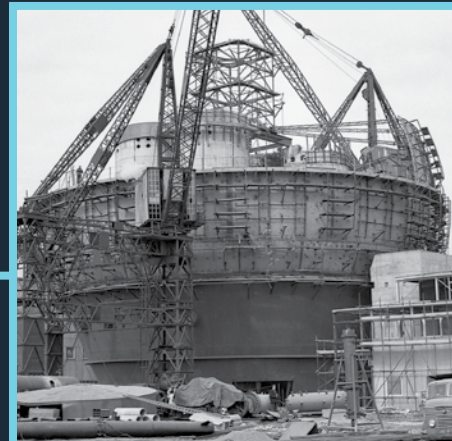


# INSIGHT

into nuclear decommissioning

- 1947** — Start of pioneering research at Sellafield
- 1956** — First Magnox reactor, Calder Hall, opened
- 1957** — Windscale fire
- 1962** — First Advanced Gas-Cooled Reactor Windscale
- 1971** — Last Magnox reactor commissioned: Wylfa
- 1994** — THORP began reprocessing spent fuel
- 2005** — NDA set up to tackle nuclear legacy
- 2006** — First UK strategy for decommissioning published
- 2011** — Windscale Advanced Gas-Cooled Reactor decommissioned
- 2012** — New plans approved to deliver accelerated clean-up at Dounreay
- 2013** — Highly radioactive liquid metal from the Dounreay Fast Reactor destroyed
- 2015** — Retrieval of sludge and fuel from Sellafield legacy ponds commenced
- 2012-15** — Chapelcross, Dungeness A and Sizewell A complete defueling
- 2015** — Wylfa ceases generation
- 2018-20** — THORP and Magnox reprocessing completed
- 2020** — Two Magnox stations in Care & Maintenance
- 2021** — Winfrith site returned to heathland
- 2120** — Sellafield final site clearance

NDA  
**10**  
YEARS  
2005  
2015



# 2014/2015 HIGHLIGHTS



**Stephen Henwood, NDA Chairman**

“The NDA marks its 10th anniversary this year. In that time, we have developed a detailed understanding of the UK’s nuclear legacy and established a strategy that achieves progress while ensuring an acceptable cost for the taxpayers who are required to fund the bulk of the mission.

“Our understanding of what is needed continues to grow and we continue to allocate our money to best effect. After the early years, when our focus was on understanding the scope of the mission and how to best secure progress, the NDA has developed into a uniquely

knowledgeable organisation, harnessing the right blend of skills and expertise to make an important contribution to the decommissioning landscape.”



**John Clarke, NDA Chief Executive**

“This year’s most prominent development has been the decision to change the management arrangements of the Sellafield site and opt for direct NDA ownership of the Site Licence Company.

“We arrived at this significant point following many months of analysis, taking on board the advice of external advisors, and consideration of options for improvement. Extensive comparisons were also made with complex industrial activities elsewhere, not just in the nuclear field but also in the wider public and private sectors.

“We are now in the transition phase to the new arrangements which will be complete by the end of the financial year.

“We have accepted Sellafield’s latest assessment of future work as outlined in Performance Plan 14 (PP14), and are confident that this represents an improved and more realistic forecast of the programme ahead. PP14 takes account of information that is emerging as progress is made but still recognises the major uncertainties associated with the complex, long-term issues at the site. Regular revisions will be required as our understanding improves, which will lead to further changes in both estimated costs and work programmes.

“Sellafield costs feed in to the overall Nuclear Provision figure, published annually as an estimate of the future costs for decommissioning across the entire estate, projected over the anticipated timescale of more than 100 years. As reported in January, the

latest available figures have led us to estimate that the provision will rise by approximately £5 billion, based on improved understanding at Sellafield.

“Elsewhere in the NDA estate, good progress is being made at all sites. The contracts in place at Dounreay, Magnox and RSRL sites (now re-licensed into Magnox Ltd) are set to deliver revised decommissioning plans with reduced costs, saving in excess of £2 billion in the long term.

