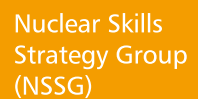


# UK ARC Programme

## *Purpose & Priorities*



# Foreword

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## “What is the UK Alpha Resilience and Capability Programme?”

The UK Alpha Resilience and Capability (ARC) Programme is a proactive, long-term collaboration between the UK government, nuclear industry and wider nuclear sector.

ARC seeks to identify targeted projects and investments in specialist nuclear skills, expertise and facilities to sustain and enhance the UK’s world-leading Alpha capabilities.

Our Programme Vision...

“To sustain and enhance our world leading Alpha capabilities so the UK nuclear industry is ready to enact critical national Programmes”

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# Purpose

*The UK ARC Programme is a proactive collaboration, bringing together experts from the ARC partner organisations to identify synergies and opportunities to address challenges in our Alpha areas.*

The UK is a global centre of nuclear excellence with a world-renowned skills base built from a pioneering history of civil nuclear and defence programmes.

This has created a legacy of facilities and materials at nuclear sites throughout the country, including the largest store of separated plutonium in the world.

The safe and secure management of Special Nuclear Materials - the collective term for uranium, plutonium and americium - is nationally important work requiring specialist skills, knowledge and infrastructure.

Within this skills base are some specialist skills, referred to as Alpha capabilities, that exist across a range of public and private organisations.

ARC aims to ensure the UK maintains and builds on these capabilities to deliver current and future programmes and remain a global leader.

Each organisation retains responsibility for delivering its Alpha programmes.

ARC supports them by identifying and helping to resolve capability gaps, enabling collaboration, developing ideas and implementing the change. This enhances long-term resilience.

**In doing so, the UK nuclear sector faces the key challenges of:**

- An ageing workforce
- The need for more effective coordination across the sector
- The need to maintain capability through variations in demand
- Planned future missions that will increase demand
- The need to support the plutonium disposition strategy

The UK Alpha Resilience and Capability (ARC) programme seeks to address these challenges and maximise the opportunities they present, to support current and future missions.



