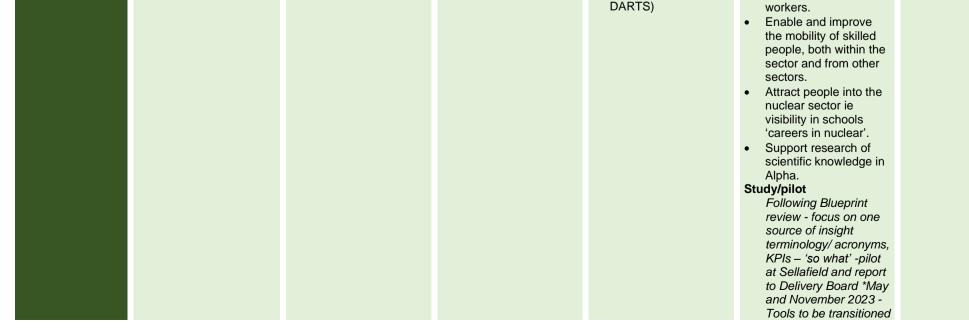
## UK ALPHA RESILIENCE AND CAPABILITY (ARC) VMOST

V6 | 6 September 2023

Problem Statement ►	The UK houses the largest stockpile of separated Plutonium (Pu) in the world (circa 140Te). It is a national imperative that the UK sustains its historic world leading capabilities in order to manage the stockpile safely and securely. This is a duty on the UK for our own national interests, as well as our international partners and owners of the material. There is a compelling case for optimising the UK Alpha Capability across the nuclear sector, to enhance the current mission delivery and ensure that the UK can launch and successfully deliver future alpha programmes. This will sustain the UK's global leadership in Pu management. (Source: ARC Programme Brief V2 Aug 2019).								
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Vision ►	We have sustained and enhanced our world-leading alpha capabilities and the UK nuclear industry is ready to enact critical national programmes.								
VISION	(Source: ARC Programme Brief V2 Aug 2019)								
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Mission ►	The UK ARC programme is a proactive collaboration, bringing together experts from partner organisations to identify synergies and our alpha areas and to deliver improvements in these areas. (Source: purpose and priorities brochure)								
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Objectives ►	Enable UK alpha programmed and build resilience and defence in-depth.	1	Ensure that the UK has the capability and capacity to launch future alpha programmes. (Source: UK ARC business plan July 2020)				Ensure the UK maintains its power base as a leader in the delivery and management of large-sale complex alpha programmes.		
	(Source: UK ARC busine plan July 2020)	Source: UK ARC business		,		(Source: UK ARC business plan July 2020)			
	$\checkmark$	1 1		$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		
Strategies ►	Ensure the UK's niche alph expertise is sustained for specialist professions (including engineering desi safety case & security) for future generations. (Source: UK ARC business plan July 2020)	gn, attracting, recruiting a profession alpha workforce.	supply and demand and un attracting, recruiting and for retaining a professional mobile alpha workforce. (S <i>(Source: UK ARC business plan</i> )		programmes are vith the digital infrastructure ble and resilient alpha NRC business plan July	Ensure the UK is recognised as a global hub for alpha research, development and innovation. (Source: UK ARC business plan July 2020)	Ensure the UK is recognised as a global alpha capability hub for training, experience and education. (Source: UK ARC business plan July 2020)		
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Tactics ►	<ul> <li>Engineering and Safety Case</li> <li>Develop and publish good practice in engineering design and safety case across the sector, gaining synergies from introducing increased standardization, where appropriate.</li> <li>Develop library of reference material to document current state resources eg Generic Glove Box Fault Assessment.</li> <li>Standardisation of Glove Box Design – 3D CAD Drawings</li> <li>Develop standards - Alpha Decommissioning</li> <li>Develop long-term pipeline for engineering and safety case placement and secondments.</li> </ul>	<ul> <li>International Opportunities (CoP)</li> <li>Sustain UK alpha as a trailblazer for bi- lateral relationships and maintain the UK's presence at intermediate forums, providing business and market opportunities.</li> <li>National and International engagement – build on existing and develop new stakeholder networks relevant to alpha sector to ensure appropriate leveraging of existing arrangements.</li> <li>Develop UK ARC international opportunities assessment report.</li> <li>International Engagement – establish as a CoP.</li> </ul>	<ul> <li>with a for risk are:</li> <li>working the cap digitilisatindexatilisatindexatilisatindexatilis knowled and accompany of the cap of the</li></ul>	on ent knowledge, bcus on high- a; through practices and ture, ation and ion of dge in a simple cessible c ganisation dge ement for e cross-sector nowledge ement. ent processes rpin gathering ention of cross- cnowledge. ent hisms to e cross- sector of knowledge	<ul> <li>Technical</li> <li>Establish routes to innovation that will accelerate and de-risk missions using broader research programmes, engagement with the supply chain on 'grand challenges' and 'incubators' for researchers and SME business.</li> <li>Develop an approach for publication of technical and innovation in alpha sector.</li> <li>Academia – supporting programmes/ material / PhDs established/ access to facilities/ develop opportunities for the technical and engineering environments.</li> <li>Technical and engineering development of a pipleline/ SME incubator – CoPs</li> <li>SME development (eg</li> </ul>	<ul> <li>People</li> <li>Develop and implement National Alpha Training and Education Standards.</li> <li>Enable improvements to the availability and capability of UK Alpha training facilities.</li> <li>Grow National Communities of Practice to identify gaps, synergies and opportunities – aim to support adoption and implementation of training and education standards.</li> <li>Provide the framework to support the growth of Alpha Subject Matter Experts to replace those retiring.</li> <li>Demonstrate collaboration with employers and existing groups to address the sector skills challenge of meeting the demand for Alpha Missions.</li> <li>Provide a process that enables organisations to identify their Alpha</li> </ul>	<ul> <li>Collaboration</li> <li>NDA and EY review: Chief Executive Officer drivers</li> <li>Competition vs collaboration</li> <li>Safety</li> <li>Strategic Long-term focus/ confidence across civil/military</li> </ul>		



