

# **Nuclear Decommissioning Research Centre (NDRC)**

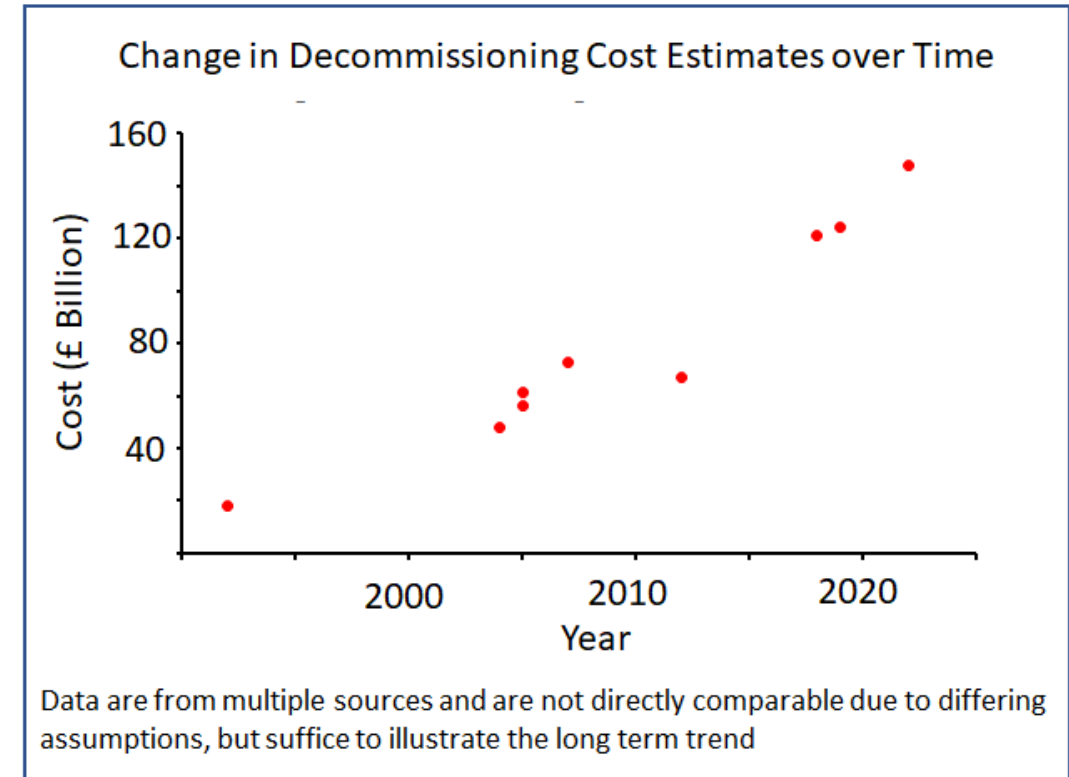
**Update September 2023**

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# Background

- Featured in the 2020 UKRI Infrastructure Roadmap
- Neil Hyatt (then Sheffield) initiated NDRC in late 2020
- Neil passed NDRC on to Francis Livens in early 2022
- Scope revisited during 2022 to reflect, among other things, adoption of the 'One NDA' model
- Extensive engagement with stakeholders, especially mission owners
- Focus on 'decades and billions'- reverse the historic trend in decommissioning cost (right)



# Timeline

Facilitated workshop, Birchwood, 10 Feb 2023.

Open invitation to academia *via* the Imperial College Nuclear Academics mailing list.

78 delegates- 33 from 13 different Universities, 24 from National Labs, 14 from NDA and OpCos

Statement of Need ( $\approx$  Outline Case) submitted to EPSRC/UKRI March 2023

Indicative Funding Request £ 170 M

Pre-Proposal end 2023

Full Proposal mid-2025

Funds released 2026

All still at very early stages of development and LOTS of unanswered questions (Comments Log)

Continuing to progress while EPSRC considers SoN (feedback due imminently)

- Ad hoc Steering Group (NDA, NNL, NPL, NAMRC, academia) convened May 2023 to refine scope, progress organisational and operational matters- business cases, governance.....
- SG has identified need for Active Demonstrations, replacing proposed investment in NNL Central Lab

# What Should NDRC Do?

Conduct underpinning research and innovation in two focus areas

- Materials- characterisation, processing, manufacturing, evolution, reactions, behaviour
- Measurement, AI, Sensors, Data, Digital (to complement existing Robotics developments)

Facilitate active demonstrations

Demonstrate applicability and direct the outcomes to priorities in decommissioning

- Graphite reactor decommissioning
- Environmental end points
- Fuel cycle plant decommissioning

Provide wider impacts

- Socioeconomic benefits
- Skills development

# What Does NDRC Look Like?

A network of six facilities:

two focussed on ***Discovery***

- Non-radioactive materials, chemistry, engineering, manufacturing (a redevelopment of NNL Workington, also housing an NAMRC presence)
- AI, Data, Sensors, Measurement ('RAICo Plus', an academic campus built around the RAICo robotics facility in Whitehaven, also housing an NPL presence;

one focussed on ***Active Demonstration*** (scope and location to be confirmed)

three focussed on ***Deployment***

- Graphite reactor decommissioning (location NW Wales)
- Fuel cycle decommissioning (location N Scotland)
- Environmental End Points (location W Cumbria)

# May 18th

*ad hoc* 'Steering Group'- NDA, National Labs, National Research Centres, academia (approx. 12 people)

Four themes, derived from Comments Log

- Definition of NDRC- Role and Scope
- Governance
  - Internal Governance (How does NDRC actually work?)
  - Stakeholder Governance (What is needed to make the NDRC case to its key stakeholders\*?)
- Funding & Operating Models (Funding- National Nuclear User Facility? Operating- Henry Royce Institute?)
- Ways of Working

Other things to think about- How to manage project going forwards?

External Comms (website, mailing list, Nuclear Academics.....)

Wider engagement (Regulators, non-nuclear, commercial organisations)

\* Key stakeholders are taken to be organisations expected to commit resource (capital, programme, people....) to NDRC. Those identified so far are EPSRC/UKRI, NDA, Magnox, Dounreay, Nuclear Waste Services, Sellafield, NNL, NAMRC, NPL, UKAEA, University of Manchester. This is NOT an exclusive list.

# Business Case Structure

## 'NDRC Business Case'

Synergies, Added Value, Benefits to HMG & DAs, Overall Schedule, NDRC Governance, NDRC Financial Model, NDRC Operating Model



### 'Facility Business Case' 1

Define Purpose

RD&I,  
Skills,  
Socioeconomic

Identify Stakeholders-  
roles & responsibilities

Scope/Capability

Timing

Ownership Arrangements

Operating Arrangements

Financial Arrangements

RIBA2 Design

Co-funding

### 'Facility Business Case' 2

2

### 'Facility Business Case' 3

3

### 'Facility Business Case' 4

4

### 'Facility Business Case' 5

5

### 'Facility Business Case' 6

6

### Eventually map these on to the Green Book Model:

- The Strategic Case.
- The Socio-Economic Case.
- The Commercial Case.
- The Financial Case.
- The Management Case.

## ***Ad hoc SG- Decisions and Actions***

- Develop skeleton business cases
- Identify sources of programme funding
- Develop governance model (based on Royce)
- Comms- occasional email to Feb workshop attendees; socialise as opportunities arise (SW Nuclear Hub, Bangor Univ); present to Nuclear Academics in September
- Establish permanent Steering Group