

Sellafield

Issue 08

January 2018

**Safety, delivery
and value**
2017 review

**Transforming
Sellafield**
Employees take
on new roles

Safe storage

The new frontier for
nuclear manufacturing?

Maximising
our **social
impact**

Find out more
on page 52



Calder Hall

From cooling towers to
construction site

Beyond Sellafield

Forth Engineering sets its sights
on new markets

Evaporator D

From drawing board to
national asset

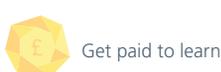
SMART APPRENTICES THRIVE HERE



As you may already know, Sellafield Ltd offers some of the very best apprenticeships available. We now need your help telling people about them.

We've got a huge range of schemes, offering apprentices the chance to build a great career, learn from recognised experts, work for the world-leader and protect the environment for generations to come.

If you know hard-working, ambitious people who could truly make their mark here, send them to careers.sellafield.co.uk where they'll learn about all the benefits and rewards. We think it will be the smartest move they'll ever make.



Editor's Letter

What comes to mind when you think of Sellafield? The site is so iconic that it is often our historic roles that come to mind first. Is it a nuclear power station? No, we haven't generated electricity since Calder Hall closed in 2003. Indeed, the footprint where the station's cooling towers once stood is now a construction site for new nuclear facilities (see page 26).

Is it a waste dump? No, but we do have an unrivalled nuclear waste capability, and our demand for safe storage is creating jobs for the next generation of nuclear workers across the country (see page 10).

Is it a reprocessing site? Actually, yes, but only for a few more years. In 2018 the Thermal Oxide Reprocessing Plant will shear its last fuel, with the Magnox Reprocessing Plant following suit in 2020. Follow our countdown to the end of reprocessing on page 34.

With the end of reprocessing our focus will shift entirely to the environmental remediation of the nuclear site. Keeping Sellafield safe and making it safer.

We are transforming our business, reskilling and redeploying our employees from reprocessing into new roles (page 63), creating an environment where supply chain companies can develop technology for us that can then be exported to other markets (see page 40), and working differently with the supply chain (see page 38 and page 54).

We are also transforming our approach to social impact, working with stakeholders to create the best possible future for our communities. The new man in charge, Gary McKeating, gives us an exclusive look at our new social impact strategy on page 52.

Not everything is changing. We have recently launched our 2018 apprenticeship programmes, with this year's intake set to follow in the footsteps of more than 10,000 apprentices who have started their career with us over the past 65 years (see our photo feature on page 79).

Our focus on cleaning up the Sellafield site also endures. It is why we are here. We made great strides in this nationally important mission in 2017 (see page 19) and are excited about the challenges ahead in 2018.

If you have any feedback on *Sellafield Magazine*, do get in touch at editor@sellafieldmagazine.com.



Behind the scenes: building waste storage boxes page 10

Our employees raised more than £75,000 for local charities in the run up to Christmas page 18

Thousands of young people have started their careers as an apprentice at Sellafield page 79

Social impact: new lead, new approach, new strategy page 52

Keep up to date with our progress at Sellafield:

 www.gov.uk/sellafieldtd

 [@SellafieldLtd](https://twitter.com/SellafieldLtd)



On the cover

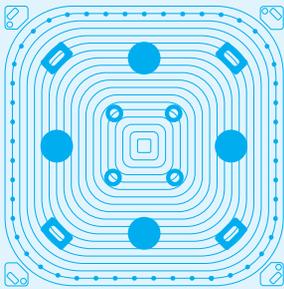
Providing safe containment for nuclear waste for centuries is going to involve the manufacture of containers on a scale never before seen in the UK. Read all about our 3m³ boxes on page 10.

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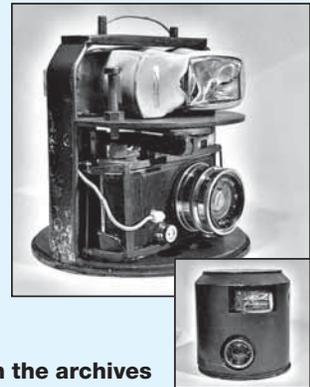
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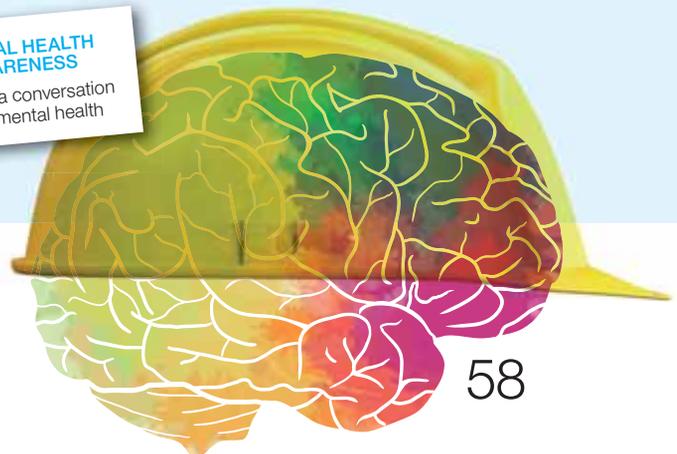
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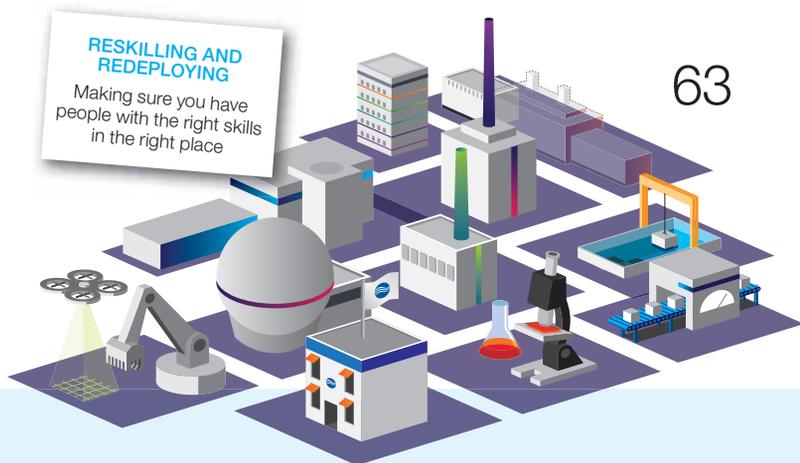
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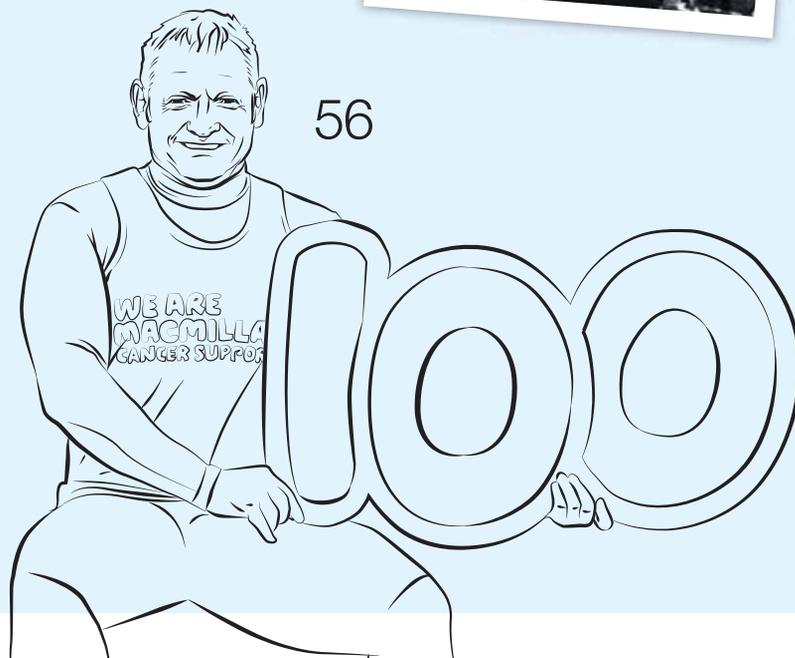
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OUR UNSUNG HEROES
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Marathon man, Gary McKee, gives his advice for facing challenges in life

WHAT IS...

Transformation

Our mission is changing, and so changing the way we work is unavoidable. Transformation is about making the very best of that change.

Sellafield is the UK's most complex nuclear site. A pioneer for the UK's nuclear industry, it has supported national defence, generated electricity for nearly half a century, developed the country's ability to manage nuclear waste safely, and brought billions of pounds of revenue into the UK through its reprocessing capability.

This year we will complete our reprocessing mission in Thorp. The mission in the Magnox Reprocessing Plant will be completed in 2020. These facilities have supported the nuclear industry nationally and internationally while generating income that has helped to offset the cost of cleaning up our site. All of the reprocessing contracts will have been completed and their job will have been done, and the clean-up of Sellafield will be our sole mission.

Transformation is first and foremost about making sure we have the right working arrangements and practices for this new focus.

By working more effectively, efficiently and flexibly, we will accelerate our programmes of work – removing hazards and reducing risks more quickly.

Key to this will be how we work with the supply chain. Through collaboration we will find innovative solutions to deliver our clean-up mission more quickly and improve value for money for taxpayers.

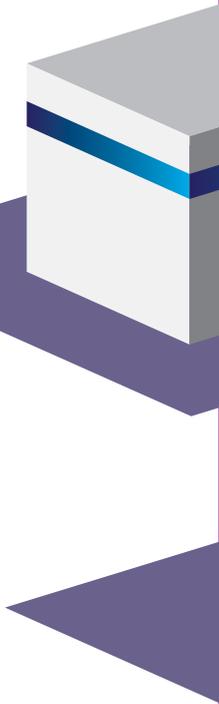
These innovations could then be sold by the supply chain to other customers and industries, helping the supply chain grow stronger and attract inward investment from the global nuclear decommissioning market into our communities.

Our funding comes

from the taxpayer, so demonstrating greater progress and value for money is essential. As the government makes choices about how to prioritise its support for all the services that rely on its funding – from hospitals and schools to national security and the nuclear industry – we want to make sure that investing money in Sellafield is an easy choice for them.

The environmental restoration of Sellafield will take decades, but that mission will eventually end. As a major employer we want to work with our communities to help create a vibrant and diverse local economy that doesn't rely solely on the site. The changes we make as we transform our organisation can help to create future choices that were never afforded to the coal-fields, the shipyards or the steelworks.

By working more effectively, efficiently and flexibly, we will accelerate our programmes of work – removing hazards and reducing risks more quickly.



WHY ARE WE TRANSFORMING SELLAFIELD?
Reprocessing is ending and our mission is changing. We need to do different things, and do things differently, to operate as an environmental clean-up company.

WHAT IS CHANGING?
The biggest changes we will see in our everyday work are:

1. Organising everything we do around value streams; Retrievals, Remediation, Spent Fuel Management, Special Nuclear Materials.
2. Developing the leadership and culture that are all about performance.
3. Improving our systems and tools to help us all work as a single business.

WHY IS TRANSFORMING SELLAFIELD SO IMPORTANT?

- We need to think and act differently to deliver our changing mission.
- New relationships and solutions will help us make Sellafield safer, sooner.
- Helping the supply chain to strengthen and diversify makes our economies and communities stronger and more sustainable.

In the next two years, reprocessing operations at Sellafield will end and the focus of our organisation will shift to environmental clean-up. This change in mission requires us to think and act differently... and it could deliver far-reaching benefits for our communities and partners as well as for the site.



Since September we have...



SUBMERGED...

a remotely operated machine in Sellafield's most hazardous nuclear waste store for the first time (see page 40).

LAUNCHED...

a scheme to encourage local and national SMEs to collaborate and deliver innovative solutions to our challenges at Sellafield (see page 54).



PUBLISHED...

our discharges and environmental monitoring annual report for 2016.

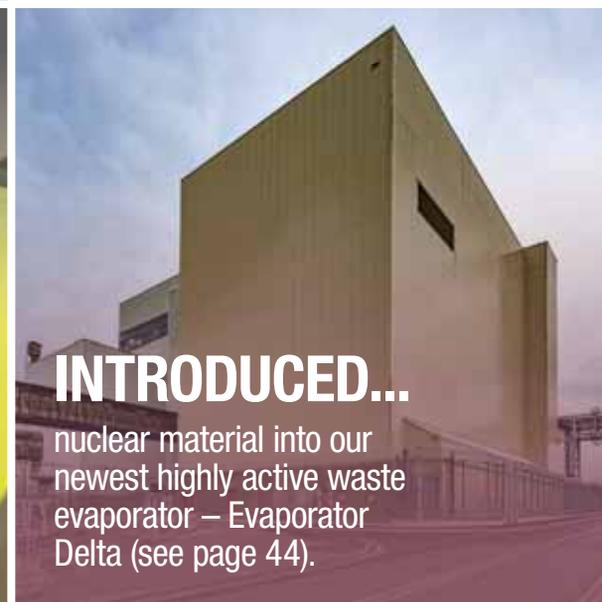
PRACTISED...

our emergency arrangements with an overnight emergency exercise.



INTRODUCED...

nuclear material into our newest highly active waste evaporator – Evaporator Delta (see page 44).



AWARDED...

a share of a multi-million pound contract to TSP Engineering and Cavendish Nuclear to produce 50-tonne waste transfer containers.

Boxing clever



CELEBRATED...

the achievements of our own women in nuclear (see page 78).



WON...

Gold Awards from the Royal Society for the Prevention of Accidents (see page 25).



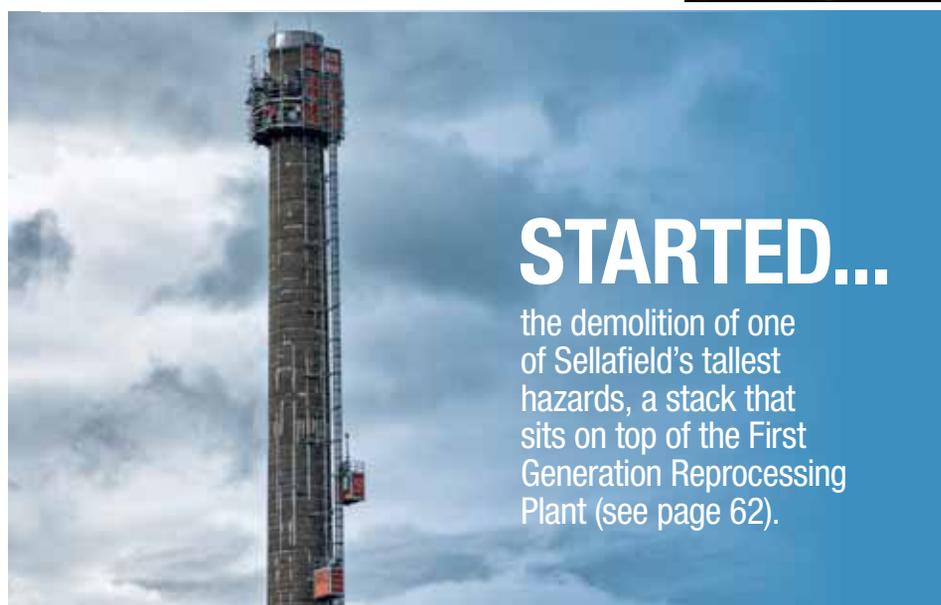
ENGAGED...

with our employees working in Thorp on their next roles once reprocessing has been completed (see page 63).