“The consolidation phase of the new Magnox contract is now firmly under way, a significant exercise that enables Cavendish Fluor Partnership to update their plans in line with developments on the sites since 2013, when their proposals were drawn up.

“The final plan will reflect any funding constraints and changes to work programmes.

“We have continued to support the supply chain at all levels, with an emphasis on our target to increase the amount of spend with Small and Medium-sized Enterprises, in line with our Action Plan, and supporting the Government’s export-focused investment arm UKTI, to encourage overseas opportunities for our suppliers.”

# Key achievements

Achievements during the year 2014/2015 include:

- Best year on record for overall safety performance at Sellafield, particularly in the conventional and nuclear areas.
- Removal of radioactive sludge from one of the most hazardous nuclear plants in Europe, Sellafield's First Generation Magnox Storage Pond (FGMSP), which dates back to the 1950s.
- More than 100 cans of fuel removed from the world's largest open-air spent fuel pond, the Pile Fuel Storage Pond at Sellafield, built in the 1940s.
- Incorporation into the Dounreay programme of significant additional scope required by the NDA to secure the transfer of nuclear materials to Sellafield.
- Delivery of all milestones at Dounreay, where the Dounreay Cavendish Partnership is now into the third year of its contract.
- Commercial income of just over £1 billion. This was achieved through electricity generation at the world's last operational Magnox plant, Wylfa, as well as through reprocessing and the management of waste and nuclear materials.
- Defuelling completed at Sizewell A ahead of its target date, removing 99% of the radioactive hazard, leaving only three Magnox plants with fuel in the reactors.
- Completion of Chapelcross site's asbestos removal project, with 3,300 tonnes of the hazardous material safely transferred off site, marking the end of Europe's largest-known asbestos strip.
- Continuing diversion of estate-generated Low Level Waste to alternative treatments, rising to 89% during the financial year.
- Record apprentice recruitment at Sellafield, taking 170 young people for on-the-job training, bringing the total to 600 across the estate.
- Greater collaboration to support R&D, including a £13 million joint investment by the NDA and other Government bodies for a broad range of nuclear technology.
- NDA net running costs, at £37 million a year, now lower than when the organisation was established in 2005, representing just over 1% of total estate spend.

## Contents

2-3	Highlights of 2014/2015
4-5	Review of NDA's first 10 years
6-7	The Sellafield complex
8	Magnox, the legacy
9	Pioneering research sites
10	Progress in Scotland
11	Management of Low Level Waste
12	The skills agenda
13	Approach to R&D
14	Focus on suppliers
15	Community socio-economic support

If you have any comments, please contact the editor Deborah Ward on 01925 832280 or [deborah.ward@nda.gov.uk](mailto:deborah.ward@nda.gov.uk)

© Nuclear Decommissioning Authority 2015. Some images appear courtesy of site licence companies. Every effort is taken to ensure the accuracy of material or images produced or used by the NDA. However, the NDA cannot guarantee that the images shown will always be current, accurate or complete and does not warrant or endorse the accuracy or completeness of the images. 06/15 2k



# 10 years of progress

## Getting a grip on the legacy

The UK was at the forefront of developing nuclear power in the decades following World War II.

Initially the UK was seeking a nuclear deterrent amid the threat of the Cold War, and then adapted the technology to produce electricity for the nation.

Since 1946, scientists and engineers have developed and operated experimental reactors, commercial reactors, reprocessing plants, fuel manufacture and handling plants, waste management and storage facilities but little thought was given to how they would be decommissioned once they became redundant.

Ten years ago, it became the NDA's responsibility to address the consequences of this pioneering legacy.

That means disposing safely of used fuel and radioactive waste and ensuring the sites are returned to a re-usable state.

This mission represents the largest environmental restoration programme in Europe. A total restructure of the UK's decommissioning sector, bringing a UK-wide overview and introducing global private-sector expertise.

The challenge is huge, and a decade later, we have made major progress in dealing with it. We now have a strategy and plans that cover our 17 sites and the materials and wastes contained within.

We have established a thriving nuclear decommissioning supply chain. We are driving innovation through our Research and Development programme, working with community partners to leave a sustainable legacy.