**The UK houses the largest separated store of plutonium in the world, some 140Te**



**1/3 to 1/2 of the UK's Alpha operations and maintenance workforce will retire in the next 5-10 years**



**Demand for Alpha capabilities is set to increase significantly in the next 10-20 years**



**Demand for Alpha remediation (clean up) capabilities is also set to increase nationally and internationally**



**It can take 2 years or more to become qualified and experienced in Alpha skills**



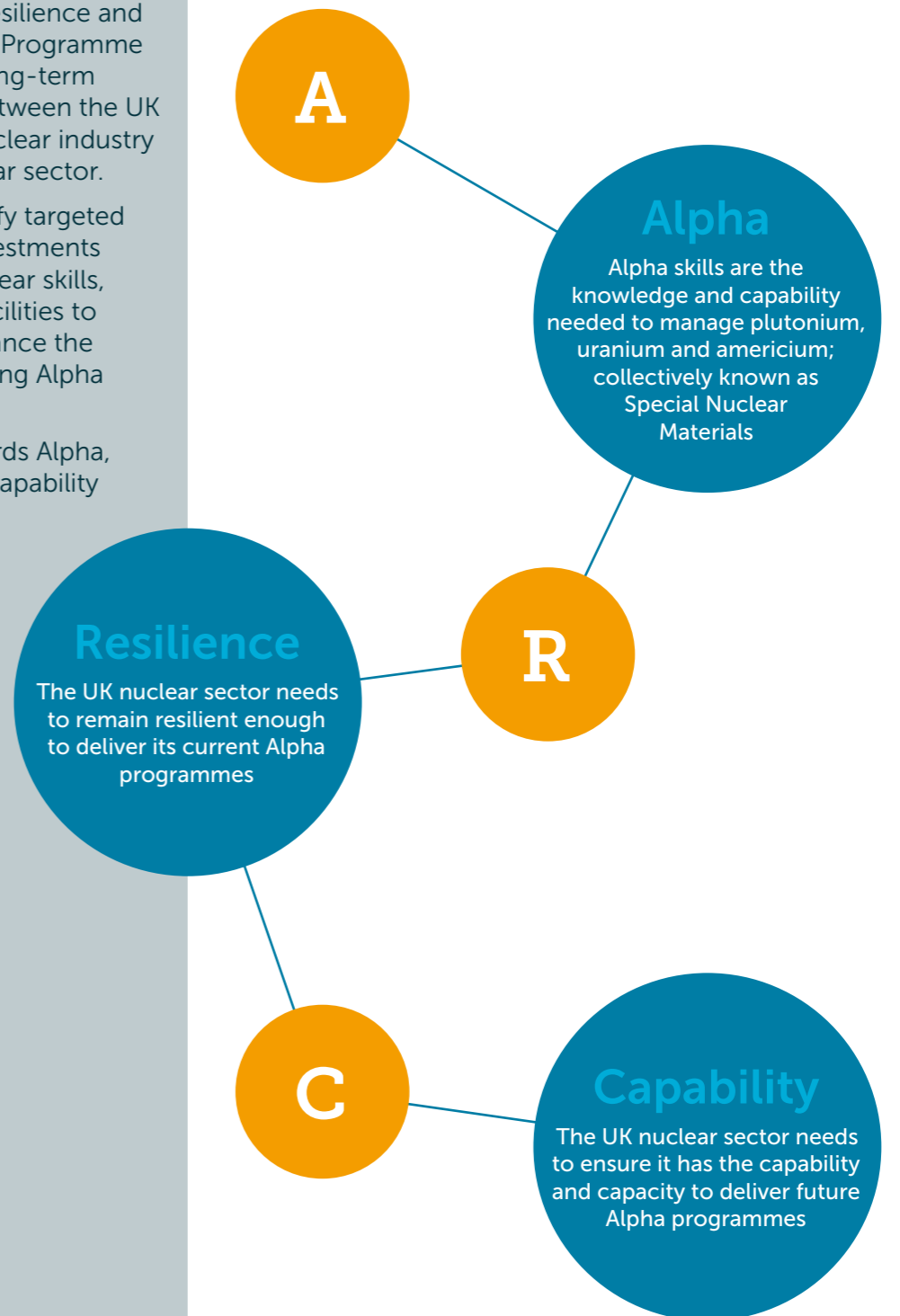
**The UK is a global centre of nuclear excellence with a world-renowned skills base**

## Programme


The UK Alpha Resilience and Capability (ARC) Programme is a proactive, long-term collaboration between the UK government, nuclear industry and wider nuclear sector.

It seeks to identify targeted projects and investments in specialist nuclear skills, expertise and facilities to sustain and enhance the UK's world-leading Alpha capabilities.



What do the words Alpha, Resilience and Capability mean?



# Partners



Department for Business, Energy & Industrial Strategy

Sellafield Ltd

Nuclear Skills Strategy Group (NSSG)

**BEIS**  
(Department for Business, Energy & Industrial Strategy)

Government department responsible for policy

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**NDA**  
(Nuclear Decommissioning Authority)

Responsible for implementing government policy across UK nuclear sites

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**SL**  
(Sellafield Ltd)

Responsible for the safe and secure operation and clean-up of the Sellafield nuclear site

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**NSSG**  
(Nuclear Skills Strategy Group)

Employer-led organisation for the UK nuclear sector and government

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**AWE**  
(Atomic Weapons Establishment)

Supporting the nuclear defence and security of the UK

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**NNL**  
(National Nuclear Laboratory)

Nuclear services provider owned and operated by UK government

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**DSRL**  
(Dounreay Site Restoration Limited)

Working together to responsibly deliver the Dounreay programme effectively and efficiently

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**ONR**  
(Office for Nuclear Regulation)

Responsible for regulation of nuclear safety and security across the UK

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**The safe and secure management of Special Nuclear Materials is nationally important work requiring specialist skills, knowledge and infrastructure**

# Priorities

The programme has three objectives:

1

## Current Missions

Ensuring the delivery of existing Alpha programmes by balancing supply and demand, encouraging innovation and increasing productivity.