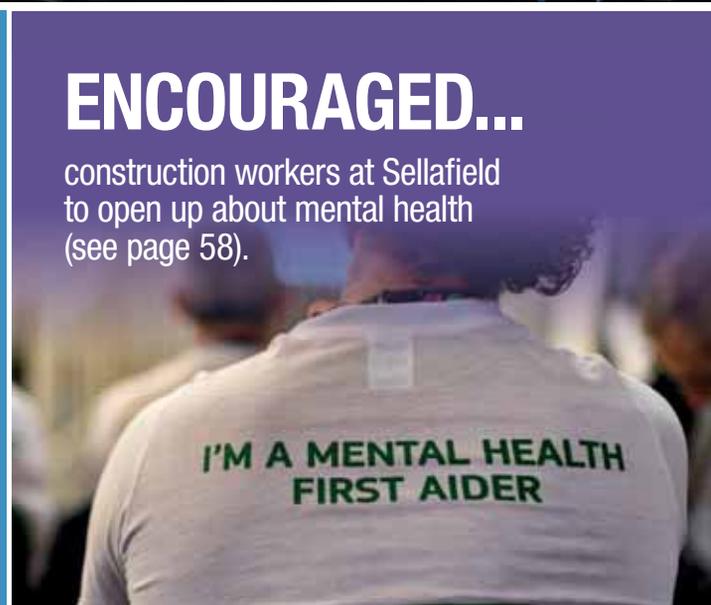
STARTED...

the demolition of one of Sellafield's tallest hazards, a stack that sits on top of the First Generation Reprocessing Plant (see page 62).



ENCOURAGED...

construction workers at Sellafield to open up about mental health (see page 58).





CUBEY DO

Our new focus entirely on environmental remediation means putting all the waste from one of the most hazardous and complicated industrial sites on the planet in safe containment for centuries to come. That's going to involve manufacturing the right nuclear waste storage containers on a scale never before seen in the UK. For advanced manufacturers ready to think outside the box in how they work with us, it's a new age of opportunity.

He wasn't quite still in short trousers, but Danny Lynch was a schoolboy when the door into the nuclear industry opened for him. Chatteris manufacturing firm Metalcraft was highlighting its apprenticeship opportunities in local Cambridgeshire schools and something about what they did caught Danny's eye. He applied there and started as an apprentice engineer in September 2015. Almost immediately, his eye was caught again.

"Sellafield had just announced that they'd awarded a big contract to us to make metal boxes, so two of our workshops were being transformed into shiny new spaces," said Danny. "We were shown videos and visuals of the products we'd be making. We could also see the new equipment being brought in: robotic welding machines, high-spec finishing tools. As soon as I saw it I knew that nuclear engineering was the future here and this was what I wanted to do."

Up in Stockton-on-Tees in the North East, one of the UK's areas of highest unemployment, Shaun Daniels (pictured, right and on previous page) is kneeling inside a steel cube inside a workshop at Darchem Engineering. Flashes of neon blue dance across the reflective glass of his welding mask as he carefully lays down a line of molten metal into the corner of the cube.

Like Danny, Shaun joined the business as an apprentice. The precision in his welding has been hard earned after four years of intensive training to get him up to the exacting standards demanded by industries such as nuclear, aeronautical, oil and gas, and medical equipment.

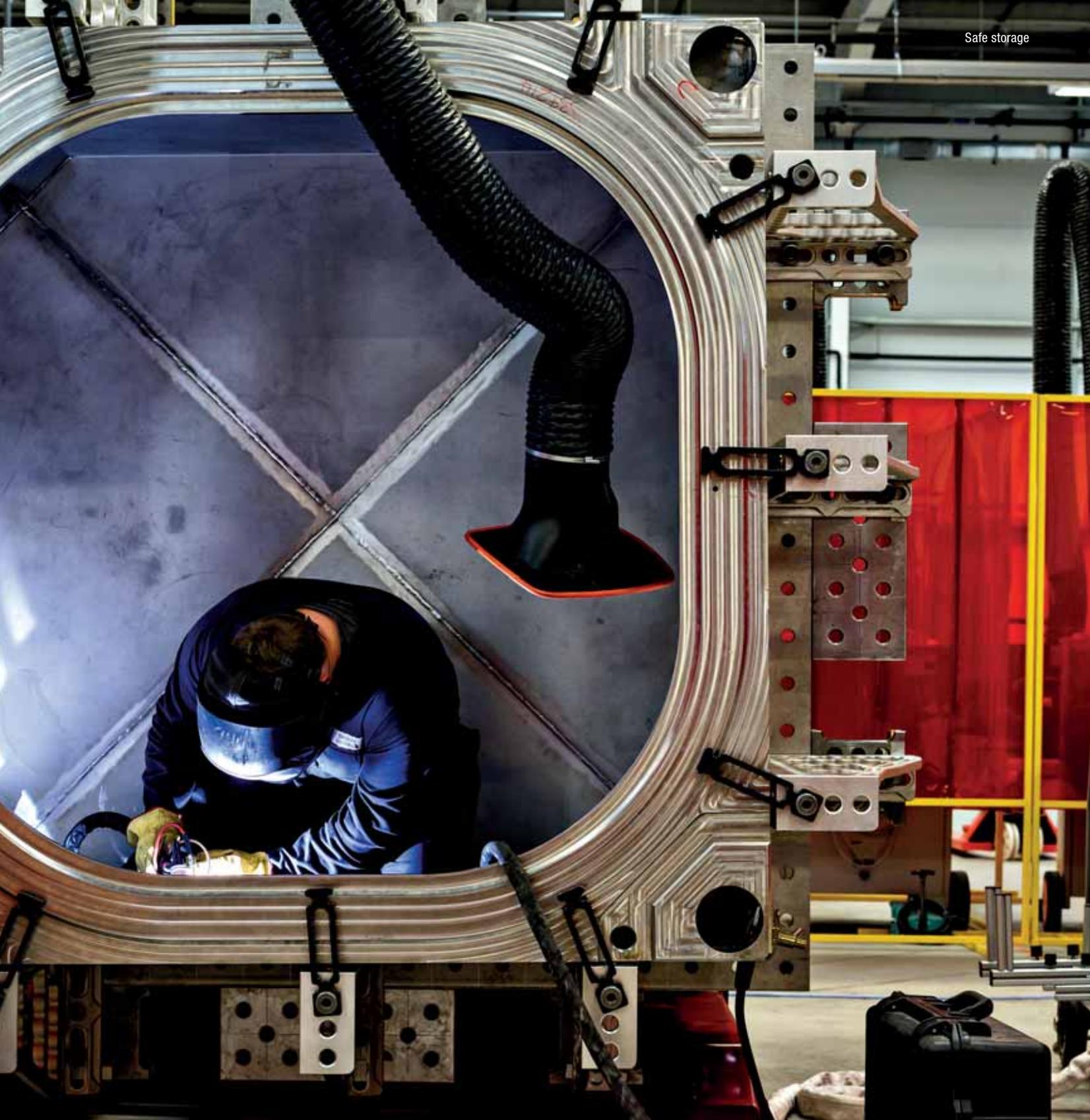
Two young men with bright, and clearly-defined, futures ahead of them.

Both Darchem Engineering and Metalcraft are making the 3m³ boxes which will hold the legacy intermediate level waste currently residing in one of the world's oldest nuclear waste stores, the Pile Fuel Cladding Silo.

Highly engineered to allow any hydrogen to be safely vented and built from super-strong Duplex steel, a total of 2,200 3m³ boxes will be needed as the contents are emptied over 10-12 years – meaning both companies will be making the 1.3-tonne, double-skinned, grouted containers at the rate of two a week from the production lines they've now established. The automatic welding machines they'll be using can turn a 3-hour weld by hand into a

**Around 2,200
3m³ boxes will
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the Pile Fuel
Cladding Silo
as its contents
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over the next 10
to 12 years.**





The production volumes are only going to get bigger.

4-minute job. The boxes are designed to last at least 500 years to see them through their journey into a Geological Disposal Facility.

The production volumes are only going to get bigger, meaning more manufacturing contracts will be going out to tender. Our highest hazard facility, the Magnox Swarf Storage Silo, is going to need an estimated 15,000 3m³ boxes to store the waste being scooped out of the legacy silo over the next two decades. The design of the box is slightly different from the Pile Fuel Cladding Silo ones, mainly because the silo boxes have a detachable inner container which is filled inside

the Silo Emptying Plant machine which reaches down and grabs the legacy waste.

The contracts to make these boxes are expected to be awarded by the end of 2019 and the current thinking is that, like the Pile Fuel Cladding Silo boxes, more than one company will be making them so we have a diverse range of suppliers. The expected throughput of the Magnox Swarf Storage Silo 3m³ boxes will be for our suppliers to be able to make 22 a month – and that's taking the nuclear industry into a whole new 'Model T' production line mentality.

(cont overleaf) >>



Thanks to an innovative new approach in how we treat and store the waste, retrievals from the Magnox Swarf Storage Silo have been accelerated. There will be a new contract competition starting in 2018 to make these 3m³ boxes, but some are already in the production pipeline so we can start getting waste out in 2019 before the big box manufacturing contracts kick in and the main facility to take the waste, the Box Encapsulation Plant which is currently under construction, opens in 2021.

Glenn McCracken, our head of portfolio for decommissioning, said: "We're on the brink of seeing waste retrievals starting from our two legacy silos, with both facilities expected to start getting the waste out in 2019. That will be a massive moment, but as well as getting it out, we need to be sure that the waste has got somewhere safe to go to. That means having enough boxes ready to be filled and having the confidence that a conveyor belt of production will be delivering a steady stream of them."

By using robotic welding machines a job which would take 3 hours by hand takes 4 minutes.



The 'conveyor belt' isn't just in the manufacturing. We have to consider where they'll be stored while empty, and the logistics of transport and delivery. As a Government-funded body, there's a lengthy and robust procurement process to adhere to (the Pile Fuel Cladding Silo box contract formally started in 2013, when a Pre-Qualification Questionnaire for manufacturers was first published). So years of planning have already gone into a process which is now really starting to ramp up.

It's not just the legacy silos which need boxes for waste. The First Generation Magnox Storage Pond needs self shielded boxes. These are whole different beasts from the 3m³ boxes, as the need for shielding sees the weight rocketing from around one and a half tonnes to 35 tonnes and they're cast as a single piece. The contract, won by Westinghouse, was to make an initial 247 self shielded boxes for storing zeolite skips. The procurement built in the potential to make 500 more as new waste is identified as suitable for storage in

which manufacturers to choose. But Sellafeld has been really innovative in building in the requirement for manufacturers to demonstrate what the social impact would be of winning a contract so that we can use that as an assessment tool too.

"We want to know that the work we're awarding is having the maximum benefit for local communities and future economic growth."

It's fair to say the award of the Pile Fuel Cladding Silo 3m³ box contracts to Darchem Engineering and Metalcraft in 2015 caused some local unrest in Cumbria. Neither company was based in Cumbria and the fact that Stockton is a defined area of local deprivation and Metalcraft a recognised Small to Medium Sized Enterprise held little sway with some locals. The importance of adhering to public contract regulations and the fact that both are now delivering what's needed to start retrievals in 2019 can be lost in the clamour for local jobs.

Manufacturing businesses in Cumbria can be competitive. Workington firm TSP Engineering won a contract in November 2017 to jointly

It's clear that there will be plenty of manufacturing opportunities and, when it comes to deciding who will be making our waste containers, not all of our eggs will come from the same basket.

them (such as u-bit bins containing fragments of fuel).

The broadfront decommissioning and remediation mission outside the legacy ponds and silos is also going to need a huge amount of waste containers (see *Boxing Clever* on page 16).

With this volume of demand and scale of public spending, we are planning very carefully about how we can use the opportunity to achieve maximum benefits in the manufacturing opportunities ahead.

"Obviously we have to take in a range of considerations when weighing up tenders for manufacturing work," said Glenn McCracken. "Schedule, quality and overall cost price are all essential factors in helping us decide

manufacture the first new transfer packages – shielded flasks opening from the bottom which will be used to transport the skips of waste out of the Magnox Swarf Storage Silo. And we are making the commitment to building in social impact as a crucial factor when assessing tenders.

It's clear that there will be plenty of manufacturing opportunities and, when it comes to deciding who will be making our waste containers, not all of our eggs will come from the same basket. A rich, diverse manufacturing supply chain able to make the same products in different ways and operating with us in different partnership approaches is good news for the nuclear industry as it spreads both the capacity and the risk. ■

BOXING CLEVER

Adopting a design from elsewhere in the NDA estate, has led to huge savings on the cost of precision engineered boxes that will be used to support the decommissioning of the whole Sellafield site.

The task of decommissioning the Sellafield site will take generations. Lots will change as we deliver that work. But one thing is certain – we will create waste and it's our job to manage it as cost-effectively as we can.

Engineered boxes won't just be used to support retrievals from our legacy silos, they will also be used to support the clean-up of the Sellafield site. As they're for a different use, in different facilities, they're of a different design to the boxes that will be used for retrievals from our silos. But they're no less important.

Broad front decommissioning will create intermediate level waste. This waste will eventually be disposed of in the country's geological disposal facility. Until this point, it will be securely stored on the Sellafield site in 3m³ boxes.

As the boxes are for long-term use, it is important that they're fit for purpose and last the distance. However, as we need thousands of them, it's also important that they're designed cost effectively. Even a small reduction in the price per box could lead to significant long term savings.

Right across the NDA estate, companies are working to decommission and clean up their sites. This creates similar waste management problems to solve. Recognising this, we've worked with Magnox Ltd, the company who are cleaning up the country's Magnox reactor sites, to share best practice.

Packaging engineers Maz Hussein and Justin Knowles worked with Ciara Walsh from our waste strategy expert on this.

Even a small reduction in the price per box could lead to significant long term savings.

Maz Hussein, explains: “As we decommission Sellafield, we’ll create intermediate level waste, and we need containers for this waste that can be used for storage and then disposal. But we’re not alone in facing this challenge. Magnox Ltd is creating similar wastes and has produced a box that can be used for this purpose.”

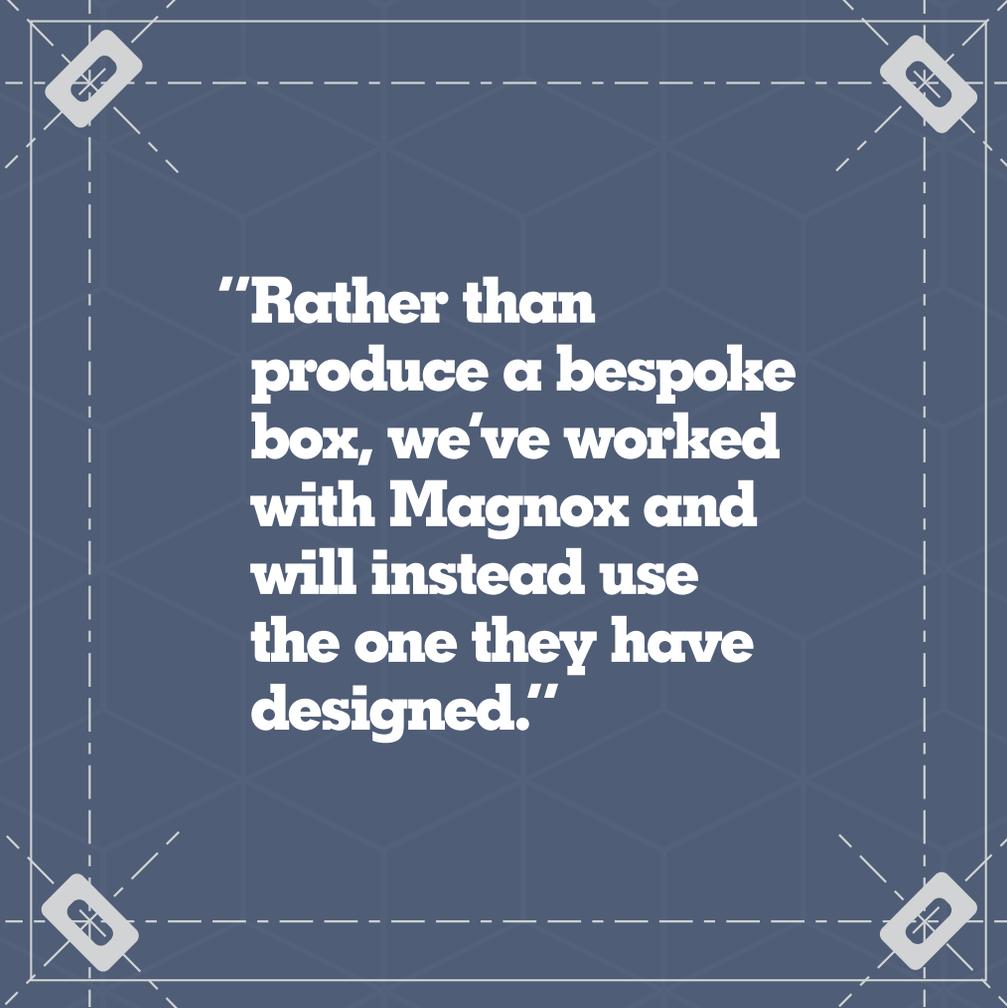
“Rather than produce a bespoke box, we’ve worked with Magnox and will instead use the one they have designed, which can be manufactured much more cost-effectively.”