But there is more than 100 years' worth of work remaining before we can claim: "mission accomplished".



## Progress by numbers

- 17 sites, 18,000 workforce and 4000 supply companies
- More than £10 billion of income from the sale of land and other assets, electricity generation and reprocessing
- Overhead expenditure in the estate reduced by more than 25%, a saving of £450 million
- 23% of expenditure now delivered by Small and Medium-sized Enterprises (SME)
- Savings of more than £195 million over last five years from collaborative procurement across the estate.
- More than £70 million directly invested in R&D
- Magnox reprocessing 95.6% complete
- 25% of land at Harwell delicensed and available for development
- More than 200 graduates have been through the award-winning nuclear training programme since it started in 2008
- 1,100 apprentices across the estate since 2005
- £15 million saved through a scheme to transfer assets between sites

## Developed a UK-wide strategy



Our first mission was to understand the estate we inherited and assess the progress already being made.

Decommissioning was under way but some sites were more advanced than others.

A lack of overall co-ordination meant expertise was developed in isolation and progress was haphazard.

Separate organisations were working on their own priorities with different approaches and individual budgets.

Given the requirement to be prudent with public funds, another critical task was to allocate priorities for spending.

We engaged with a wide range of organisations and individuals to develop a comprehensive strategy that would bring a coherent approach to future activities.

What emerged was the UK's first-ever nuclear decommissioning strategy, giving real direction, demanding targets and funding discipline.

We are currently developing our third iteration of our strategy which is due to be published in 2016.

Our strategy brings all NDA sites together in a UK context, while focusing on the most urgent tasks and allocating our budget in the most cost-effective way.

Among the successes are a UK strategy for dealing with solid low level radioactive waste which has dramatically increased recycling rates and reduced costs, as well as a new approach to the storage of intermediate level waste which reduces the number of stores.



# Sellafield

The most complex nuclear site in the world

6sq km of land housing more than a thousand buildings

No single site in the world has made more of a contribution to the nuclear industry than Sellafield.

It was home to the UK's first commercial sized nuclear reactors – the Windscale Pile Reactors - built to provide material for the nuclear deterrent amid the gathering storm of the Cold War in the late 1940s.

In the 1950s, the world's first-ever commercial-sized nuclear power station – Calder Hall - was opened on the site, providing electricity for homes and businesses.

And in the second half of the 20th century, Sellafield opened up the UK nuclear industry to the world, providing spent fuel reprocessing services and manufacturing new fuel.

This world-leading innovation provided breakthroughs the whole world has benefited from but it also left a complex legacy for future generations to deal with.

Within a footprint of just two square miles, Sellafield has more than 1,000 buildings. At least 100 of these contain nuclear material. In addition to the Windscale Piles and Calder Hall, there's a further reactor, the experimental Windscale Advanced Gas-Cooled Reactor (WAGR), as well as the Sellafield MOX Plant, two fuel reprocessing plants, the world's largest open-air nuclear fuel pond and the largest civilian stockpile of separated plutonium in the world.

It was this complex picture of ageing and inter-related plants that the NDA inherited in 2005.

The NDA played a leading role, along with regulators, in highlighting the urgent importance of dealing with Sellafield's

legacy ponds and silos – the two open-air fuel ponds and two waste storage silos that supported the early operations on the site.

This greater focus on the high hazard areas of the site has been reflected by record levels of investment in the site, with its annual budget reaching approximately £2 billion in 2015/16. About one third of this is invested directly in the legacy ponds and silos programmes.

Significant progress has been made in these programmes. Large quantities of fuel and equipment are being removed from one of the ponds on a routine basis to be repackaged and stored in modern facilities. In the other pond, quantities of sludge, which have built up over time, are now being pumped out into a new holding facility for the first time.





**Pile Fuel Storage Pond retrievals**



**Sellafield Product and Residues Store constructed**



**Windscale AGR decommissioned**

In 2011, a major milestone was achieved with the completion of the WAGR decommissioning, making it the first-ever commercial-scale nuclear reactor to be fully decommissioned.