					to the People workstream.	
Deliverables ►	<ul> <li>Engineering and Safety Case</li> <li>Alpha Standards (Engineering and Safety) – national good practice standards.</li> <li>Glove Box Design Standardisation (five Glove Boxes) – Alpha Design 3D CAD Drawings for three stand glove box designs.</li> <li>Generic Glove Box Fault Assessment – (E-Library of reference material).</li> <li>Alpha Decommissioning standards – Design and Operations</li> </ul>	<ul> <li>International Opportunities – CoP</li> <li>International and communication CoP</li> <li>UK ARC international opportunities assessment report.</li> </ul>	<ul> <li>Knowledge and Information Management</li> <li>Knowledge and Information Management Framework (Implement processes to underpin the gathering and retention of cross- sector knowledge).</li> <li>Communities of Practice (CoPs) – Effective Communities - Strengthen and embed processes for: identifying requirement for CoP; and establishing CoP – self-sustaining alpha.</li> </ul>	<ul> <li>material.</li> <li>Communities of Practice - Technical</li> </ul>	<ul> <li>People</li> <li>Glove Box Training Facility</li> <li>Glove Box training standards and training programmes</li> <li>Developing Experts (secondary schools)</li> <li>Following study/pilot: tools to be transitioned to the People workstream ie LEXICON with KPIs.</li> </ul>	Collaboration (under development - not yet approved) • COE Containment • Mobility of material and people
enefits anagement Plan	Benefit Management Plan: Benefits 7,8,9,10	Benefit Management Plan: Benefits 14	Benefits Management Plan: Benefits 11,12,13	Benefits Management Plan: Benefits 4,5,6	Benefits Management Plan: Benefits 1, 2, 3	Benefits to be confirmed.
	Improve standards, time cost, resources, effectiveness to meet Alpha Programmes.	The benefits of this CoP include building a more focused understanding of what is happening in Alpha on a global level, through sharing our collaboration with other organisations. The goals of the CoP are to act as a communication hub for alignment between ARC partners to co-ordinate on conferences and share LfE.	Advanced and specialist Alpha knowledge management will provide for the safe and effective delivery of Alpha Programmes.	As a result of this project, Alpha opportunities will be mapped into career pathways across partner organisations to increase pipeline of Alpha workers. The benefit being tracked is the investment to secure employed expertise within the partner organisations	Build the capability and capacity to launch future programmes through the use of a dedicated Glove Box Training Facility. We expect to provide training to UK and International organisations. We expect to hold 36 training sessions per year, with 8 people per session. ARC transitioning ownership to SL. Source of information for KPI - OPMS (Sellafield Management System)	
	This project will achieve xx % digitisation for three glove box designs. Collaborative working civil and defence.		Implementing Communities of Practice (CoPs) will provide the benefit of SMEs and a wealth of experience.	This guidance will provide for the safe and secure handling of actinides in universities. Provides material owners with confidence universities are handling materials with appropriate safety and security risk assessments in place.	Build the capability and capacity to launch future programmes. The Glove Box User Training Standard and Operations and Maintenance Training Programmes, will provide a broader understanding of alpha facilities and topics, improving safety by preparing glove box users to be more plant ready, whilst reducing the time needed for on-the- job training. To determine whether the enhanced training	

benefit of comparing how long it takes for Alpha workers (Groups A&B) to become fully operational. The ultimate objective is to determine whether the enhanced training programme reduces the time taken to train on a facility - if the maximum is set at less than the old training on sitethen the natural measure is to identify whether this is being met through the actual length of time on the GBTF.

This project will achieve identification of generic glove box faults and learning.	This project will provide a comprehensive current information asset portal for Alpha programmes and ARC.	Cross-organisational group of Subject Matter Experts for the Technical Workstream.	This project will help to feed the pipeline for nuclear workers by providing an understanding of the industry through secondary education curricula. (Source of information for KPI - report received by SL from Developing Experts)	
This project will improve safety and improve time to deliver alpha programmes by approximately 1/3.				