The individual saving per box is significant, but when you consider we’ll need more than 43,000 of them, you realise this equates to a total saving of more than £1bn. Our waste integration manager, Ciara Walsh, said: “When we first looked at the Magnox boxes, we were

challenged whether it was even possible to get them for the price we were quoted. When it became clear this was the case, people assumed it was because they didn’t meet our quality standards. But the boxes have now been through full scrutiny and have been signed off as fit for purpose and meeting our needs.”

As the costs of waste storage and disposal will be an increasing proportion of our budget in the future, it’s important we make the right waste management decisions now. Challenging our assumptions on waste costs is an important way of doing this.

The work on these boxes was made possible thanks to collaboration across the NDA estate, and special thanks must go to our colleagues at Magnox Ltd. ■



“Rather than produce a bespoke box, we’ve worked with Magnox and will instead use the one they have designed.”



'Twas the Season

In the run up to the festive season, Santa's little helpers from across our business and supply chain came together to make sure that the holidays were a happy time for as many people as possible in our local communities.

We have been overwhelmed by the generosity of our employees and supply chain colleagues as they rallied behind our Christmas appeal in 2017.

Speaking at the launch of the Christmas appeal, head of community and development, Jamie Reed, said: "We are intrinsically linked to our communities. There is no 'us' and 'them'. When you donate toys for local children there is a good chance that they will end up in houses on your street. When you donate to a food bank it is likely that you have helped a friend of a friend to feed their families. You have the power to make a real difference to the lives of people in your community during what can be a very stressful time of the year.

"Our pledge for Christmas 2017 is to support more charities so that a broader range of people in our community benefit. We want to collect toys, money, food and household items that will help the young, the elderly, and families. I hope that everyone will dig deep and make sure that this Christmas is a happy time for one and all."

Over 6 weeks our teams donated gifts, toys, tins of food and cash to three Cumbria-based Christmas charities, Cash4Kids, North Lakes Foodbank and the shoebox appeal for the elderly and three Warrington-based charities, raising a total of £75,000 for the six charities.

WE RAISED:

- **Shoebox appeal for the elderly** – 120 shoe boxes full of gifts were delivered to elderly care home residents at Castle Mount, Bethany House, Bethshan, Dentholme and Wyndam House.
- **North Lakes Foodbank** – 800kg worth of tinned food will make up around 150 food packs for families in need.
- **Cash4Kids 'Mission Christmas'** – £6,365 cash donations and £52,217 worth of gifts will help 700 children in Cumbria. Courage the Cat's visit to site brought in an extra £2,300.
- **Home Start, Warrington** – Over 400 bedtime gifts contributed to 61 bedtime hampers for children with an additional cash donation of £323.44.
- **Room at the Inn, Warrington** – Hundreds of tins and toiletries donated to Room at the Inn. An additional £323.44 cash was raised at Daresbury and an extra £335 came from Christmas Jumper day.
- **Families and Wellbeing toy appeal** – Hundreds of gifts and pyjamas were donated for families supported by Warrington Borough Council's Neighbourhood team.



2017 may be remembered by many as the year that Donald Trump became the President of the United States, or the year that Prince Harry announced his plans to marry. But for us, 2017 was the year that we made strides in the clean-up of our highest hazard buildings and was a year where the impact of our transformation was felt by some of our employees for the first time as they moved into new roles. It was also a year where we embedded the importance of delivering a positive social impact into our biggest contracts with the supply chain.

Leading the way for equality



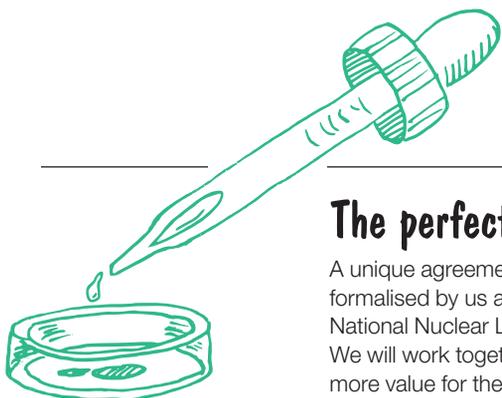
Jade White took a stand for equality and diversity when she disagreed with claims that buying pink, gender-stereotyped presents for girls puts them off getting into science-based careers. She made a video with the BBC, showing her role at Sellafield and arguing that: "Love, encouragement and reassurance of what I was good at from my parents, sister and school teachers gave me the

confidence to go for what I wanted to do. It had nothing to do with whether I liked the colour pink or not!"

JANUARY

Award-winning apprentice

Adam Sharp beat strong competition from the best apprentices in the country to be named the Advanced Level Apprentice of the Year at the National Apprentice Awards.



The perfect partnership

A unique agreement was formalised by us and the National Nuclear Laboratory. We will work together to deliver more value for the UK taxpayer.

Retrievals machine

The first **350-tonne retrievals machine** was installed in the Magnox Swarf Storage Silo, one of the world's most challenging nuclear clean-up jobs. The £100 million machine will scoop radioactive waste out of the silo.



Sludge storage

For the first time, radioactive sludge from the world's oldest nuclear storage pond was packaged safely using an existing waste plant at Sellafield. The waste was grouted and placed in modern storage.



A big speech

Our strategy and technical director, **Rebecca Weston**, was invited to talk to the House of Lords science and technology select committee. She answered questions on the future of nuclear policy, gave her view on what a sector deal for the nuclear industry might look like, and offered her thoughts on what the future of Euratom might be in a post-Brexit world.



FEBRUARY

51%
of our employees took part in a Nuclear Decommissioning Authority estate-wide survey on Equality and Diversity.

Deflector plates

We successfully removed the first two deflector plates from the inside of the Pile Fuel Cladding Silo, clearing the way for the waste retrieval machinery.



Bloomberg TV

US broadcaster Bloomberg TV broadcast a feature on how we are working with our supply chain to develop robots to help us clean-up the Sellafield site, sharing our innovations with millions of people around the world.

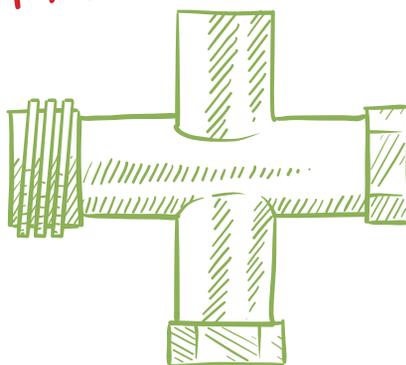


Apprentice of the Year

Jack Riley and Jason Savage were named Scientific and Technical Apprentice of the Year and Business Support Apprentice of the Year at the National Skills Academy for Nuclear (NSAN) Awards.



MARCH



Pipework isolations

After around 30 years of careful monitoring to assess and manage the risk posed by the redundant effluent and sludge pipework system network in the First Generation Magnox Storage Pond, we completed the final isolation, removing the risk of sludge or radioactive liquor leaking in or around the facility.



COMMUNITY CHOICES
DECIDING TOGETHER

19 community projects

from across Cumbria were chosen by the community to receive a share of £580,000 to help deliver their projects.

International Transgender Day

We marked International Transgender Day of Visibility to show support for employees within the transgender community, demonstrating our commitment to equality, diversity and inclusion.



Corporate documents

We published our corporate strategy and transformation plan. The strategy maintains our focus on three strategic themes – safe and secure site stewardship, demonstrable progress, and return on investment. It has a clear line of sight upwards, through the NDA Specification and NDA Strategy to the UK Energy Act.

The transformation plan focuses on the significant changes we need to make to ensure we can respond to future needs and opportunities.

APRIL



More than
130
young nuclear professionals graduated from our nationally recognised apprenticeship schemes.



Running man

One of our employees, Gary McKee, crossed the finishing line of the London Marathon with more than 50,000 other runners. But for Gary, the marathon was his 100th in 100 consecutive days. The challenge raised more than £100,000 for Macmillan Cancer Support and earned Gary the Freedom of the Borough in Copeland.



A new model

Work to introduce a new procurement model that will change how major projects are delivered at the Sellafield nuclear site over the next 20 years got under way. When it is awarded in 2018, the Programme and Project Partners model will see us procure four long-term partners, and work as the 5th partner.



JUNE

Community role

John Oliver, our waste retrievals director, was appointed to the Whitehaven Harbour Commissioners Board. He is working alongside local partners and agencies to protect and promote the heritage of the harbour and to contribute to the broader regeneration of Whitehaven and the surrounding area.



Officers supporting you

Civil Nuclear Constabulary officers based at Sellafield and other nuclear sites across the UK were deployed in support of Home Office security forces, providing additional levels of protection in civilian areas after the Government raised the national terror threat level to the highest level of "critical". Army personnel were deployed to backfill the constabulary at a number of civil nuclear sites including Sellafield.



An OBE for Dorothy

Dorothy Gradden, head of programme delivery for the legacy ponds at Sellafield, was awarded an OBE for services to the nuclear industry in the Queen's Birthday Honours list.





New website

We moved from a standalone website to become part of the GOV.UK platform, reflecting our role as a publicly funded organisation and giving us the potential to share the Sellafield story with the billions of people who use GOV.UK every year.

The 50 metre crawl

A self-climbing platform completed its 50 metre crawl to the top of the redundant Primary Separation Plant chimney stack at Sellafield. The platform will provide demolition teams with access to the stack so that it can be demolished.

JULY

AUGUST

Gold for Sellafield

We were awarded nine gold awards by the Royal Society for the Prevention of Accidents (RoSPA).



Recycling lives

A waste recycling company opened a new depot in Workington and created local jobs in West Cumbria when they won a contract to recycle metal from Sellafield. 'Recycling Lives' will also set up a food distribution charity with centres throughout Cumbria, reflecting the importance of creating a positive social impact as a result of working with us at Sellafield.

Contract opportunities

We awarded a four-year Operations Site Works framework contract to provide engineering support services to our reprocessing plants and associated facilities. The contract was won by OneAIM – a joint venture between Amec Foster Wheeler and Interserve, and has a maximum value of £160m.



Our new machine

A remotely operated machine was sent into Sellafield's most hazardous nuclear waste store for the first time. It was developed by Cumbrian firm Forth Engineering with support from the University of Manchester.



Plasma cuts

We made the first plasma cuts from the self-climbing platform to begin the removal of the cowl at the top of the stack on the First Generation Reprocessing Plant.

Sonar

Sonar technology helped us to build a profile of the sludge bed in the Sludge Packaging Plant.



SEPTEMBER



3m³ boxes

We successfully tested and validated the first 'package' that will transport waste from the Magnox Swarf Storage Silo. We also fabricated the first of three flasks to transport 3m³ boxes carrying waste from the Pile Fuel Cladding Silo.



One down five to go

The world's oldest nuclear waste store – the Pile Fuel Cladding Silo – was cut open for the first time. This was the first of six holes that will allow radioactive waste to be removed from the silo.



We successfully completed a site-wide outage where all of our operational facilities closed down for essential maintenance.

OCTOBER



100 drums

We exported the 100th drum of sludge from the Pile Fuel Storage Pond to the Waste Encapsulation Plant.

Successful completion

The first nine project management apprentices started full-time roles with us having successfully completed their four-year apprenticeship programme.



NOVEMBER

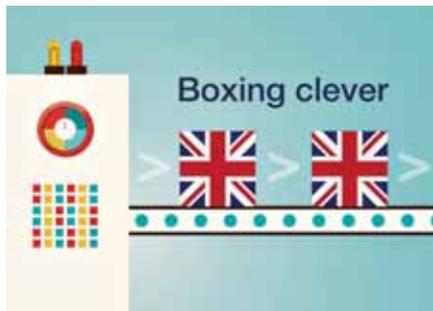
U-bit bins

The first ever export of 'u-bit bins' which are untipped, uncemented, uranium bit bins, from the First Generation Magnox Storage Pond to the Fuel Handling Plant at Sellafield was completed. The bins, which contain fuel fragments and some sludge, represent a quarter of the pond's total fuel-bearing inventory.



Evaporator Delta

The active connections to our new highly active waste evaporator – Evaporator D – were completed, meaning that the plant was ready to start final tests before active operations.



NOVEMBER

50-tonne containers

We announced that two UK companies had won a share of a multi-million pound 'container' contract that will be vital to clean-up work at Sellafield. TSP Engineering Ltd and Cavendish Nuclear will supply containers for decommissioning the Magnox Swarf Storage Silo. The 50-tonne containers will be used to move radioactive material from the silo to newly constructed treatment and storage facilities on the site.



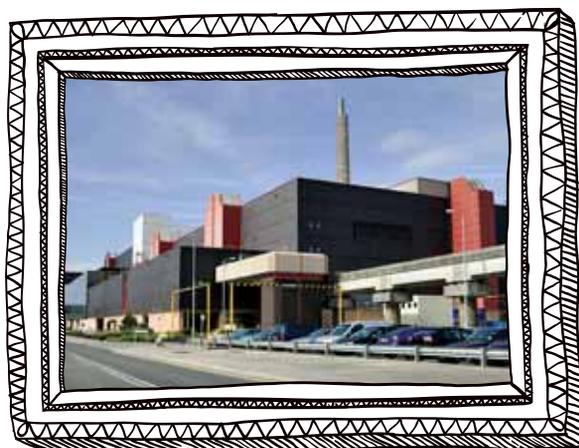
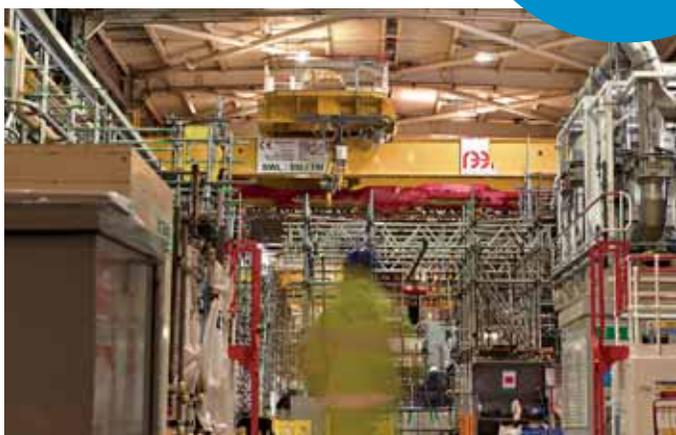
Five down one to go

We completed the removal of all of the deflector plates from inside the Pile Fuel Cladding Silo and prepared to start cutting the final hole in the side of the silo.

£10m project

We installed a new crane into the Magnox Swarf Storage Silo. The £10m project will support waste retrievals.

Congratulations to mechanical fitter **Lydia Rowell** who received a regional advanced apprentice award from the National Apprentice Service.



Employee engagement

Following months of discussion, consultation and engagement, On 6 November, all Thorp employees received a letter which gave them clarity on their proposed future role and area they will be working in after April 2019.



291 Tonnes

As the plant prepared to enter its final year, the team in Thorp sheared 291 tonnes of fuel in 2017.