There are now more than 150 projects under way at Sellafield, 11 of which are classed as major construction projects. It is already the UK's biggest building site and will become Europe's biggest during the next decade.

Much of this recent progress has been driven by the 'decommissioning mind-set' which encourages a pragmatic approach to decommissioning, solving problems at the workface and driving forward on multiple work fronts.

In 2011, the first-ever fully underpinned, publicly available decommissioning plan for the site was published. The plan was updated in 2015 and provides our most accurate view to date of the work

required to complete the clean-up of the site over more than 100 years.

While there are still many uncertainties in the Sellafield programme, the clearest picture yet is now emerging of how to fully decommission this vastly complex site.

As priorities have changed on the site, so has the contractual approach the NDA uses to manage it.

In 2015 it was announced that the management model would be altered, with NDA taking ownership of the site licence company and Sellafield Ltd acquiring a strategic partner to assist with delivery.

Pete Lutwyche, Sellafield Programme Director for the NDA, said: "The last 10 years at Sellafield have been a period of discovery and progress for the NDA.

"We now know more about the scale and complexity of the challenge than we ever have.

"Great progress has been made in those 10 years, particularly in the high hazard areas – our number one national priority – but there is still huge amounts of work to be done.

"Over the next 10 years we will transition into a new management model at the site, with Sellafield Ltd becoming a subsidiary of the NDA, which will give us greater control and help us embed the improvements we need in order to progress the mission."



# Magnox

More than £1 billion of additional income from extended generation at Wylfa and Oldbury.



Chapelcross has just completed the largest asbestos strip in Europe

## Magnox reactors were pioneered in the UK.

Eleven were built in the UK, 10 of which have now closed and are at varying stages of clean-up. Only one remains operational: Wylfa, on Anglesey.

Real decommissioning progress is taking place at all 10 sites, from Hunterston A in Scotland to Dungeness A on the south coast.

This progress is now being driven by the 'lead and learn' approach, developed and encouraged with NDA support – and the key principle of the NDA's Magnox Optimised Decommissioning Programme.

This includes selecting two sites where decommissioning techniques are trialled comprehensively before being rolled out to the other sites. The programme has reduced costs by more than £1.8 billion

and will speed up the decommissioning of all 10 sites of a combined total of more than 30 years. The process is also gathering expertise to be shared across the rest of the NDA estate.

Individual site achievements include:

- An additional five years of electricity generation at Wylfa, producing £785 million of extra revenue. Oldbury also continued for four years beyond its original closure date, producing an estimated £350 million of revenue.
- Defuelling completed at Chapelcross, Dungeness A and Sizewell A, with Oldbury due to complete by early 2016. This leaves only the operating power station at Wylfa to start the process of removing all its spent fuel, which represents 99% of the radioactive hazard on a nuclear site.

- Completion of the largest-known asbestos strip in Europe: removal of 3,300 tonnes at Chapelcross.
- Demolition of the turbine halls at Bradwell and Dungeness A.
- Closure of the two Berkeley reactors and entry into the passive 'Safestore' state, where they will remain until final site clearance in around 60 years' time.
- More than 4,500 tonnes of redundant boilers removed from Berkeley for recycling.
- Only one storage pond, at Oldbury, now contains spent fuel. Following the removal of spent fuel, contaminated water has been fully drained from Bradwell, Hunterston A, Trawsfynydd and Berkeley. Hinkley A ponds are almost empty while Chapelcross has drained one pond.



# Research Sites Restoration Limited



Oldbury is well on target to complete its defueling programme



Bradwell ponds cleaned out



Sizewell control room closes



25% Harwell delicensed

In the pioneering days of the early nuclear industry, much of the research was done at two sites: Harwell and Winfrith.

Both sites housed various experimental reactors and both are now being decommissioned.

Since the NDA inherited these sites in 2005, closure dates have been brought forward by a combined 32 years with potential cost savings of £500 million.

Winfrith, when restored to heathland, will be the first site in the NDA estate to be returned to its natural state.

A third of the site has now been restored, with only two experimental reactors still to be demolished.