*Examples include management of the UK's plutonium inventory at Sellafield and the UK defence programme.*

2

## Future Missions

Ensuring the UK has the capability and capacity to launch future Alpha programmes by prioritising sectors and mobilising resources.

*Examples include the launch of an enhanced Alpha remediation programme and delivery of the UK Government's plutonium disposition strategy.*

3

## Global Leadership

Ensuring the UK maintains its position as a global leader in the delivery and management of complex, large-scale Alpha programmes.

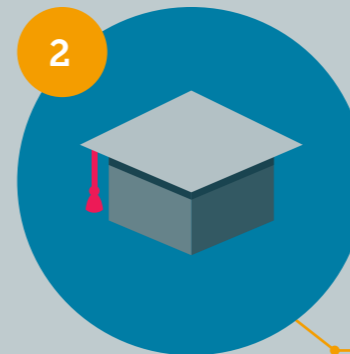
There are five areas of focus:

1



The supply of people to meet demand

2



Training, education & experience

3



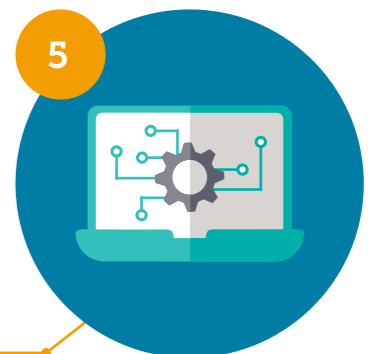
Research & development

4



Subject matter expertise

5



Digital infrastructure

# Context

## THE ARC STORY

The UK has one of the largest inventories of Alpha material in the world.

It results from many decades of work in the defence and civil nuclear industries.

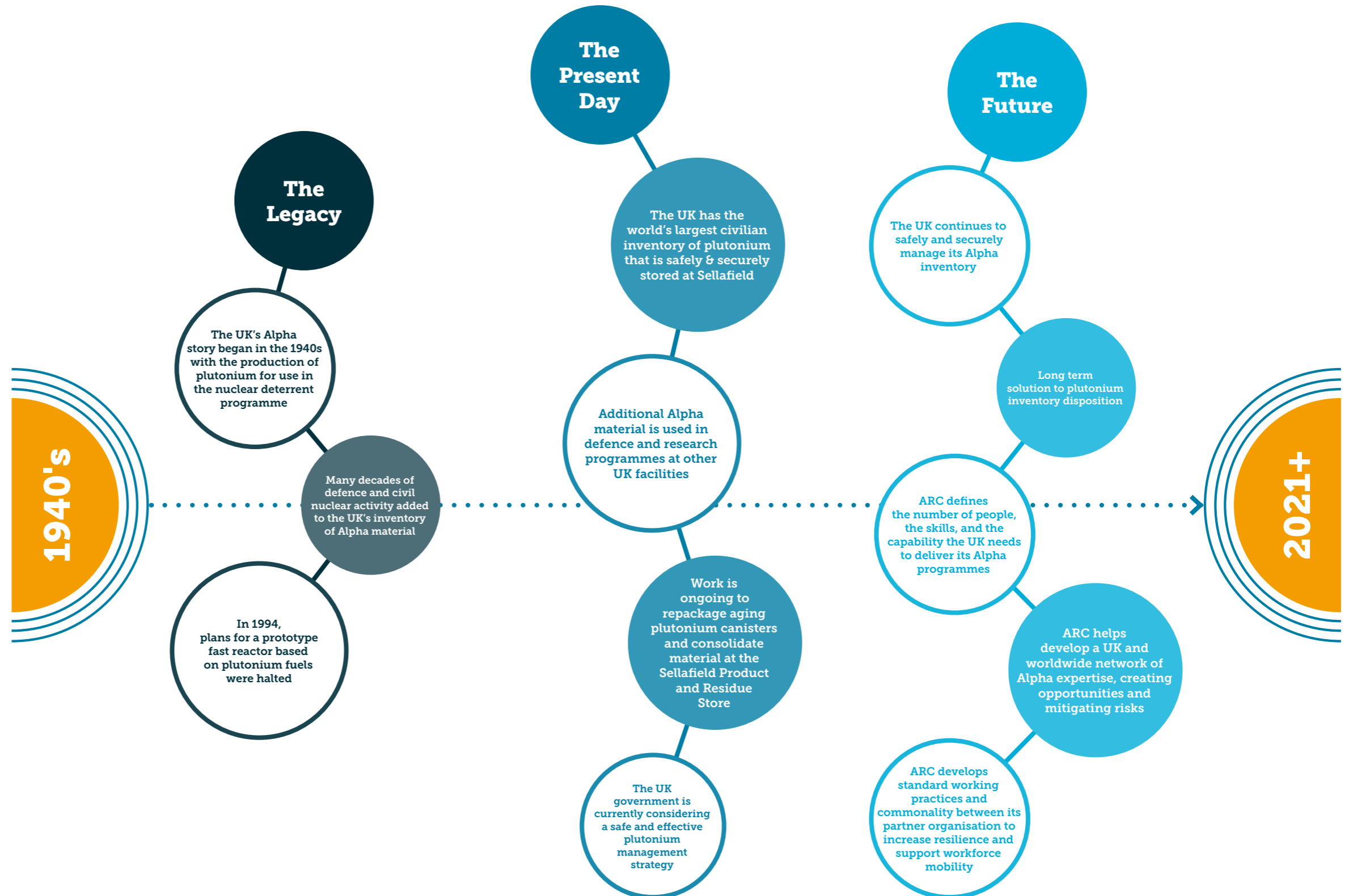
Making sure this material is safe and secure now and in the future is a huge challenge.