Exercise

We demonstrated our emergency arrangements with a night time emergency exercise.

DECEMBER



Christmas Appeal 2017

We launched our Christmas campaign for 2017 to help make a positive difference to the lives of people in our local communities. Employees donated food for the North Lakes Foodbank, toys for CFM's Mission Christmas appeal, and gifts for the elderly.



Nine gold safety awards for Sellafield Ltd



Sellafield Ltd has been awarded nine gold Awards by the Royal Society for the Prevention of Accidents (RoSPA). The RoSPA Health and Safety Awards are among the world's most prestigious safety accolades. They recognise our safety performance in 2016/17, a year in which we made significant progress in the clean-up of four of the most hazardous buildings in Europe.

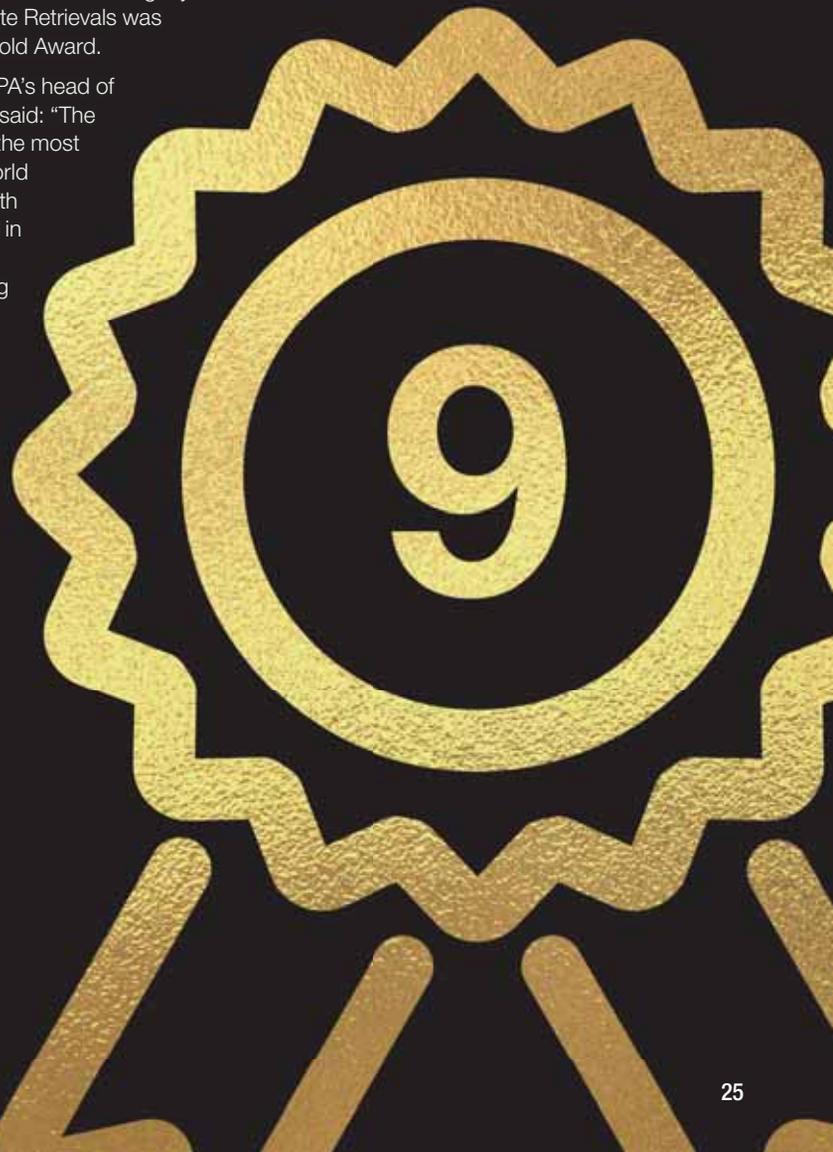
Retrievals Director, John Oliver, explained: "We have installed the first retrievals machine that will remove waste from the Magnox Swarf Storage Silo, removed more than 50 tonnes of nuclear fuel from the First Generation Magnox Storage Pond, fit doors onto the side of the Pile Fuel Cladding Silo and removed the first drum of radioactive sludge from the Pile Fuel Storage Pond."

Environment, Health, Safety and Quality (EHS&Q) Director, Euan Hutton, said: "We take these awards as a badge of pride in our safety performance and, while we want to improve our safety performance, we are proud of the work our people have done to deserve these awards."

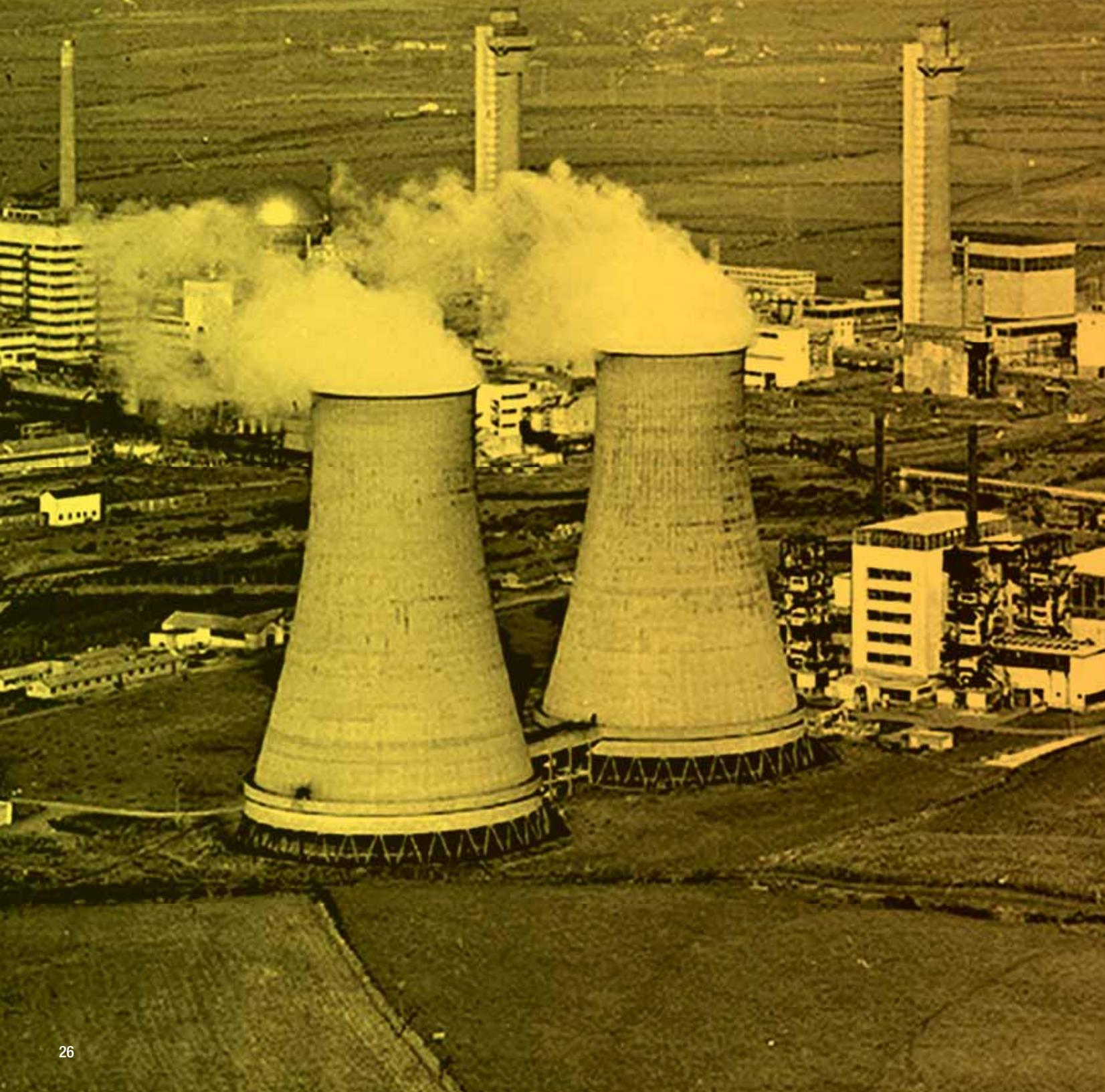
"Completing this technically difficult work while maintaining an unrelenting focus on safety, is a credit to our teams and the supply chain."

RoSPA gold awards 2017 included one each for Operations, Projects, Technical and Engineering, EHS&Q and one award for Sellafield Ltd. Each of the four legacy programmes in Waste Retrievals was recognised with a Gold Award.

Julia Small, RoSPA's head of awards and events, said: "The RoSPA Awards are the most prestigious in the world of occupational health and safety, and held in high regard around the world, as winning one demonstrates an organisation's commitment to maintaining an excellent health and safety record. Achieving the standard required is no mean feat."



From cooling towers to construction site

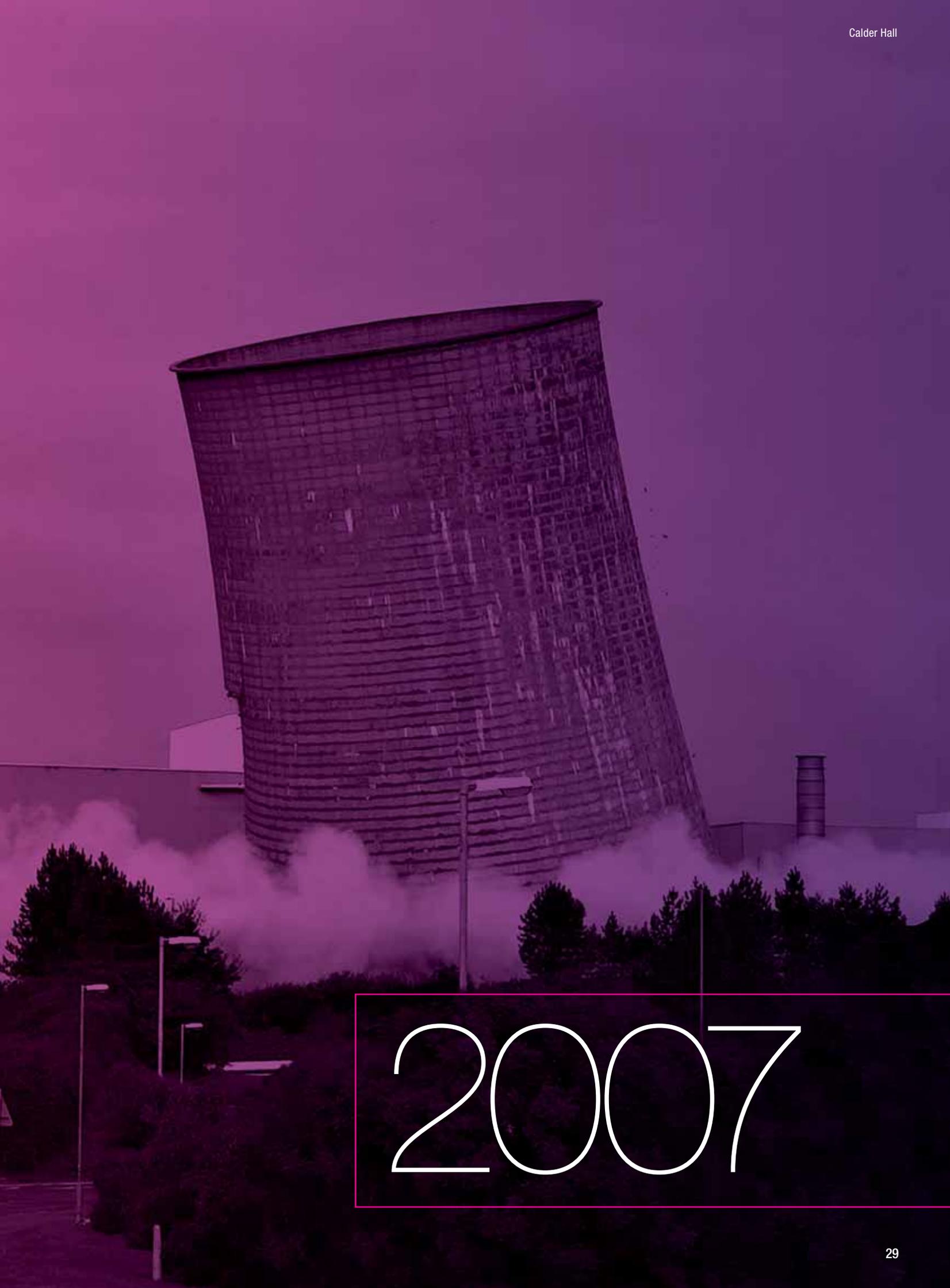


The four cooling towers at Calder Hall dominated the Sellafield and West Cumbrian skyline for two generations. Their billowing steam was a signal of the atomic age. The Sellafield site continued to develop around the Calder Hall station with available land becoming increasingly scarce.

1950s

Bringing the cooling towers to the ground in a controlled detonation was the work of moments, but was years in the planning. Employees and local residents watched the demolition with mixed emotions. For some it was a sad day, for others it was the first visible demonstration that our focus was shifting to the clean-up of Sellafield. The demolition also created valuable space on the site.





2007

The footprint of the two towers that stood toward the south of the site created a construction site for buildings that would help us tackle the clean-up of our legacy ponds and silos. Today the footprint is home to the Silos Maintenance Facility, a new build that is currently being commissioned ready to start work later this year.





2018

A relatively good year for physics!

If physics is concerned with answering some of the biggest questions in the world – **did we all start with a big bang?** – then we have just the fellows to help provide the answers. It has been quite a year for our physicists...

Our commitment to the professional development of our employees throughout their careers has been recognised by the Institute of Physics at their recent annual awards.

The awards are designed to recognise and reward excellence in people and teams who have made outstanding and exceptional contributions to the strength of physics. They reflect the breadth of the work in the physics community across academia, industry, education and outreach.

On the night we scooped the award for 'best practice in professional development'. The award is given to those who commend, celebrate and promote the very best in training and professional development opportunities for physicists at any stage of their career.

Dawn Watson accepted the award and said: "It is easy for us to say that Sellafield Ltd is a really good company to work for, but

to have an independent organisation of the calibre of the Institute of Physics recognise the work that we do to recruit, train and then continually develop people is a real honour."

Speaking after the event, Dawn said: "It was great to be in a room with so many physicists, but really good to see that so many of them were women."