At Harwell, a quarter of the site has now been released from all nuclear regulations with 1.8 million sq ft of buildings and research facilities demolished.

For this portion of the Harwell site, the NDA's mission is complete and the land is available for development by the adjacent science park. Decommissioning of all redundant buildings is scheduled to be complete by 2027.



# Dounreay



**Dounreay Low Level Waste Facility begins operations**

Dounreay was the UK's centre of fast reactor research from 1955 to 1994.

Scientists experimented with plutonium, uranium and other metals to generate electricity.

Decommissioning started in the 1990s and the site is now Scotland's largest nuclear clean-up project.

Since coming under the leadership of the NDA in 2005, major decommissioning milestones have been achieved including the completion of a project to destroy highly hazardous sodium-potassium coolant (NaK) used in the site's fast reactor – a culmination of 20 years' work.

Another early success was the decommissioning of the experimental criticality lab which carried out experiments with plutonium and uranium liquids in the 1950s-60s. Once believed too dirty to ever clean up, its radioactive legacy was allowed to decay for 30 years and after an eight-year programme, the facility was demolished in 2009.

Only in 2008 was it possible to walk through the whole building without respiratory protection.

More recently, two waste vaults have been completed that will hold up to 175,000 cubic metres of low level radioactive material that will arise as the site is decommissioned.

The material will include paper, rags, tools, glass, concrete, clothing, scrap metal and demolition rubble. A maximum of six vaults will be built, each the size of a football pitch sunk to a depth of 20 metres.

In 2012, the site began to move more than 70 tonnes of historic nuclear material, including both unirradiated and irradiated material, to Sellafield which has facilities for treatment and storage. The material has been at Dounreay for many decades and the transfer requires a complex programme of repackaging in purpose-built high-tech facilities.



**Destruction of NaK at Dounreay**



# LLWR



The Low Level Waste Repository in Cumbria

## Capenhurst



The fuel-enrichment site at Capenhurst, built in the 1950s, was transferred to the neighbouring nuclear operator, Urenco, in 2012, following a lengthy programme of decommissioning, clean-up and land restoration.

The site was split in two during the early 1990s, with the original diffusion plant continuing to decommission and the enrichment business developing separately.

A huge increase in recycling has followed the NDA's publication of a national strategy dealing with waste containing low levels of radioactivity.

Most Low Level Waste (LLW) generated by the nuclear industry and other sectors was historically consigned to the UK's repository in Cumbria.

However, the 2010 UK Strategy for the Management of Solid Low Level Radioactive Waste from the Nuclear Industry placed greater emphasis on waste prevention, re-use and recycling, in line with Government policy.

Its success has led to new, more sustainable ways of dealing with LLW, including re-use, metal recycling, disposal to specially licensed landfill sites and combustion. LLW accounts for 90% of the total bulk of UK radioactive waste but only a tiny fraction of the radioactivity associated with higher activity material.

Over the last two years, the amount of LLW diverted away from the repository has reached almost 90%, saving more

than £67 million in 2013/14 alone and extending the life of the repository.

The 2010 strategy has proved to be extremely successful in encouraging the development of alternative treatments and, therefore, in helping to preserve space at the Low Level Waste Repository (LLWR).

LLWR Ltd provides a brokering service to all sectors of industry that generate LLW (including defence and non-nuclear industries such as educational, medical and research establishments), enabling customers to opt for alternative treatments and dramatically changing the way LLW is managed across the UK.

## Springfields



The NDA completed the transfer, in 2010, of fuel-manufacturing plant at Springfields, to the private sector, enabling the operator to invest in the site and develop long-term employment opportunities. The lease arrangement also provides a future revenue stream for the NDA.

# Skills

Highly specialised skills are vital to decommissioning. With at least a third of the UK's nuclear workforce set to retire in the next decade or so, the NDA is committed to developing new technical expertise that will enable a future workforce to continue the mission and contribute to the wider economy.

Working closely with public and private-sector partners, support worth £multi-millions has been invested in training schemes at all levels: from apprenticeships to post-graduate research, as well as training facilities around the UK.

