



# **Nuclear Decommissioning**

Attracting and retaining skills





**Our mission**

“Cleaning up the UK’s nuclear legacy is a long-term environmental challenge. It requires different skills in different locations at different times.

“It’s vital, based on the foresight we have, that we create an environment now that encourages people, no matter at what stage of their career, to develop the right skills for our mission.”

David Vineall, NDA Director of Human Resources

## A **skilled** and **diverse** workforce both now and in the future

The NDA is leading the decommissioning of 17 historic UK nuclear sites. This is one of the world’s biggest environmental clean-up operations.

Some of our sites date from the very earliest days of the post-war 1940s’ nuclear industry and include:

- research sites used during the development of the nuclear industry
- facilities that once produced nuclear materials for weapons
- the UK’s first generation of nuclear power stations: the Magnox fleet
- nuclear fuel fabrication and reprocessing facilities

While we will complete the bulk of our mission within the next few decades, in some parts of our estate, work to manage waste will continue for over 100 years.



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THE SMART COMMUNITY

Sellafield Ltd

Timeline Activity

## An **exciting, challenging** and **rewarding** career

To decommission some of these oldest, one-of-a-kind nuclear facilities, where no blueprint exists, we need people managing ground-breaking engineering projects.

Within our estate, there is a wide array of professions along with a variety of career pathways. Career routes cover roles within nuclear physics and chemical engineering, process operations and maintenance, right through to programme, supply chain and contract management. They enable capable individuals to achieve success and progress through recognised professional development.

Together, all of these people are safely and securely storing waste and restoring our nuclear sites for future generations.

Photograph: Sellafield Limited STEM ambassadors



## Our focus is on **people**

Our strategy enables people to progress their career in nuclear decommissioning by:

- learning and developing new skills, often from the knowledge shared by those reaching the end of their role in our mission
- transferring skills, either to areas where we have gaps or within the broader nuclear industry during its current renaissance
- offering employees terms and conditions that remain competitive

The UK has a strong history of investing in skills for its nuclear industry. However, without timely initiatives, the UK will not develop the relevant nuclear decommissioning skills.

This publication illustrates what we are doing, by working with other nuclear employers and relevant skills bodies, to make sure the right skills are available in the right place for our mission in the short, medium and longer term.

The Government's nuclear sector skills strategy 'Sustaining our Nuclear Skills' identified the following common goals for the industry:

**90%**

Aspire to meet 90% of the sector's skill demands from the UK workforce



Ensure the nuclear workforce's expertise is unsurpassed globally



Cultivate a more diverse nuclear workforce



## **NDA's mission:**

We aim to deliver safe, sustainable solutions to the challenge of nuclear clean-up and waste management. This means:

- never compromising on safety or security
- taking full account of our social and environmental responsibilities
- always seeking value for money for the taxpayer
- actively engaging with stakeholders



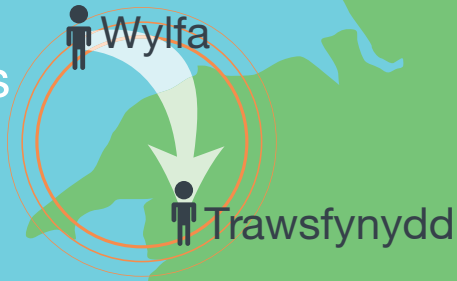
To deliver NDA's mission we need to ensure capability and capacity. We will achieve this by:

Building on infrastructure investments (*page 8-9*)

Working in partnership to support skills development (*page 10*)

Building on targeted interventions (*page 12-14*)

14 employees  
transferred  
70 miles



30 employees  
transferred  
10 miles



## Case Study

# Magnox Ltd Transition Framework

Magnox Ltd, the Site Licence Company operating 12 NDA sites, explores opportunities for the redeployment of people.

They look at opportunities within both organisations across the NDA's estate and outside of the estate, within the wider supply chain.

### Challenge:

Some skills are scarce and many organisations compete to recruit the same talented people. In addition, some roles will no longer be required at certain times on particular sites, but may be required at other locations.