A passionate supporter of encouraging more girls and women to take up scientific based careers, Dawn attended an international conference on Women in Physics earlier in 2017. She gave a presentation on diversity in the nuclear sector to more than 200 delegates from 30 countries around the world, including Pakistan, Mexico, Yemen, Bangladesh, Australia, Canada, the US and Argentina. It was so well received that she was invited to talk to undergraduates at Nottingham University about getting a job after a physics degree. ■

Jolly good fellows

We were proud to see that four of our employees were made a Fellow of the Institute of Physics in 2017. Congratulations to:

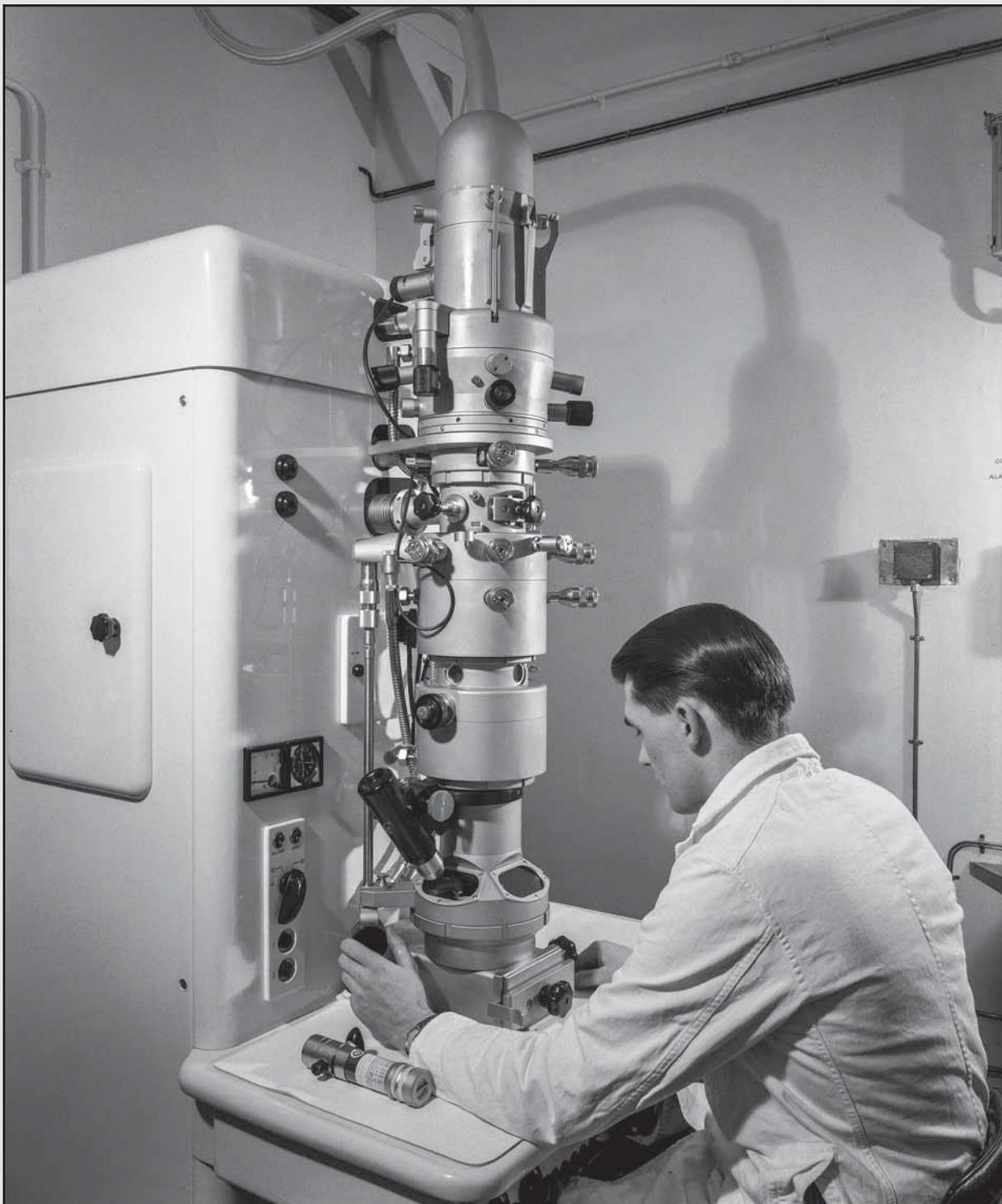
DAWN WATSON,
Strategy implementation manager

CIARA WALSH,
Waste integration manager

PAUL COOK,
Nuclear materials technical manager

SHAUN KELSO,
Senior policy adviser

FROM THE
ARCHIVES



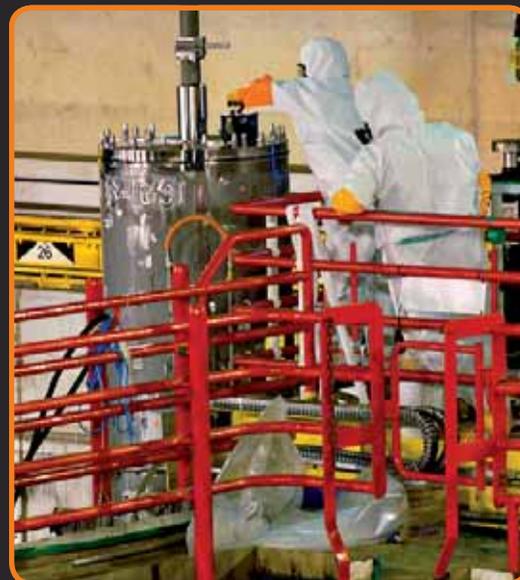
Sellafield Laboratory, 1962

An early Electron Microscope being used to inspect nuclear fuel.



THE FINAL COUNTDOWN

Later this year the Thermal Oxide Reprocessing Plant – or Thorp as it is known – will shear the final batch of fuel, signalling the end of almost a quarter of a century of reprocessing. While the end of a product line in most industries would have inevitably resulted in redundancies, we have taken steps to ensure that each and every person impacted by the end of operations has a new role to go to at Sellafield.



In November this year Thorp will shear its final fuel, completing the primary role of one of Sellafield's most well documented facilities. Once the final fuel has been sheared Thorp's ponds will be used to store spent nuclear fuel from EDF Energy's Advanced Gas-cooled Reactors ahead of its final disposal. The rest of the building will go through a period of post operational clean out, so that it can be decommissioned.

As well as making plans for how Thorp's assets can continue to support the UK's nuclear industry, we have also been working hard to ensure that the people working in the plant have some certainty about their next

role beyond reprocessing.

In November last year, 470 Thorp employees received a letter giving them clarity on what their proposed future role would be once the reprocessing mission ends in April 2019.

The letter didn't come as a surprise to anyone as work was carried out to prepare and ensure everyone had input into the process for placing them in their future role.

Some learned that they will remain in Thorp to focus on the Post Operational Clean Out (POCO) once reprocessing has been completed. Others learned that their new role will be in another part of

the business, in some cases they will be retrained to do a completely different job.

Thorp is the first operating plant to go through a major transition in a number of years and the change is a huge leap in the transformation of the site. It is understandable that people are nervous about the change and what the future holds but the transition team are committed to helping everyone through this period.

The roles will not be confirmed until April this year with a further full year before people move in April 2019. Our focus throughout that time will be on completing our reprocessing mission in Thorp with pride.

THORP'S HISTORY

Thorp's story started back in the mid-1970s, when a new fleet of nuclear reactors came online and used oxide fuels rather than Magnox fuel. Thorp was designed to be able to reprocess this fuel after it had been used inside the reactors.

In 1978, after a long and detailed public inquiry, the government approved the construction of Thorp – a new building at Sellafield that would house the facilities needed to reprocess fuel under one roof.

Construction got under way in 1981 in the centre of Sellafield on previously derelict land. Its formidable size – it stretches for a third of a mile – and presence means that you're never far from this reprocessing beast. Its storage pond is the size of 20 Olympic swimming pools, at 73m long, 23m wide and 8m deep – it received its first fuel in 1988 and will continue to store fuel for our customers well into the future.

The construction project dominated the site, and the local area. Local towns and villages were filled with the thousands of construction workers required to make this one-stop shop a reality. It was one of the biggest construction projects of its times and saw more than 5,000 people on site and a further 10,000 roles in the supply chain. That's a workforce bigger than the population of our nearest town, Egremont.

Thorp sheared its first batch of fuel in 1994 and with a large Japanese customer base the building quickly became the highest yen earner for the UK government.

With only 538 tonnes of fuel left to be reprocessed, we expect the last batch to start the process in November this year meaning that all reprocessing activities in the building will be completed in April 2019. ■







Supporting Sellafield's supply chain

Closer working with the supply chain is something we've been talking about a lot recently. It can mean many different things to many different people. We look at one example, and how it's providing benefits, not just to us, but also to PaR Systems and the National Nuclear Laboratory.

Employees from the supply chain working on the Sellafield site has been a familiar sight for many years. But the reverse – our employees working out in the supply chain, on their work programmes, is all together less common.

Yet on a small industrial site just outside of the Sellafield site in Seascale, that's exactly what is happening.

PaR Systems is a specialist engineering firm. Whilst it has a worldwide presence and a history that can be traced back to the earliest days of the nuclear industry in the United States of America, it's only had a presence in the UK since 2011.

This meant that when we offered to second our employees to support their work, it was



something that managing director John McGibbon quickly explored: "At the start of 2017, we heard that this was an opportunity and we realised that the expertise we could gain from Sellafield might perfectly complement our own specialist skills.

"When we won a contract that included the refurbishment of a crane at the National Nuclear Laboratory on the Sellafield site, we realised we had the ideal opportunity. Crane refurbishment is new scope for PaR in the UK, so we sought the support of Sellafield's crane team for

expertise and resource to supplement our own.”

“The process was pleasingly free of bureaucracy and took a matter of weeks from having the kernel of an idea to welcoming the guys on board.”

The guys he refers to are Alex Watkinson and Alan Hollinshead Jones from our Enterprise Plant Engineering team of experts. They joined the PaR team in June 2017. This was initially for a two month period, but has since been extended to the end of the year to support the project's expanding needs.

The secondment agreement is flexible, which means that if they're not required on a given day, they can drop back on to Sellafield work. There is a simple commercial contract in place for payments.

Describing the move, Alex said: “This has been a fantastic opportunity to expand my skills and experience whilst also supporting an important local supply chain partner. Both Alan and I have been made very welcome at PaR, which means we've been able to get stuck right in to supporting them on this refurbishment project.

“This type of project feels like a sensible way of transforming Sellafield and the supply chain, and I am sure it's something we'll be doing a lot more of in the future.”

Alan added: “This has been a positive and enjoyable experience.

We've been made to feel an integral part of the PaR team. It's been warming to have been welcomed and to know that they trust our skills, experience and knowledge and are confident in our ability to deliver for them.

“From a personal point of view, it is also fantastic to have the opportunity to learn how the supply chain operates, as well as to work in plants and facilities I might not ordinarily.”

For PaR, the next steps are to tender for bigger projects. As the European headquarters, this will include projects outside of the UK and in sunnier climes too.

John added: “We fully support the vision of West Cumbria as a centre of nuclear excellence, and are committed in doing our part to support it. It is excellent to say that Sellafield Ltd is also, proactively and hands on, doing exactly that.”

The 40 tonne Wharton Hoist is used to handle nuclear flasks and is critical to the operation of the laboratory. It is located in the Active Handling Facility which is based on the former Windscale site. It is owned by us and operated, under commercial agreement by the National Nuclear Laboratory.

Secondments are just one of the ways we are transforming Sellafield and our relationship with the supply chain. To find out other ways of doing business with us, visit www.gov.uk/sellafieldtd or email supply.chain.enquiries@sellafieldsites.com. ■

Whatever floats

It has broken new ground in becoming the first Remotely Operated Vehicle (ROV) to successfully work in one of the most hazardous environments at Sellafield. But the future prospects for the company behind the **Avexis** aren't just in opening up new decommissioning missions, they're in developing the new 'nanobubble' material it's made of.



*It's an
off-the-shelf
solution where
we have helped
build the shelf.*

Robots don't have grandkids, but if they did it's a good bet the Avexis (Aqua Vehicle Explorer for In-situ Sensing) ROV would be telling them about its maiden voyage through a six-inch hole to take the plunge into the radioactive liquor of Sellafield's Magnox Swarf Storage Silo.

In the world of nuclear decommissioning, the mission to use the Avexis to provide a new pair of eyes inside this legacy storage silo and dislodge and move small items of waste is pioneering stuff.

It was manufactured by Cumbrian small to medium-sized enterprise Forth Engineering, but the back story for our silo swimmer involves a five-year journey through research and development. The search for the right machine was prompted by the challenge that commercially-available ROVs were simply too big to fit through the six-inch hole which is something of a worldwide standard aperture size for nuclear facilities from Fukushima to Fort Calhoun.

Back in 2012 the University of Manchester were developing a mini ROV for PhD research; the nuclear industry helped them develop it further and pulled in other Government innovation grants. At this

our boat



“It means we can design just how floaty we want an object to be.”



TAKING THE TUBE: The Avexis is lowered through a six-inch aperture into the silo liquor below.

stage no-one dreamed the ROV would be going into the Magnox Swarf Storage Silo. It was envisioned that the slimline machine would

be squeezed into a decanner cave in the First Generation Magnox Storage Pond.

The machine was then tested at Forth’s Maryport base, at which point Forth came up with plans to really push forward its commercial potential by stripping down the specifications, making it fit-for-purpose and therefore making the final product at a lower-priced (ie more ‘disposable’) bracket.

“Forth Engineering took the concept, ran with it and went on to produce a much more standard, commercial product which could have massive potential around the world,” said our innovation manager Xavier Poteau. “It means we can now buy one of these machines commercially for around £10,000. It’s an off-the-shelf solution where we’ve

helped build the shelf.”

Media interest in the Avexis on the BBC and beyond meant that Forth has fielded enquiries from the nuclear and oil and gas industries as far afield as China and Australia. But it’s not only the Avexis which has exciting potential – it’s the extra-buoyant material Forth have built it with: a polymer which starts life as a liquid and is then mixed with ‘nanobubbles’, which are microscopic glass particles filled with air.

“It means we can design just how floaty we want an object to be,” explains Mark Telford, director of Forth. “If we want a machine to be completely neutrally buoyant so it suspends in the water without using any propulsion then we can do that. We can also introduce local buoyancy in just some areas of a piece of kit.”

Mark can already see the potential in

(cont overleaf) >>

things like long-reach hand-held tools used for manual retrievals and repositioning work in nuclear ponds – a buoyancy-boosted pole could help take the strain out of that work. New Avexis ROV models, the Shark and the

Hydro, have been built with buoyancy in mind by Forth and are already being tested on the Sellafield site for use in the legacy ponds.

Forth picked up an Innovation award at the recent CN Group Business Awards for its new nanobubble polymer and Mark is floating on cloud nine about its potential. “The beauty is you produce a piece and can then turn it into whatever shape you want it to be, like carving a block of wood. We can make any object of any size completely neutrally buoyant. It could be a real game changer.” ■



GETTING SUSPENDED: The Hydro ROV can hold an exact position in the water.

PRACTICE MAKES PERFECT: Extensive trials are carried out before any equipment is deployed in active areas.

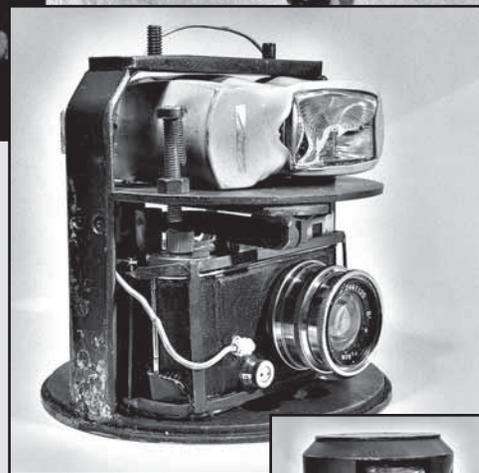
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fit through the six-inch hole which is something of a worldwide standard aperture size for nuclear facilities from Fukushima to Fort Calhoun.

FROM THE **ARCHIVES**



The AVEXIS is our newest robotic recruit, but pioneers at Sellafield have been exploring radiological areas of the site with the help of remotely operated vehicles for decades.



In 1965 the team at Calder Hall deployed their own version of AVEXIS to inspect the inside of one of the station's reactors. Pictures left to right are: Percy Gill, George Buckley and Bill Robertson. Inserted: the photography equipment used to inspect a reactor vessel.

IN FOCUS:

EVAPORATOR D

Our new highly active waste evaporator has been a decade in the making. Switching it on took place more than a quarter of a century after our last evaporator was brought into use. In the run up to this point, **Ian Curwen** went behind the walls and shielded cells of the evaporator to understand why it is such an important asset.

It is a strange feeling to stand in a room that in a matter of weeks will become one of the most inhospitable working environments imaginable. Once operational, the temperature, and the acidic, corrosive and highly radioactive nature of the liquid that is treated by the evaporator means that it will be out of bounds. It is likely that no one else will ever stand where I am today.

That place is inside Evaporator D, the fourth addition to our fleet of evaporators. Each of them acts like a giant jacketed kettle for liquid waste reducing the volume of our most hazardous waste product by a factor of fifty (for oxide wastes) or 100–150 (for Magnox wastes) – before it is sent on to the vitrification plant to be turned into a solid, stable form, suitable for long term storage and then disposal.