The NDA launched, for example, the *nucleargraduates* scheme in 2008, a two-year training programme for future industry leaders which is supported by 20 nuclear partners and has garnered multiple awards.

At the apprentice level, meanwhile, a total of 1,165 young people have been trained since 2005, or are undergoing training, across the estate.

At the largest site, Sellafield, a record 170 apprentices were recruited in 2014, a figure that will be exceeded by the September 2015 intake of an additional 200 apprentices.

In 2005, 10% of apprentices were female, a percentage which has steadily increased, reaching today's ratio of 27%, more than five times the UK average of 5% in industrial sectors.

Sellafield is also one of the partners in rolling out the Government's pioneering degree-level apprenticeships.

Surplus land and facilities adjacent to the Berkeley site have been transferred to South Gloucestershire and Stroud College for development of a University Technical College (UTC) focused on science and engineering.

Other facilities supported by the NDA include Cumbria's nuclear training centre Energus, the Construction Skills Centre in Cumbria, the Engineering Skills Centre at North Highlands College in Scotland, the Energy Skills Centre at Bridgwater College in Somerset, the Energy Centre at Coleg Menai and the Coleg Meirion Dwyfor CaMDA Engineering Skills Centre in Dolgellau, Wales.



**Skills training is vital for the whole nuclear industry**

Meanwhile, along with The University of Manchester, the NDA is also a joint investor in the £20 million world-leading research facility, the Dalton Cumbrian

Facility (DCF), which offers pioneering academic research into radiation science and nuclear engineering decommissioning.



R&D  
investment  
totals around  
£90 million  
each year



Dalton Cumbrian Facility

## Research & Development

Research and Development (R&D) plays a critical role in solving the complex, often unique challenges that have accumulated at the NDA's sites over the decades. Progress depends on developing a clear understanding of the problems, finding the right solutions and ensuring the cost to taxpayers is acceptable.

Over the last five years, the NDA has spent, on average, around £90 million a year on R&D, largely channelled through the sites and focused on individual on-the-ground technical problems.

In addition, the NDA invests approximately £5 million a year directly on projects that help to influence the UK-wide strategy, deliver innovation across multiple sites and develop the vital technical skills that will be needed in future decades. Among the technologies supported are remotely deployed devices to map radiation, novel materials for ILW immobilisation, laser-cutting for nuclear decommissioning and innovative methods to analyse waste in-situ.

Increasingly, the NDA collaborates with partner research organisations to leverage additional funding and

maximise the impact of its investments. Such collaboration can more than double the funding available for projects.

Following a successful £18 million collaboration in 2012, the NDA has more recently contributed to a £13 million collaborative programme to support a broad range of R&D covering all aspects of nuclear, including new build, current operations and decommissioning. The funds are being provided by the Government's Innovate UK (formerly the Technology Strategy Board), the Department of Energy and Climate Change (DECC) and the NDA.

The NDA investment has supported eight projects worth between £300,000 and £1 million. Projects include novel techniques for analysing contaminated concrete and the development of robotic

devices for waste characterisation and retrieval. Many of these involve collaboration between academia, sites and private-sector businesses, with some specific opportunities to encourage involvement from Small to Medium-sized Enterprises (SMEs).

With a focus on developing future expertise, the NDA also provides wide-ranging support at post-graduate research level. This includes an annual £500,000 NDA bursary for PhD projects, together with partnership funding for other PhD research.

The NDA also co-funds PhD projects with other partners, while a significant level of guidance and expertise is committed to various post-graduate research programmes.

## Supply chain

NDA sites have a vastly experienced workforce, numbering around 18,000 staff across 17 sites, whose commitment is vital to achieving progress. Alongside the full-time employees are almost 4,000 suppliers, ranging from large multinational companies to small-scale entrepreneurial businesses providing highly specialised services.

Europe's largest event for the supply chain attracting more than 1,000 visitors



Business delegates at the supply chain event

Since the NDA was created 10 years ago, sites have spent a cumulative total of more than £12 billion with suppliers. On an annual basis, the spend has been steadily increasing and now stands at £1.7 billion each year, representing more than half of the estate's annual budget.

