Occupational Profile - occupation summary

Institute for Apprenticeships & Technical Education

Apprenticeship builder

Draft: proposal to develop an occupational standard for an apprenticeship

This submission

Unique occupational standard reference number:
ST0779

Title of Occupation:
Nuclear Technical Specialist

Trailblazer Group Reference Number:
TB0402

Name of Trailblazer Group:
Nuclear Technical Specialist

Does this standard have core and options?
No

Is this proposal a resubmission?:
No

Would your proposed apprenticeship standard replace an existing framework?
No

Target date:
31/01/2020

Rationale for target date:
Labour Market Intelligence has identified this occupation as a particular fragile skill area for our industry, and has been recognised as an important element of the Nuclear Sector Deal, so the sector seeks approval as soon as possible.

Occupational profile

This occupation is found in…

the nuclear sector, to include Civil and Defence. The UK nuclear sector includes reliable civil power generation and defence nuclear propulsion, with a capable supply chain, a world class regulator and a highly specialist workforce. Safe decommissioning of nuclear facilities and handling of waste are important functions within the sector.
This occupation will be found across these various parts of the nuclear industry.

The broad purpose of the occupation is...

to provide subject matter expertise in nuclear related disciplines.

Within their specialist area they originate the instruments, processes, and systems used in order to gain the benefits from radiation and nuclear energy and are expected to design, maintain and operate facilities which handle highly radioactive material. Due to the variety of settings in which the UK nuclear industry operates, the specific work of an individual will differ depending on the speciality in which they are employed.

In their daily work, an employee in this occupation interacts with…

a wide range of nuclear professionals inside and outside their own organisation, including: nuclear and environmental regulators, (e.g. Defence Safety Authority, Office for Nuclear Regulation, Environment Agency, Scottish Environmental Protection Agency), professional institutes, academic institutions, specialist institutes, and research laboratories. The occupation will also work at the highest level with customers and supply chain organisations to develop novel solutions to real life, complex problems.
They will provide colleagues with specific specialist input and rigour into organisational functions such as procurement, contract management, assurance, programme and project management.

An employee in this occupation will be responsible for…

Advising and supervising the technical aspects of potentially all activities of their organisation. Technical Specialists exercise considerable autonomy in defining and leading innovative solutions to business problems, and will report at very senior levels of their organisations. They apply their understanding to novel and unpredictable situations and, as an integral part of their role, are responsible for continuing to develop their own expertise and to advance knowledge in their professional field.
They have considerable responsibility to engineer out any chance of failure of a system or process that may lead to release of radioactivity into an environment.
They will be expected to teach and mentor colleagues in their area of expertise.
The number of people and the size of budget they manage will vary depending on the structure and size of their employer organisation, but their authority to affect these resources will be considerable as they use their expertise to guide the organisation to accept or reject large project solutions that can re-define the field of operations.

Typical job titles used for this occupation…

Technical Specialist
Technical Lead
Materials Specialist
Technology Manager

Scientific Manager
Senior Research Technologist
Senior Engineering Specialist
Senior Scientist
Research Manager
Responsible Engineer
Innovation Lead

Duties

Occupation duties

Duty	Days required to complete off the job training for this duty
Duty 1: Act as a lead technical adviser in their field of expertise to originate and deliver new, adapted and augmented technical solutions to complex and unpredictable problems for nuclear project teams. These solutions will be based on appropriate technical advice, using consultancy skills, and delivered in line with organisational resource constraints.	54
Duty 2: Develop and utilise internal and external networks to increase their subject matter knowledge and methods by which this knowledge is created and applied. They will demonstrate knowledge of the current state of subject matter knowledge gained through conferences, presentations, and internal / external publications written and reviewed.	27
Duty 3: Act as an ambassador for their area of expertise and company by communicating complex information clearly and effectively, and using feedback and peer review to advance their area of work. They will improve understanding of their area of expertise through technical mentoring, external advisory groups, and professional institutes.	27
Duty 4: Identify, develop and deliver advanced innovative technologies and techniques to address a range of complex situations to meet end user requirements.	27
Duty 5: Produce and synthesise information for technical reports, papers and submissions to the scrutiny of peer review, of an appropriate standard for wider publication. They will accurately communicate the technical findings of projects, taking into account best technical practice, regulation and international standards, including publication in peer-reviewed journals and conference presentations.	27
Duty 6: Independently and critically evaluate and analyse actions, methods and results, authorising or signing-off the work of others as appropriate.	13
Duty 7: Lead the technical direction of their team to deliver innovative solutions to project delivery.	13

Duty 8: Lead the Knowledge Management and Knowledge Transfer activities associated with their area of technical expertise, using their comprehensive understanding of methodologies appropriate to the sector. They will provide resources and information arrangements to capture and preserve relevant knowledge so that colleagues are suitably informed to enable them to carry out their roles.	14
Duty 9: Lead the development, analysis and implementation of technical governance in support of project delivery, including developing and implementing suitable technical standards associated with their area of expertise, and monitoring and addressing related technical risks.	13
Duty 10: Lead the assessment and application of the correct codes, standards and regulations and adjudicate in case of any conflict to the design of an experiment or engineering plan, setting and informing industry good practice where necessary.	14
Duty 11: Teach and mentor colleagues in their area of expertise up to Level 7 (Masters' degree equivalent), originating and delivering appropriate lectures/classes in accordance with university and employer requirements.	14
Duty 12: Define and lead safety and security requirements for implementation of projects in their area of work, in line with regulatory requirements	27

Additional information

Proposed Route:
Engineering and Manufacturing

Typical duration of apprenticeship (months):
72

Proposed occupational Level:
8

Transferability: the Institute expects that being competent in the duties you have listed in this proposal will mean that an individual will be able to undertake the occupation in all relevant types of employer. Please outline the steps you have taken to ensure that this will be the case and upload two examples of job adverts relating to the occupation (please only use this upload facility for this purpose. Any other information uploaded here will not be taken into account when reviewing your submission).
The Trailblazer Group includes representatives from across the UK nuclear sector (civil and defence), and from universities who typically support employers in these roles. Consultation has included organisations from power generation, decommissioning, defence, research & development, waste management, new build, and supply chain companies, as well as skills bodies and professional institutions.

Job advert information will be uploaded on submission.

Transferability uploads (if any):
Please estimate the typical number of annual starts on your proposed apprenticeship standard:
30

What is the Standard Occupational Code (SOC) for the occupation?
2129 - Engineering professionals n.e.c.

Stand alone occupation: please confirm that the proposed apprenticeship relates to a stand alone occupation, and explain how it will fit in with any associated apprenticeship standards and list any further occupations for which you plan to submit proposals (if you have no plans to submit further proposals please say so).
Employers in the nuclear sector are clear that this is a stand alone occupation, represented in different ways in different organisations. There are no other Standards currently at this Level (8), and this occupation is not covered by other existing Standards.

This Standard could represent a suitable progression route for some people who may have completed apprenticeships at lower levels, including for example the Nuclear Scientist and Nuclear Engineer Standard (ST0289) at Level 6.

Whilst some overlap of knowledge, skills and behaviours between apprenticeship standards is inevitable, the Institute will not permit the development of new apprenticeship standards relating to occupations already covered by existing standards. This means that the proposed apprenticeship needs to be recognised and to stand alone. To help demonstrate this, you may wish to upload a diagram detailing how the proposed apprenticeship fits in with any related apprenticeships and reference where it fits within the relevant occupational map.

Does professional recognition exist for the occupation?

Yes. Discussions have begun with relevant Professional Institutions, and this will be developed and evidenced as the Standard development is completed.