilst the RPA may choose to deal with non-ionising related matters (e.g. microwave safety), we will soon see that the 'RPA' is a carefully define term, associated with ionising radiation safety only.

The term 'radiation protection' can indeed be expressed in a number of different ways, some terms being directly comparable, whilst others being representative of a related discipline. Some of these are:

Radiation Safety
Radiation Physics
Health Physics
Radiological Protection
Radiological Health
Medical Physics

Not only are there several terms to express what we mean by radiation protection, so there are also terms to express what we might generally call a '*radiation protection practitioner*'. As before, some of these are directly comparable whilst others represent practitioners in related fields:

Radiation Protection Adviser
Radiation Safety Adviser
Health Physicist
Medical Physics Expert
Radiological Protection Specialist

Finally, these practitioners may work in a number of different but related fields of radiation protection. Some of these are:

Radiation Protection Advice	Provision of advice and guidance on restricting exposure to ionising radiation.
Operation Health Physics / Radiation Protection	Following procedures and taking actions to restrict exposure to ionising radiation. Many of these tasks are undertaken at the workface and will include monitoring, training, engineering containment and similar.
Health Physics Surveying / Monitoring	This may be seen as a subset of operational work. It involves post holders such as '*surveyors*' or '*monitors*', who are effectively the 'eyes & ears' in the work area. They carry out proactive monitoring (routine surveys) and reactive monitoring (incident or coverage monitoring) for contamination and radiation.
Radiation Dosimetry	Dosimetry is a major subset of radiation protection and is really a profession in its own right. Dosimetry looks at the detection and measurement of ionising radiation exposure to people and the environment. This can be further split into '*external dosimetry*' and '*internal dosimetry*'.
Instrumentation (Radiation Metrology)	This is another major subset of radiation protection and deals with the instrumentation used for the detection and measurement of ionising radiation in the around the workplace and beyond.

Radiation Safety Assessment	Radiation safety assessment and related fields of risk assessment, probabilistic safety assessments, radiological impact assessments, criticality assessment and similar can be carried out by one or more of the above practitioners. Some assessments, e.g. criticality, are undertaken by highly specialised experts.
Radiation Protection Research	Research may be undertaken in all the above areas, but much is left to the expertise of academics and other pioneers of their field. Areas of research will include radiobiology, epidemiology, monitoring, instrumentation, environmental impact and risk perception.

In all related areas identified, the intention is to provide one or more of the following: *advice*, *guidance*, *research* and *practical help*, in order to protect people and the environment from the adverse effects of ionising radiation. Furthermore, where ionising radiation is used for medical diagnostics and treatment purposes, the onus is on optimising the dose to the patients (to give the best medical benefit for the dose delivered) whilst protecting those supporting the medical treatment.

It is beyond the scope of this article series to deal with all these areas of work and professions. We will now for the moment concern ourselves exclusively with the RPA, looking at what they do, how you move into this field of work, and what your future career path in radiation protection might be.

When you are ready please feel free to access **Part 2** of this RPCG article – available from our website.