### Solution:

A low cost approach of:

- identifying resource demands for the lifetime of the Magnox Ltd programme to indicate potential opportunities for resource transfer
- building relationships with recruiters, including the support from the Engineering Construction Industry Training Board (ECITB)

- developing mutually workable solutions where there is competition for skills in particular locations
- amending the Talent Retention Solution (TRS) system

### Benefits:

This Magnox Ltd transition framework helps:

- retain highly skilled workers within the UK nuclear and wider engineering industries
- reduce the unsettling impact of role uncertainty
- improve employees' confidence in the potential to be redeployed

Supporting **mobility** and **flexibility** in the nuclear industry - people can transfer across disciplines, geography and organisations

# Project Academy for Sellafield

A new academy for project professionals offers a range of higher education programmes focusing on project management. On Sellafield's behalf, the University of Cumbria (UoC) will provide diplomas, degrees, masters and doctorates.

This multi-million pound investment by Sellafield Ltd helps address the growing demand for project professionals, not just for the nuclear industry, but for all industries in the UK and worldwide.

## Case Study

*Photograph: workers at the Sellafield site*



### Challenge:

An analysis of project delivery professions in the estate and the supply chain highlighted an inconsistency in standards, training, education, development and practices associated with project delivery.

### Solution:

A centre of excellence for project delivery within Cumbria: the Project Academy for Sellafield

### Benefits:

- enhances existing skills and experience within Sellafield Ltd
  - provides opportunity for employees to re-skill and continue to drive the mission forward as certain skills become required less on site
  - helps position Sellafield Ltd as a leader in increasing its project management capability (and contributes to building the Centre of Nuclear Excellence (CoNE)/northern powerhouse)
  - UoC, as a Higher Education Awarding Body, can provide the highest levels of qualifications for Sellafield Ltd employees e.g. MSc.
- helps bridge the forecasted skills gap in this area
  - flexibility for some training to be delivered by sub-contractors, including:
    - Lakes College
    - Furness College
    - Centre for Leadership performance
    - 20/20 Ltd
    - Provek Ltd
    - University of Manchester

Along with others, we have invested heavily in **infrastructure projects** across the UK, so that educational provision is available for the people that we need to be our future employees across the estate.

Working with the National College for Nuclear, we want to grow even more high quality professional development programmes.

## Infrastructure

**Engineering, Technology & Energy Centre (ETEC), Thurso, Caithness:** Operated by North Highlands College, ETEC delivers engineering programmes and modern apprenticeships in partnership with employers.

Funded by: NDA, Highland Council, Scottish Funding Council (SFC) and European funds



**Energy Coast Construction Skills Centre (Lakes College), Lillyhall, West Cumbria:** A state-of-the-art teaching space with workshops for up to 600 students.

Funded by: Britain's Energy Coast (BEC), NDA and Lakes College



**National College for Nuclear (NCfN), Cumbria and Somerset:** The two hubs will provide learning facilities, offering high-tech specialist training to meet the needs of UK nuclear industry employers.

Funded by: A partnership between Government and nuclear employers, led by EDF Energy and Sellafield Ltd



**Energy Skills Centre, Bridgwater, Somerset:** Operated by Bridgwater College, it offers engineering subjects as well as science, low carbon and nuclear-related education and training. It has an engineering workshop, a welding and fabrication workshop, and science lab.

Funded by: NDA, EDF Energy and National Skills Academy Nuclear (NSAN)





## New facilities for developing new skills...

## ...creating a competent workforce for our mission



**Energus, Lillyhall, West Cumbria:** Fully utilised by GENII, University of Cumbria and the UTC.

Delivers nuclear focused and sustainable energy higher education, apprenticeships, leadership and management events/courses.

Funded by: NDA, Development Agencies, Sellafield Ltd, the National Skills Academy for Nuclear and European funds



**Dalton Cumbrian Facility, Westlakes Science and Technology Park, West Cumbria:** Occupied by research teams in radiation science and decommissioning engineering from the Dalton Nuclear Institute (UoM). Works closely with the National Nuclear Laboratory, plus other companies such as Areva and Rolls Royce, and other universities to carry out nuclear-related research and postgraduate studies.

Funded by: NDA and the University of Manchester



**University Technical Colleges (UTCs), Workington, Cumbria, Warrington, Cheshire and Berkeley Green, Glos.:** Each UTC is designed to provide innovative technical and vocationally-focused education and training.

Berkeley Green UTC will specialise in advanced manufacturing and digital technologies, including cyber security.

Funded by: NDA, Highland Council, Skills Funding Council and European funds



**Energy Centre, Coleg Menai, Grŵp Llandrillo:** Offers specialised courses for young people to train to work in the energy industry, as part of the Anglesey Energy Island™ Programme.

Funded by: NDA, the Welsh Assembly and Coleg Menai

## Collaborative working



## Ongoing work as part of our **People Strategy**

We need to work together to attract, develop, retain and transfer people.