Because of the nature of the liquid that runs through the evaporators, corrosion occurs over time, meaning that each evaporator has a limited life.

ON YOUR MARKS, GET SET...

The team will soon be giving the evaporator a full road test, so today is one of my last opportunities to explore. I am stood in one of many cells that will ultimately be operated by people working on the other side of the concrete walls.

Cocooned inside a structure of more than 23,000 tonnes of concrete, water will soon be



Above: Ian Curwen exploring Evaporator D
Right: The module going into the building



Evaporators

Evaporator

A

Operated
1970-1986

For Magnox
waste

Not currently
in use

Evaporator

B

Operated
1984-2009,
2014-Present

For Magnox
waste

Throughput of
25–30m³ per
day

Evaporator

C

Operated
1990-Present

For Magnox
and Thorp
wastes

Throughput of
25m³ per day

Evaporator

D

For Magnox
and Thorp
wastes,
Magnox and
Thorp clean
out and HALES
evaporator and
storage tanks
clean out

The only
evaporator that
can handle
solids

Maximum
throughput of
90m³ per day

pushed through the network of 22,000 metres of pipework that, once active, will allow highly radioactive liquor to flow through the plant.

The scene reminds me of a cityscape, with row after row of meticulous pipework criss-crossing its way, in parallel, from one side of the facility to the other in much the way that the old 3D pipes Windows screen saver used to.

Andy North, a project manager, who has been with the evaporator for every step of the journey, is my tour guide today and explained: “The inactive commissioning work using water is crucial in testing out the plant and demonstrating our confidence in how the facility will operate. It is also the first opportunity for the operators who will run the plant to prove their instructions work and gain experience of running the plant. There is a lot to test.”

LOCATION, LOCATION, LOCATION...

Standing outside of the evaporator building it is astounding to think that a nuclear facility has been created on such a small footprint, and

right next to other critical nuclear buildings.

Andy said: “The evaporator facility was a modular build, meaning that it was built in parts at manufacturing hubs across the UK and assembled into 11 large modules in Ellesmere Port, with each module delivered to site by sea and then connected together in situ.”

Looking down the site towards the sea I see reminders of the deliveries. Because of the size of some of the modules – the biggest standing 27 metres tall and weighing more than 500 tonnes – a footbridge had to be removed and signage and street lights adapted so that they could lay flat on the floor as the modules made their slow journey up the length of the site.

There are no such reminders on the public beach as the temporary roadway was installed and then removed before and after each module delivery and the temporary bridge across the river Ehen has been removed and the spit rebuilt.

“Those deliveries were quite something,” Andy said. “Each module travelled by road to Ellesmere Port dockside, contended with the Irish Sea – not the calmest of seas in the winter months – before landing on the beach, crossing the Ehen spit and then the Cumbria coastal railway line.”

As each of the 11 modules made their journey to the construction site, a tailor-made four-way gantry system – designed, installed and operated by experts from Mammoet – lifted and moved the module into position inside the building shell. The modules were then connected together and the concrete building shell completed around them.

READY, SET, GO...

With the water tests complete, the team shut down the evaporator, drain the vessels, sumps and pipework and physically connect the evaporator to the High Active Liquor Evaporation and Storage plant next door, ready for active commissioning and then operations.

The beginning of the end came in December, when we diverted liquor into our newest, shiniest evaporator.

We’ve now started a period of evaporation to prove the concept. Once our regulators are satisfied, we will be granted full Consent to Operate, and the evaporator’s journey from drawing board to operation will be complete.



Above: Module on route to construction site
 Top Right: Barge coming in on the beach
 Bottom Right: Module taken by road



THE IMPORTANCE OF EVAPORATION

The overall schedule and cost of Evaporator D has been rightly scrutinised.

The lessons that we have learned throughout the project have led to improvements that will strengthen our project management capability. This includes the foundation of our project delivery directorate, and, in September last year the first cohort of project management apprentices completed their training at our Project Academy.

We are also seeking private sector

expertise to bolster our capability through the procurement of long-term Programme and Project Partners.

Ultimately, the new evaporator has provided us with the evaporative capability that we need to complete reprocessing in Thorp and Magnox, but more importantly, will ensure we can clean out the reprocessing plants and our old evaporators and storage tanks.

Without this, we couldn't deliver our mission. ■

The new evaporator has provided us with the evaporative capability that we need to complete reprocessing in Thorp and Magnox, but more importantly, will ensure we can clean out the reprocessing plants and our old evaporators and storage tanks.

Building the evaporator



1. Groundworks



2. Foundation level



3. Next construction level



4. Crane installation



5. Installation of rig



6. Bendalls producing cooling coils for evaporators



7. Module being taken by road



8. Module being taken by sea



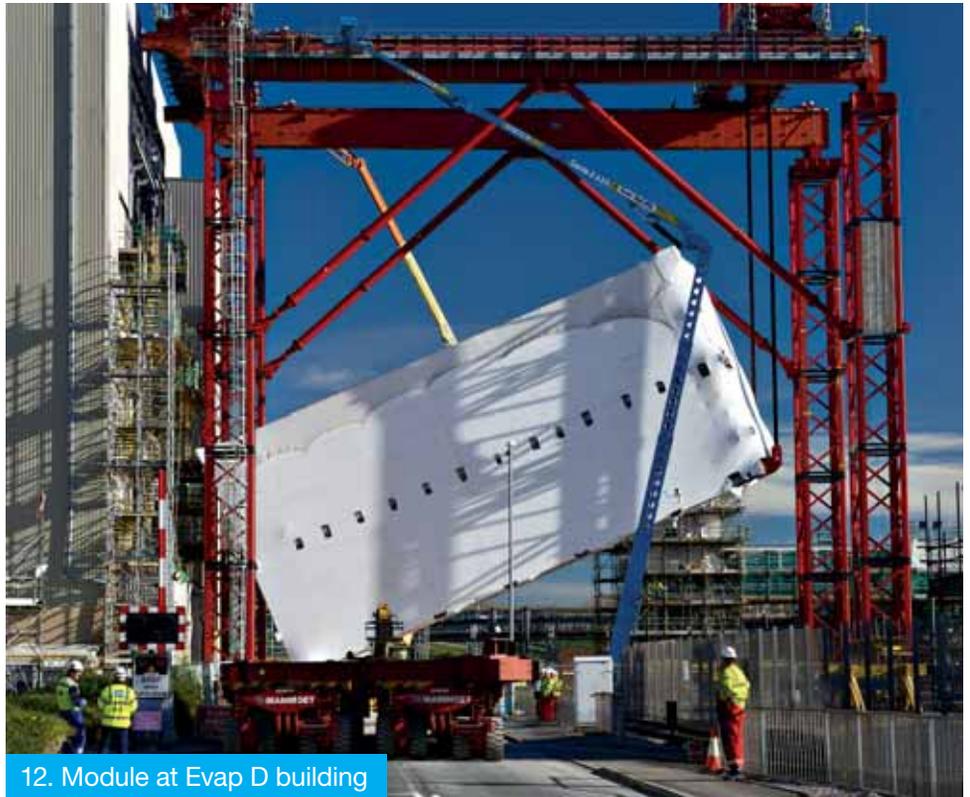
9. Beach landing at Sellafeld



10. Module going over River Ehen



11. Module on site going past Thorp



12. Module at Evap D building



13. Module upright



14. Module going into building



15. Inside Evap D



16. New building external

MEET THE NEW HEAD OF COMMUNITY RELATIONS

Gary McKeating is no stranger to Sellafield, the nuclear industry or West Cumbria. His new role as head of community relations sees him continue his passion of securing social and economic benefit from the nuclear industry for our communities. As part of his remit he has also taken on responsibility for our social impact programme. A few weeks into this role, how does he believe we can enhance our relationship with the community and help to drive growth in our local economies through our social impact activity?

My role at Sellafield as head of community relations is to secure the best possible social and economic benefit for our communities from all of the investment made into our organisation, unlocking additional social value from our supply chain and working with our partners and stakeholders to direct our resources and assets to secure maximum impact. I wish to see a step-change in our approach and our impact. That's what I intend to do and what our communities rightly deserve.

We also distribute funding on behalf of the Nuclear Decommissioning Authority. Historically the role of socio-economics at Sellafield has focused on distributing a pot of money, responding to charity requests and taking a lead role in deciding how our social impact investment should be spent. As we move into a new era for Sellafield and a challenging external political and economic environment I'm looking for a step change from us and our supply chain.

Relationships require work.

Professional relationships take effort, respect and commitment. I have immense respect for the stakeholders in our communities, from council officials and politicians to community activists and volunteers. It's a challenging world to work in

and with many different aspirations.

Part of my role is to listen to our stakeholders, to understand their concerns, interests, pressures and commitments and to see how we or the wider Sellafield system might be able to help. We all want the same thing – the best possible future for our communities.

Supporting the community.

There is a wealth of what I call 'silent support' that we and our supply chain have given to the community that isn't as visible as a cheque presentation or ground cutting. Sometimes a project might need access to project management skills or other resource. Projects and charities don't always want a cheque; they may want help pulling a business case together. Across our business and supply chain we have those skills and we and increasingly our supply chain are happy to share them. Supply chain companies are working together on common goals and it's refreshing to see companies put aside their natural competitive approach to work with other companies on social impact in our communities.

There are real issues in our economy and communities that need to be addressed if West Cumbria is to achieve the future that is on offer. That inevitably means taking

a more strategic approach to how we invest our social impact fund. How can we spend money today that will create jobs or improve the local skills base in the future and importantly how do we measure our investments?

Equally, there are opportunities to help community groups today – whether that is donating a raffle prize that will raise funds for a good cause, or contributing towards the cost of refurbishing a community centre. Every request for support is assessed on its own merits, but we can't say yes to everything.

Future opportunities.

The opportunities for our local communities could be considerable.

There are organisations that are already making a new future for themselves, exporting technologies that have been created for use at Sellafield to new customers around the world. They are creating a future where they can thrive whether they are working at Sellafield or not. Part of my challenge is using these examples – to prove that you can create a sustainable business in the nuclear and broader decommissioning and engineering sector in West Cumbria – and to promote the area as a centre of nuclear excellence.



“Part of my role is to listen to our stakeholders, to understand their concerns, interests, pressures and commitments and to see how we or the wider Sellafield system might be able to help.”

Sometimes you have to look back in order to have confidence in the promise of tomorrow.

You can see the positive impact of the nuclear industry across our communities. In West Cumbria major landmarks like the Westlakes Science and Technology Park, the redeveloped Whitehaven marina and the Port of Workington; education facilities like Lakes College, the Construction Skills Centre, and the National College for Nuclear, were all supported by the industry. A decade ago we invested in the West Lakes Academy, creating a school that would go on to achieve ‘outstanding’ status by Ofsted. Even our own corporate centre, Albion Square, is in a new build in the heart of Whitehaven.

The juxtaposition of industry and outstanding natural beauty sets our area apart.

Our offer in this area is unique. Cutting edge science and technology sits alongside natural beauty. When I’m not at work you will often find me out and about taking photographs of our rugged coast. As a Rugby Football League accredited photographer you might also spot me on the sidelines of our local sports grounds.

Gary talks us through our new social impact strategy.



Gary’s favourite things

FAVOURITE FILM:
CITY SLICKERS

FAVOURITE FOOD:
TATIE POT

FAVOURITE HOLIDAY DESTINATION:
NORTHUMBERLAND

FAVOURITE MUSICIAN:
DAVID BOWIE

SOCIAL IMPACT

As we prepare to publish our social impact strategy, Gary gives us an overview of its five strategic objectives and how, collectively, everyone involved in the Sellafield mission can provide significant and measurable socio-economic growth to all of our stakeholders in return for their investment in our work on the site.

We and our partners can create positive change. As always, our first priority at Sellafield is the safety and security of the site, our employees and nuclear materials. Our focus on mission delivery is unrelenting.

We are transforming our organisation, seeking to accelerate the delivery of our mission while also providing excellent value for money to the taxpayer. As part of this change we are determined to deliver the maximum social impact from the money we spend directly and with the supply chain.

Our five strategic objectives focus on resilient economies, thriving communities, social value chains, sustainable incomes, and collective impact.

RESILIENT ECONOMIES

Social impact objective:

To enable inclusive growth in the capacity, diversity and capability of the economies in which we serve.

Gary explained: "Success against this objective would see us and our supply chain colleagues proactively engaging small and medium sized enterprises, charities and social enterprises. Longer term contracts with smaller organisations leads to stability of turnover and allows for growth and diversification beyond work at Sellafield.

"Wouldn't it be great to see a fresh generation of innovative start-up companies emerging in our communities who see potential customers around the world?"

THRIVING COMMUNITIES

Social impact objective:

To assist our communities to thrive by supporting sustainable activities which create self-reliance and independence.

Gary said: "We want to encourage communities that are impacted by our work to engage in social impact programmes and training opportunities. We have a collective pool of resources and skills that can add more value to social impact programmes than money alone. One of our challenges is making sure that community groups and organisations know about the resources potentially available to them.

"We also need to work closely with our supply chain colleagues to co-ordinate our efforts to deliver the maximum positive impact and with our stakeholders so that they are involved in setting the investment priorities and decision making."



STRATEGY

SOCIAL VALUE CHAINS

Social impact objective:

To create a wide-reaching positive social impact with our supply chain.

Gary said: "We will recognise and promote high performance in social impact by our supply chain partners because we know that our collective efforts could reap massive benefit to our communities. I am excited to see how global thought leadership and innovation from our supply chain can help provide new solutions to local social, environmental and economic issues."

SUSTAINABLE INCOMES

Social impact objective:

To improve access to sustainable incomes, beyond Sellafield, by increasing skills, knowledge, aspirations and access to opportunities.

Gary explained: "We want people in our communities to have access to a good income and are looking at how a programme of high impact education, skills, personal development and employability support activities could help. This of course means continuing our collective support to apprenticeship training but it also means engaging with education and employability providers and promoting wider career choices and opportunities in and outside of nuclear."