To ensure the supply chain continues to flourish, the NDA, together with the Site Licence Companies and subsidiaries, has introduced a series of measures to ensure contract opportunities are visible for all suppliers. In recent years, the emphasis has been on both smaller businesses and collaborative procurement.

In 2008/2009, the NDA and SLCs established a collaborative procurement initiative, to secure savings and efficiencies through joint contracting. Growth in this area has taken spend via collaborative procurement to £417 million with a cumulative saving to the taxpayer of £195 million in 2014/2015.

Other measures include: An estate-wide action plan to support Small and Medium-sized Enterprises (SMEs); a prompt payment requirement; simplified contracting documents; posting of contract opportunities to a single electronic portal; a mentoring scheme that links SMEs with larger

organisations and aims to help small businesses navigate through the maze of decommissioning opportunities.

The most high-profile initiative is the successful NDA Estate Supply Chain Event, first launched in 2011 and attracting ever increasing numbers of visitors. Now believed to be one of the largest of its kind in Europe, the event is free of charge for delegates and exhibitors, enabling smaller businesses to avoid the kind of expenditure usually associated with trade shows and providing a full day of networking opportunities.





Communities around the NDA estate have benefited from the support of socio-economic programmes, helping to offset the eventual loss of jobs and contract work as sites begin to close down.

Scrabster Harbour in Caithness

## Socio-economics

In line with responsibilities under the Energy Act, the NDA is committed to helping local communities harness the opportunities and mitigate the inevitable long-term economic impacts of the decommissioning programme, particularly in regions where nuclear plants have historically been major employers.

Working alongside local authorities and regeneration bodies, as well as private-sector partners, these schemes have leveraged significant additional funding from external partners.

In North Wales, Caithness and southern Scotland, workforce transition schemes have offered training and guidance, opening up new career opportunities for staff at Dounreay, Chapelcross, Wylfa and Trawsfynydd, with a particular focus on high-tech, knowledge and technical skills.

Cumbria benefits from NDA investment that is channelled through various routes and has helped to establish a brand new office complex in Whitehaven,

an economic regeneration company, improved port facilities at Workington, a scheme to support innovative technology and a joint initiative to develop the region into a centre of nuclear excellence.

In northern Scotland, the NDA plays a key role in local regeneration to foster new businesses by awarding grants, providing loans and advice. NDA investment in Scrabster harbour has contributed to improvements aimed at attracting offshore industries, while upgrades at Wick harbour are also aimed at generating inward investment from renewable and energy sectors.

A new archive facility will open its doors in 2016, enabling users to access digital

and hard-copy information on the UK's nuclear industry, past and present.

Around Chapelcross, a successful regeneration partnership is helping, with NDA support, to create jobs and make new business premises available for start-up companies.

Around the remaining Magnox sites, NDA funds are channelled through the Magnox socio-economic scheme, now in operation for three years, which is creating jobs, providing loans, grants and training opportunities.

NDA  
**10**  
 YEARS  
 2005  
 2015

- 1947** — Start of pioneering research at Sellafield
- 1956** — First Magnox reactor, Calder Hall opened
- 1957** — Windscale fire
- 1962** — First Advanced Gas-Cooled Reactor Windscale
- 1971** — Last Magnox reactor commissioned: Wylfa
- 1994** — THORP began reprocessing spent fuel
- 2005** — NDA set up to tackle nuclear legacy
- 2006** — First UK strategy for decommissioning
- 2011** — Windscale Advanced Gas-Cooled Reactor decommissioned
- 2012** — New plans approved to deliver accelerated clean-up at Dounreay
- 2013** — Highly radioactive liquid metal from the Dounreay Fast Reactor destroyed
- 2015** — Retrieval of sludge and fuel from Sellafield legacy ponds commenced
- 2012-15** — Chapelcross, Dungeness A and Sizewell A complete defueling
- 2015** — Wylfa ceases generation
- 2018-20** — THORP and Magnox reprocessing completed
- 2020** — Two Magnox stations in Care & Maintenance
- 2021** — Winfrith site returned to heathland
- 2120** — Sellafield final site clearance