It means having access to the right skills, knowledge, capacity, and capability at the right time.

The UK ARC programme has been designed to meet this challenge.

It is a multi-decade endeavour driven by a unique public and private sector partnership.

It will learn from history, secure the present, and create opportunity for the future.





# Workstreams

The programme is made up of a series of workstreams...



## Capability & Capacity

**Aims to define Alpha skills and knowledge and understand the supply and demand picture for the UK by:**

- Determining a baseline for Alpha skills and knowledge
- Developing a national forward plan for retraining, recruitment and mobility
- Developing a UK Alpha glove box training facility



## Technical

**Aims to establish routes to innovation and long term skills growth that will accelerate and de-risk missions by:**

- Engaging with the supply chain on 'grand challenges'
- Supporting skills incubators for researchers and SME businesses
- Addressing Alpha skills shortages and targeting technical intervention opportunities



## Engineering & Safety Case

**Aims to agree national good practice and standardise design engineering and safety case practices by:**

- Developing a national Alpha Design Good Practice Guide
- Identifying a pipeline of engineering and safety case placements and secondments
- Developing a Generic Safety Case for Alpha systems



## Information Management

**Aims to ensure that information assets are identified, protected and exploited by:**

- Understanding how information is managed throughout the sector
- Capturing current and historic information from ARC partners
- Deploying digital infrastructure and platforms to support ARC partners



## Knowledge Management

**Aims to capture and retain existing knowledge by:**

- Development of a UK ARC knowledge management strategy
- Prioritisation of higher-risk areas



## International Opportunities

**Aims to sustain UK Alpha skills as a trailblazer for bi-lateral international relationships by:**

- Maintaining the UK's presence at international forums
- Developing business and market opportunities



## Operations & Maintenance

**Aims to ensure the UK retains the skills, capability, knowledge, and equipment it needs to manage our Alpha inventory by:**

- Building a highly skilled and mobile Alpha workforce
- Inspiring the next generation
- Identifying, capturing, and sharing relevant knowledge across ARC partners



**It is vital that the UK maintains and builds upon its Alpha capabilities to ensure it can deliver its current and future Alpha programmes and remains a global leader in this field**

For further information contact: [arc.programme@sellafieldsites.com](mailto:arc.programme@sellafieldsites.com)