COLLECTIVE IMPACT

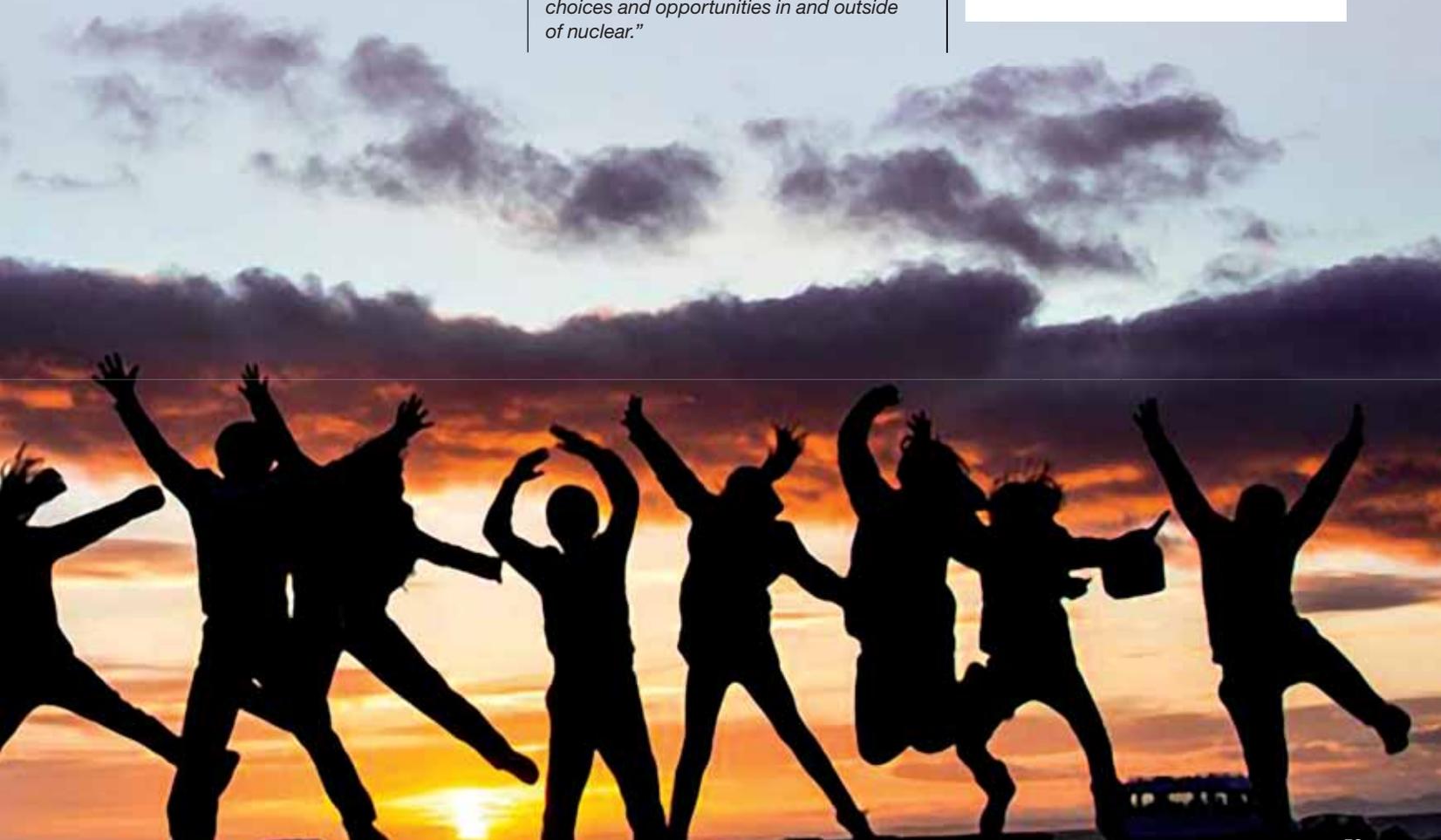
Social impact objective:

To leverage collective impact and investment by engaging and working with our stakeholders, partners and communities.

Gary explained: "The clue is in the title with this objective – we want to work collectively to design realistic and measurable social impact interventions."



The full Social Impact Strategy will be published on www.gov.uk/sellafieldltd in early 2018.



LINC

with Sellafield



We spend more than half of our annual £2 billion budget with the supply chain, bringing some of the biggest names in engineering, construction and decommissioning to work on the Sellafield site in West Cumbria. The scale of our commercial opportunities and the legal procurement processes we are bound by can be daunting to smaller organisations. A new scheme to encourage small and medium sized enterprises at a local and national level was launched in autumn 2017 and has already opened the door to work at Sellafield.

Small and medium sized enterprises – or SMEs as they are known – bring innovation and expertise to the projects they work on. Their size – typically fewer than 250 employees – also means that they offer agility and flexibility.

The Government has recognised the value that SMEs bring to organisations and to the UK economy and has set targets to encourage their departments and arms-length bodies to use them. As a publicly funded organisation and subsidiary of the Nuclear Decommissioning Authority we have a role to play in meeting that target.

“But getting work at Sellafield isn’t easy for smaller organisations,” says Emma-Jayne Gooch, our head

of supply chain development and innovation. “The process, the paperwork and the regulations – all of which are legally required – can be overwhelming.”

Emma-Jayne speaks from personal experience as, prior to joining our organisation in 2017, she ran an SME in Cumbria, recruiting for the nuclear industry.

“I understand the frustrations that SMEs have because I have been there. My role isn’t about removing processes and working around legal frameworks. I am here to help businesses that have something to offer our mission at Sellafield to navigate the system and to put their best foot forward. Our new LINC programme is just one of the ways that we are doing that.”

LINC with Sellafield

If you are a small to medium sized enterprise (defined as a company that has fewer than 250 employees; and has either (a) an annual turnover not exceeding £50 million or (b) an annual balance sheet total not exceeding £43 million.) register today. Visit www.gov.uk/sellafieldltd and click on the ‘how to do business with us’ link on the top right of the page. You will find a registration form which should be completed and emailed to LINC@sellafieldsites.com as well as a list of registered companies and details of challenges open for submission.

LINC was launched in September 2017 and is designed to encourage SMEs at local and national level to collaborate with each other and deliver innovative solutions to the mission at Sellafield.

Emma-Jayne added: “Our colleagues at Dounreay launched their own LINC scheme in August 2017 and have found it really

opened the door for smaller businesses.”

Work packages that set out some of the challenges we are addressing at Sellafield are published on our website and SMEs who have registered on the LINC programme are encouraged to work together and submit proposals on how they could help to meet the challenge described.

Emma-Jayne added: “Collaboration with another SME isn’t essential, but it is something that we strongly encourage.

The first opportunity published in the LINC scheme was a call for proposals on how we could achieve accreditation to ISO 44001, ‘collaborative business relationship management systems’.

This international standard by the International Organisation for Standardisation seeks to improve business relationships around the world. It is based on BS 11000 and helps business partners maximise the value of collaborative working:

- operational awareness
- knowledge
- internal assessment
- partner selection
- working together
- value creation
- staying together
- exit strategy implementation

Collaboration is a key enabler in the creation and unlocking of significant value with our supply chain, and as such we are committed to achieving accreditation to the new standard by 28 September 2018.

Emma-Jayne said: “Through the LINC scheme we asked SMEs to get their heads together and propose how we could identify any gaps against the standard, how the standard could initially be rolled out in a pilot area of the business and then ultimately rolled out across the whole business.

“We received five submissions in total and were really impressed by the standard of those proposals. A panel assessed the proposals four days after the closing date and announced the successful SMEs just two days later. That is a speed of turnaround never experienced before by Sellafield.” ■

All opportunities issued via LINC will have a maximum value of £150,000. No contracts that follow any opportunity advertised via LINC will be awarded in excess of this threshold. Any opportunities valued at more than £150,000 will be made available through our Complete Tender Management system and published on the Official Journal of the European Union.

Running man

In October 2017 Gary McKee was awarded Freedom of the Borough by Mayor of Copeland, Mike Starkie. Contrary to popular opinion, this freedom doesn't allow Gary to drive sheep down Whitehaven's main streets, but it is the highest honour that a community can bestow on a resident and reflects his commitment to a cause close to his heart. I sat down with him to talk about physical challenges, balancing charity work and a career, and motivating others.



INTERVIEW



BY FIONA GREGG

With a Kilimanjaro trek, 100 marathons in 100 days, and a beer named in his honour, manufacturing team leader, Gary McKee, has raised thousands of pounds for Macmillan Cancer Support since his father passed away in 2003 having been a survivor of the disease. His advice for facing challenges in life; just keep putting one foot in front of the other.

You have completed 100 marathons in 100 successive days, Climbed Kilimanjaro and are already planning your next challenge, so my first question has to be: Why?

My father passed in 2003 and I remember how I felt when we were told he had cancer so my main motivation is to raise funds for Macmillan Cancer Support knowing that every day families will be told the devastating news just like we were.

Your marathon challenge raised more than £100,000, you must be thrilled?

It was incredible and I want to thank everyone for their donations. As well as the money raised my best memory from the challenge is from Easter Sunday when 130 people turned up and ran with me. The people who turned up to run with me usually only run 6 miles but they stayed with me for half a marathon and then went to do a full shift at work. Having the ability to encourage others is one of my biggest achievements to date.

I try to think of challenges that will grab people's attention to gain their support but I am equally happy to organise a cake sale because every penny really does count.

You completed that challenge while working full time for us at Sellafield. How did you fit everything in?

I am a manufacturing team leader working on dismantling fuel from the UK fleet of Advanced Gas-cooled Reactor for long term storage on behalf of our customer EDF Energy. During this challenge I was working more in a supporting role.

Generally when I have a challenge planned I use annual leave, credit time and work around my shifts and my wife Susan's shifts. Thankfully our families provide support with childcare.

You were awarded the Freedom of the Borough in Copeland, picked up a prize at the North West Pride Awards and went on to the televised National Pride of Britain Awards. What has been your biggest 'pinch myself' moment?

As a local lad, it was an honour to receive the Freedom of the Borough and it was really strange to be in the same room as all of the celebrities at the National Pride of Britain Awards.

There are a lot of people behind my success and even though I get the plaudits they know who they are and how much they mean to me. I am forever grateful for the support my local community and the Sellafield community gives me.

You recently spoke at our annual business awards event, how does that compare to your other challenges?

It wasn't something that I could really train for but I think it went well! It meant that I could talk to people about the great work that Macmillan Cancer Support do, what the charity means to me and why I will support them for as long as I can. If even one person was either inspired to support the charity, or learned that the charity is there if they should ever need their support, then it was worth any nerves or discomfort. I am not a professional speaker but after the response watch this space, and of course my fee would go to Macmillan Cancer Support.

Since the event I have been contacted by people I don't know, have never met, but who heard me talk and wanted to let me know how I had inspired them. That is really rewarding.

I can vouch for that – one of my team regularly quotes your mantra of 'just keep putting one foot in front of the other'.

I am glad that it has struck a chord with people. It really can get you through a tough day, week or couple of months. In terms of physical challenges, I want people to believe if Gary McKee can do it so can I.

Are you hanging up your running shoes now?

Not even close! Fred Whitton was an ambassador for Macmillan and it is 20 years since he died so, I am going to run the Fred Whitton challenge in 24 hours. I will have to complete the 110 mile cycle race through the Lake District, starting and finishing in Ennerdale, including over 10,000 feet of ascent/descent up and down the Lakeland passes.

GARY'S FUNDRAISING HIGHLIGHTS

Ran from Lands' End to John O'Groats

Ran from his home in Cleator Moor to London to take part in the London Marathon

Ran the Coast 2 Coast route from Seaton Carew to Whitehaven – 116 miles in 24 hours

Carried the Olympic torch through Whitehaven town centre as part of its journey to London in 2012

Inspiring other people – a friend shaved her head and raised £5,000 for MacMillan

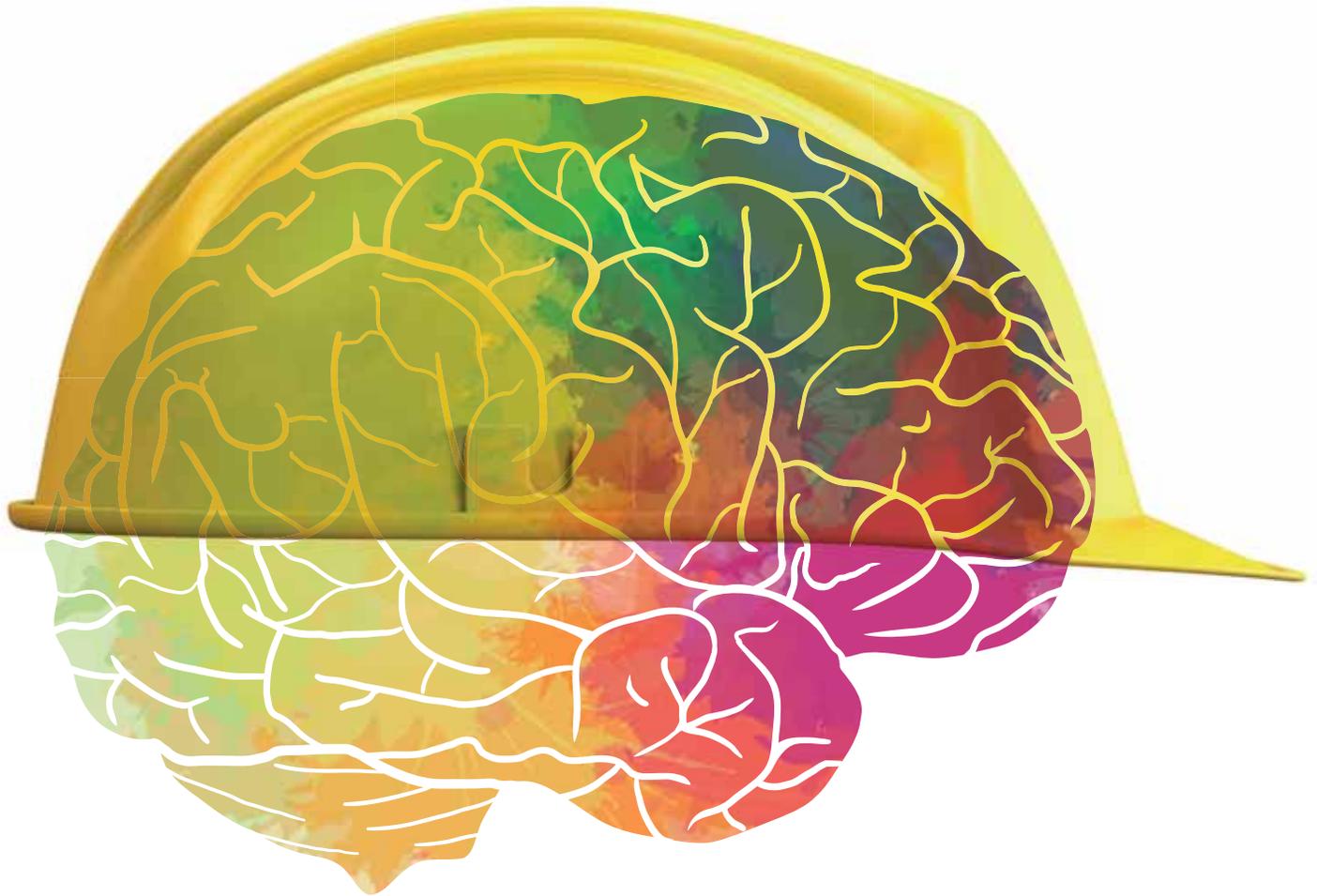
Gary's favourite things

FAVOURITE BOOK:
FEET IN THE CLOUDS BY RICHARD ASKWITH WAS SENT TO ME BY THE AUTHOR AND SINCE READING IT WE HAVE BECOME FRIENDS. IT IS VERY INSPIRING SO I HAVE READ IT SEVERAL TIMES.

FAVOURITE FOOD:
FILLET STEAK, BUT IF I AM IN TRAINING THEN I'LL GO FOR ANY CARB THAT I CAN BULK UP WITH.

FAVOURITE PLACE:
SYDNEY, AUSTRALIA.

FAVOURITE SONG:
PROUD BY M PEOPLE – THE LYRICS ASK A GREAT QUESTION: WHAT HAVE YOU DONE TODAY TO MAKE YOU FEEL PROUD?



IT'S GOOD TO TALK

Slips, trips and falls are one of the biggest causes of work-related injuries on our construction projects across the Sellafeld site. But there is another work-related illness that isn't always as obvious – mental health. We have extended our collaboration with the supply chain beyond on-site delivery, working together to raise awareness of mental health and where people can go for help and support.

Working with heavy machinery, at height, on congested construction sites, outdoors in all weathers; working on a construction project isn't for everyone and carries with it the potential for physical injury. Slips, trips and falls can lead to twisted or broken bones. Such injuries are easy to spot and to relate to.

A change in someone's behaviour, signs of stress, pressure and anxiety aren't as easy to spot but could be the result of another cause of work-related illness in the construction industry; mental health issues.

According to Health and Safety Executive figures, 18 per cent of reported work-related illnesses in the UK construction industry are the result of mental health problems, accounting for 400,000 working days lost each year.

We were delighted to stand with our

supply chain colleagues at an event at Sellafield in November aimed at raising awareness of the signs of mental health issues and ensuring that people who are suffering know that they can speak openly.

Balfour Beatty sponsored the event. Nuclear director for Balfour Beatty, Iain

awareness and foster an open culture where our employees feel able to talk about their mental health without feeling they will be judged."

The event included an interactive session by Dramanon, a professional acting group that recreates the

experiences of someone with mental health issues in order to generate discussion.