Where there is value in a co-ordinated solution for the NDA's estate, we commission and fund initiatives centrally.

Elsewhere, we collaborate or encourage other organisations to take the initiative for their own skills arena.

We recognise that we cannot confront the UK-wide people and skills challenges in isolation from the rest of the nuclear industry.

A new 'Skills Operating Model', developed by leading nuclear industry employers and endorsed by government, coordinates work across the UK.

As founding members of the National Skills Strategy Group, (NSSG) we work with other industry leaders to identify and plan all that needs to be done.

Together, we will put the right infrastructure and initiatives in place over the coming years to ensure the continued success and growth of the UK nuclear industry.

## Skills Operating Model:



## Identified pinch points

Over time many existing workers across our estate will need to be reskilled. We've identified future 'pinch points' in the skills we require for our mission and the nuclear industry.

Across the nuclear industry and within decommissioning, we need to bridge skills gaps in these areas:

- Project Management, Project Controls, PMO (and Wider Project Execution)
- Safety Case Specialists
- Construction Management
- Commissioning Engineers

Specifically within nuclear decommissioning we need to bridge skills gaps in these areas:

- Health Physics/Radiological Protection – engineering/monitors
- Waste/Waste categorisation
- Quality Professional/Engineers
- Human Factors
- Higher Level Skills/Subject Matter Experts
- Chartered Status Purchasing and Supply Professionals

We are designing programmes to take qualified people and provide on-the-job experience.

## STEM in schools

STEM ambassadors from the NDA and the rest of our estate attend a huge number of events in schools, colleges and communities, such as the Big Bang Fair. These ambassadors are often sponsored by the NDA. The activities at these events demonstrate how enjoyable STEM subjects are.

## Scholarships and Bursaries

The NDA sponsors ten 'Arkwright Scholars' per year. Dynamic and talented young people with an interest in engineering often choose other professions. This scholarship nurtures and inspires young people, who have traditionally been less likely to consider careers in engineering due to economic background, gender or ethnicity.

## Apprenticeships

In line with government initiatives, we are working with others to increase the number and range of nuclear apprenticeships.

As well as being a starting point for new entrants, apprenticeship programmes are a way of upskilling our existing workforce. They provide career progression routes that are as viable as other pathways into the industry.

## Initiatives and projects

NDA and its estate employees often work on developing industry awareness in primary schools, so that science education can be illustrated with nuclear challenges and solutions.

At secondary school level, NDA contributes to Energy Foresight, a programme aimed at increasing awareness of energy sources.

Within NDA's Supply Chain, vouchers have allowed SME's to access the National Skills Academy for Nuclear (NSAN) triple bar induction programme. This helps overcome barriers to working on NDA sites. In addition, NDA sponsored a Supply Chain Apprenticeship Programme (SCAN) managed on behalf of industry via NSAN. This scheme supported over 200 additional apprentices across NDA's estate.

## ***nucleargraduates* programme**

A new generation of engineers, scientists and business professionals are needed to guide this exciting industry into the future. That's why we brought leading businesses and world-class organisations together to create the *nucleargraduates* scheme – one of the most comprehensive graduate programmes ever seen in the energy industry.



Many different opportunities are available for both new recruits and the existing workforce. NDA and its estate support the development of:

- various vocational and academic programmes that lead to a wide range of qualifications, especially in science, technology, engineering and maths (STEM)
- programmes for experienced employees of organisations already involved in decommissioning
- programmes for re-skilling people within the industry for new roles
- initiatives to support people from other industries, considering how their skills might transfer to nuclear decommissioning

### Diversity

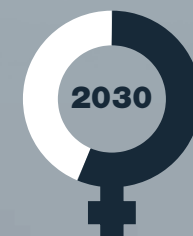
The nuclear industry needs to reach out to the widest possible talent pool to meet its changing workforce profile. We need to remove the career barriers for under-represented groups.

This means taking account of people's differences in backgrounds, knowledge, skills, needs and experiences. It is also about using those differences to create a cohesive workforce.

Currently, fewer than 25% of skilled nuclear workers are female. The aim is to increase this to 40% by 2030.



By 2030 the amount of **women** working in the nuclear industry needs to double from **20% to 40%**



We are committed to working with others to increase the equality, diversity and inclusion of our nuclear workforce.

We encourage inspiring individuals from varied backgrounds continue to showcase their own careers to highlight what is possible.

Photograph: student Naomi Harrison studied Level 2 Motor Vehicle at the Energy Coast Construction Skills Centre, Cumbria

## Higher level skills

It is vital that we maintain the high-level research skills drawn on by government, industry and regulators.

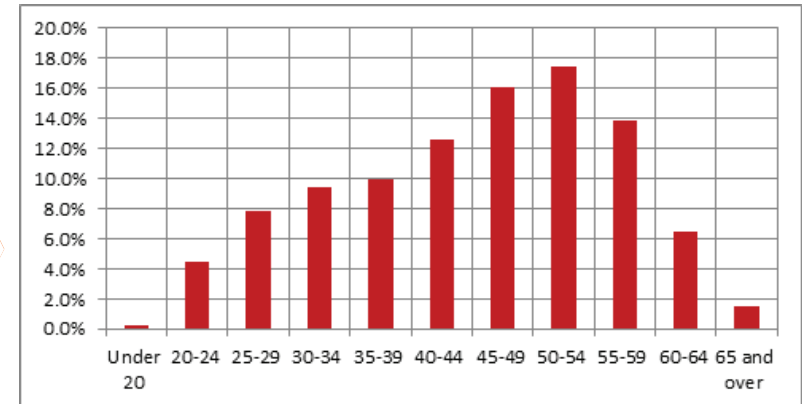
Through both our People Strategy and Research and Development (R&D) Strategy, we support the design of foundation and masters degree-level courses, as well as sponsoring PhD research relevant to our mission.

## Knowledge Management

As people retire, it is vital that they share their vast experience of nuclear decommissioning with those who are continuing to deliver our mission.

In addition, across our 17 sites, the workforce continues to develop technical expertise and innovative techniques. When people share this know-how across our estate, sites can benefit from improved approaches to challenges.

## Initiatives and projects



Over the next 15 years at least 34% of the workforce will reach pensionable age

Our R&D strategy focuses on ensuring the right level of technical skills are available. Technical facilities like the Dalton Cumbrian Facility linked to The University of Manchester, support the development of these skills.

The UK's broader nuclear programme also needs expertise in decommissioning. Much of the UK's knowledge relating to spent fuel management and reprocessing, waste management and decommissioning lies within the NDA's estate.

To support this, we are putting various measures in place to transfer capability through our information governance and knowledge management programmes.

# Mobilising our workforce with **transferrable skills**

Much of the infrastructure is now in place to deliver various skills development programmes.

Going forward, we need to gain maximum benefit from these facilities. We will help them to deliver high quality education and training programmes that meet the needs of the workplace.

Our focus is on prioritising areas where we know there is a current or forecasted skills shortage.

The mobility and flexibility of our workforce is essential if we are to meet the peaks and troughs of the resource requirements in different locations.

To help people transfer across disciplines and organisations in the nuclear industry, we will continue working with others to develop:

- common ways of describing skills and competency requirements
- standardised high quality development programmes

Working with the National College for Nuclear, we will develop externally recognised qualifications that can be:

- aligned to apprenticeships
- part of higher education programmes
- shorter stand-alone modules, which form part of internal development programmes

In the long term, this will encourage mobility amongst our workforce and the wider nuclear industry.

## Redeployment: minimising the consequences of decommissioning on local areas

We are working with nuclear new build to exploit opportunities for local people to be involved in the nuclear industry.

For areas of the UK where continued nuclear employment is not possible, we support innovative skills interventions in line with our socio-economic strategy.

We work with local organisations and partnerships around our sites, including the Centre of Nuclear Excellence (CONE) in Cumbria, and Energy Island in Anglesey, to ensure co-ordination and integration of the respective goals of each organisation.

Helping people reskill for alternative industries maintains sustainable economies within local communities.

# Dealing with the past... ...protecting the future.

## Find out more...

- Nuclear Decommissioning Authority, NDA's Strategy, 2016
- HM Government, Sustaining Our Nuclear Skills, 2015
- HM Government, Nuclear Industrial Strategy: The UK's Nuclear Future, 2013
- Nuclear Skills Strategy Group, Nuclear Skills Strategic Plan
- Nuclear Decommissioning Authority, NDA Information Governance Strategy, 2015
- Women In Nuclear (WiN) section of Nuclear Institute website
- Cogent skills website
- National Academy for Nuclear (NSAN) website
- Nuclear Training Network website
- nucleargraduates website
- Annual call for applications for Phd bursaries on NDA website

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