Professional rugby league players, Danny Sculthorpe and Jimmy Gittins, also shared their own personal experiences of dealing with mental health issues.

Speaking after the event, our head of environment, health, safety and quality for projects,

Mark Sarrington, said: "I am thrilled by the attendance and interactions that I saw. If only one person feels that they are able to get help, or now know where to go to get that help, as a result of this event then it was worth every minute." ■

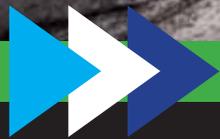
“In a world where 42 per cent of UK construction workers are likely to experience mental health issues, we are committed to creating a business with mental health and wellbeing its heart.”

Wilson, said: "In a country where 42% of construction workers are likely to experience mental health issues, we are committed to creating a business with mental health and wellbeing its heart.

"Events like the one at Sellafield raise

WORKING IN PARTNERSHIP WITH:





On the buses

With thousands of people accessing Sellafield every day and night, and a growing pressure to remove cars from the site and make room for new nuclear facilities that are vital to the clean-up of the site, our transport infrastructure has never been more important. Central to this is our supply chain partner, Reays Coaches, who have won a contract to provide site transport for another four years and are going from strength-to-strength.

Cumbria-based Reays Coaches are no strangers to our site transport challenges. They provide a shuttle-bus service for people who work on site and use the park-and-ride service to and from our main off-site car park as well as a regular service around the site itself and between the site and our satellite offices in Whitehaven.

They also recently won a four-year contract to transport our employees between our West Cumbria and Warrington offices.

When they started working with us in 2010, the Reays team was transporting around 12,000 Sellafield passengers every month. Improvements to the service and a growing pressure to reduce the number of cars on the nuclear site have seen this figure rocket to 40,000 passengers every month.

It isn't just passenger numbers that are growing; the company itself is expanding with new employees and a West Cumbrian base.

The family business started as a one man outfit in 1980 when founder Walter Reay started running a mini-bus to take the darts team from his local pub in Fletcherstown to away fixtures. Today the company employs 160 people and operates more than 90 vehicles making it one of the largest fleets of private hire coaches in the north of England.

Managing director, Chris Reay, said: "We have seen a massive increase in business in West Cumbria since securing our first contract with Sellafield. We knew from the start that having a base in the area was important and so opened a depot in

REAYS HAVE...

160
EMPLOYEES

A FLEET OF
90
VEHICLES FROM
BUSES TO VANS

40,000
PASSENGERS A MONTH
FROM THE SELLAFIELD
SERVICES ALONE

Egremont with a team of 25 people. We are already looking for larger premises in the town and plan to double the size of the team by the end of 2019.”

Growing the team will include an ongoing commitment to apprenticeships. Chris explained: “We take a ‘grow your own’ approach to recruitment and currently have four apprentices in a variety of roles in the business. The team support apprentices through their studies and help them to grow new skills for the future.

“As we continue to grow we are constantly on the lookout for local people to become qualified, locally-based drivers with us, whether they are part-time, full-time, working on a school run or international travel, and help us to create a hub in the community where we can offer our services.”

“We hire our drivers based on their personality then train them to our high standards. We want passengers to have the best experience possible from the moment they step foot onto the coach.”

As well as providing shuttle bus and coach services for us, Reays also offer a vehicle hire service and currently have around 70 vans being used by contractors on the Sellafield site.



STACKS OF PROGRESS



The saying is that 'what goes up must come down', and that's certainly the case for the project to demolish the stack on top of the former Primary Separation Plant at Sellafield.

The stack doesn't meet modern safety standards and must be removed.

Since the last issue of Sellafield Magazine went to press, demolition work

EACH WEEK THE STACK IS REDUCING BY AROUND A METRE IN HEIGHT WITH A FINAL TARGET HEIGHT OF 9 METRES.

has started on the 61 metre stack.

We expect to hit this target in spring 2020.

Below a roof canopy, work is undertaken by both specialist machinery and by hand. Workers access the chimney via a self-climbing platform that hugs the stack. As work is completed, the platform is unclipped and moved a metre lower, to allow access to the next section.

The demolition work will temporarily increase the risk as the stability of the stack will be compromised. We've undertaken extensive preparatory work to ensure work is completed safely.

The risk posed by the stack will be removed when it has been brought down to a height of 47 metres. In the unlikely event of the stack falling when it is at this height it could not fall on to any sensitive buildings nearby. We expect to achieve this milestone by spring 2018.

The Final Countdown

We are close to completing our reprocessing mission at Sellafield.

We have been reprocessing used nuclear fuel at Sellafield since the 1950s. As part of the site's early operations, fuel from the Windscale reactors was reprocessed in order to capture the plutonium needed for the UK's atomic weapons programme.

Used fuel is reprocessed by stripping the outer cover from fuel, dissolving the fuel and using chemical processes to separate uranium and plutonium from waste materials.

There are two buildings at Sellafield that are dedicated to reprocessing different types of nuclear fuel; the Magnox reprocessing plant and the Thermal Oxide Reprocessing Plant – or Thorp as it is better known.

Magnox reprocessing

Used fuel from the UK's fleet of Magnox reactors, including our own Calder Hall, is reprocessed in the Magnox reprocessing facility. Our ability to take the fuel from the stations in line with an agreed programme has been a critical support to their electricity generating programme.

Tonnes to go: 1,301

as of 18 January 2018, there are 1,301 tonnes of Magnox fuel to be reprocessed until closure of the Magnox operating programme.



Thorp reprocessing

Thorp reprocesses Oxide fuel from both UK and overseas customers and, at the height of its operations, was the biggest Yen earner in the UK. Revenue from both Thorp and Magnox reprocessing is used to help fund our risk and hazard reduction mission.

Tonnes to go: 450

as of 18 January 2018, there are 363 tonnes of Advanced Gas-cooled Reactor fuel and 127 tonnes of Light Water Reactor fuel to be reprocessed.



THE RIGHT SKILLS IN THE RIGHT PLACES

Making sure you have people with the right skills in the right places at the right time is challenging for any company. But the stakes are particularly high when it's an internationally important nuclear company going through significant change. Our people are at the heart of our changes and we are already seeing them take up the next phase of their Sellafield careers.

We are moving on from our proud reprocessing history and becoming an organisation focused on environmental remediation and we know that our people are at the heart of those changes.

Everyone has a part to play and our focus is on reskilling and redeploying our current employees to get the right combination of skills and roles that will transform our business.

This not only allows us to accelerate our high hazard mission but it will also help to maintain sustainable employment in West Cumbria and Warrington. With less than 18 months until the end of reprocessing within Thorp, we have started the work to redeploy and reskill these employees to support other areas of the business. We have also redeployed people from all over the business to project management, construction, risk and pre-operations and commissioning areas, where there is a sustained demand for these skill sets.

As a result, we've seen a lot of interest from our people as they begin a new phase in their Sellafield lives. Here's a snapshot of where it's already happened.



> Meet the people



GRAHAM FALCON
PRE-OPERATIONS TEAM MEMBER
SELLAFIELD LTD

Graham Falcon joined Sellafield 15 years ago to work on the Sellafield MOX Plant. After 15 years on shifts, he is getting used to some big changes as part of the pre-operations team at our Box Encapsulation Plant.

“When the Box Encapsulation Plant opportunities came up it felt like it was the right thing for me. It’s completely different to anything I’ve done before but I think that’s what I needed – a complete change.

“It has given me the chance to get new skills and experiences. And I’m doing that with other people who are in a similar position to me. It’s also a chance to be in

at the start of something.

“We all know that Sellafield is changing. Buildings are coming to the end of their lifecycles so all the change that has been talked about is becoming real.

“Plants are closing and there will be lots of us who are going to end up doing different things. The reason I came to Sellafield in the first place was because the company I used to work for closed down. That’s what happens.

“I would rather have a choice and have some options about what I’m going to do rather than wait until I’m told that I have to move.”



ANDY FIRTH
TEAM MANAGER FOR
THE MEASUREMENT AND
ANALYSIS TEAM
NATIONAL NUCLEAR
LABORATORY

Andy joined Sellafield as a graduate trainee and has worked in variety of roles over the last 8 years. In 2017, he left to join the National Nuclear Laboratory (NNL).

“When I saw the role advertised I was interested. NNL and Sellafield are working in partnership and I had been involved in joint projects in the past.

“When NNL offered me the job I took a couple of weeks to consider what I wanted to do. It was a big decision as I obviously had to resign from my role at Sellafield to join NNL.

“I had really enjoyed my role at Sellafield and had a lot of responsibility in the company. Yet I felt the opportunity to continue to develop and learn was too good to miss. In the end it made the decision a relatively straightforward one.

“After being in my new role for just a week, I knew I had made the correct choice.

“The role is very similar in that I am involved in sample analysis for customers however the work is non-routine analysis. In my role at Sellafield’s Analytical Services, all my customers were internal whereas now I work for an array of different NNL customers based in the UK and abroad.

“I enjoyed working for Sellafield and gained lots of friends but have found exactly the same at NNL.”



RAY JONES
EQUIPMENT ENGINEER
SELLAFIELD LTD

Ray has been at Sellafield for almost 25 years. He worked in Thorp, first helping to commission the control system software and then as a controls and technical advisor.

“With my time at Thorp I had the chance to see it from different perspectives, first in commissioning and then from an operating and maintenance perspective.

“Fast forward to 2017, and we are looking toward the end of reprocessing. As part of the redeployment discussions my

past adventures as a pilot and maintainer of remotely operated vehicles with Sub Sea Surveys (latterly British Underwater Engineering) were noted. As a result I was invited to assist with the remote operated vehicles programme in Legacy Ponds, so I am making the move into a new post with Enterprise Plant Engineering.

“I am looking forward to my new role, taking on a new challenge and meeting new colleagues.”



CHRIS VAN DER LEE
**TECHNICAL FUNCTIONAL
 ADVISER**
SELLAFIELD LTD

Chris joined Sellafield to work in Thorp but has recently moved to be a technical functional adviser in the Box Encapsulation Plant (BEP).

“For the past five years I worked in operations support in Thorp but in December 2016 I applied for opportunities in BEP commissioning and pre-operations.

“We have been told what the end of reprocessing means and I decided that I wanted to get in at the beginning of something new.

“I’m using the skills and experience I already had but there’s a lot to learn about the new plant so we can produce documentation to be able to run it. We are doing this as the plant is going in so we can see how it all works together, which is great – we get to grow with it.”



JIM HUGHES
**SENIOR CONSTRUCTION
 COORDINATOR**
SELLAFIELD LTD

Jim joined Sellafield 15 years ago, first as an electrician, then in manufacturing support before taking on responsibilities for integrated works management. Jim’s latest role sees him working on the Sellafield Product and Residues Store Retreatment Plant as a senior construction coordinator.

“I had been in my last job for seven years and I was looking for something new. With that in mind I applied to be a senior construction coordinator.

“Since moving to the project directorate I’ve had a very positive experience. I am enjoying dealing with multiple stakeholders and working with a team that is focused on delivering the project goals. Every day is a challenge but it is really interesting.

“I am constantly on the move, undertaking the day job and the training associated with my new role, but I can honestly say that I am relishing the work.”



BARBARA KINRADE
**HEAD OF OPERATIONS AT
 BOX ENCAPSULATION PLANT**
SELLAFIELD LTD

Barbara has taken on 11 people as a result of redeployment and transition.

“Box Encapsulation Plant commissioning and pre operations are really important for our mission. They will allow us to treat and store in a single place waste that is currently in different parts of the site.

“When we advertised the opportunities I wasn’t sure what interest we would have but 110 people applied and we have selected 58 people to join us. Everyone identified has the right skills we need and, just as importantly, the right attitude.

“In total we had around 30 people join us in 2017, more people joining this year and the last few joining in April 2019.

“Half of the people are from Thorp, which you might expect considering the timescale for the end of reprocessing but the other half are from across the site.”

CATHERINE JACKSON

PRE OPERATIONS TEAM MEMBER

SELLAFIELD LTD

Catherine moved out of Magnox reprocessing to begin a new role in pre-operations for the Box Encapsulation Plant Product Store (BEPPS).

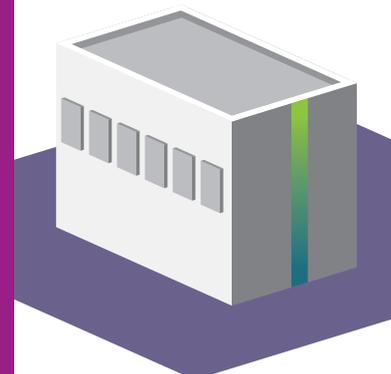
“I knew that working on reprocessing meant that my role was going to end within Magnox – I wanted to take control of the next phase of my career. I thought that if I went to pre-operations for BEPPS,

I could use the experience I had with pre-ops in the past but on a completely new facility.

“In the end, the decision about taking the new role was about whether I was happy coming off shifts. I spoke with my manager and decided that I wanted to be in with the new plant from the start. In a few years I’ll be able to say I was there when it was concrete and empty and you could walk into it. I wouldn’t have been able to say that if I had stayed where I was.

“To anyone thinking of doing it, I’d say just do it – it is just a move within the same company and you know what it’s like to work here already.

“I enjoy working at Sellafield. In the 10 years I’ve been here I’ve had six jobs so I’m constantly learning and taking on new challenges. This role is the latest opportunity I’ve had to do that.”





Our unsung
heroes



When you think of buildings at Sellafield you might automatically think of our more famous nuclear landmarks, like Calder Hall or Thorp, but without facilities Water Treatment Plant and Inactive Tank Farm, our nuclear plants couldn't work.

The Water Treatment Plant and Inactive Tank Farm are an important part of Sellafield's infrastructure. Whilst they aren't what we would class as nuclear facilities, without them many of our nuclear processes and operations would come to a halt.

Without the Water Treatment Plant we wouldn't have suitable quality demineralised water for steam production and plant processes. It also takes water from Wastwater, boreholes, mines and the River Calder and treats it to produce the demineralised water that we need to keep used nuclear fuel cool in our storage ponds.

The teams working in the Inactive Tank Farm receive, store and distribute chemicals that are needed for many of our plants across the site.

Dan Rooney, deputy operations manager, explains: "These two facilities seem relatively low key compared to the bigger operational plants on site, but they are part of the site's jigsaw that enables plants to operate effectively.

"Our teams come to work, get on with their day job and probably don't consider the massive contribution that they are making to keep Sellafield working safely." ■



THESE TWO FACILITIES SEEM RELATIVELY LOW KEY COMPARED TO THE BIGGER OPERATIONAL PLANTS ON SITE, BUT THEY ARE PART OF THE SITE'S JIGSAW THAT ENABLES PLANTS TO OPERATE EFFECTIVELY.

INTERVIEW



BY STEVE BARNES



Duncan Thompson

With a career that already spans the public and private sector, not to mention a few countries around the world, **Duncan Thompson** is bringing a new perspective to our Board as a **non-executive director**. We sat down with him to talk about progress at Sellafield, the success of our model change and the benefits of living in one of the most beautiful parts of the world.

The latest addition to the Board – Nuclear Decommissioning Authority’s (NDA) Sellafield Programme Director Duncan Thompson – brings a wealth of engineering and management experience from businesses across the globe.

Within NDA, Duncan is accountable for the nationally important mission of safely and securely remediating the Sellafield site, having led the model change programme and formation of our company in 2016 to become a wholly owned subsidiary of the NDA.

Before arriving at this key strategic position he’s had an interesting and varied career, starting at the London Stock Exchange in 1986. He then studied mechanical engineering and went on to gain a Master’s degree in soil and water engineering.

During and following his studies, he worked for Ford Motor Company as a production engineer and for UNICEF where he led several large water supply development programmes in Zimbabwe, living there for four years.

Aged 30, he returned to the UK and joined GeoDelf Engineering and spent three years leading the delivery of multi-site environmental engineering programmes for companies such as National Grid Transco, Railtrack and GKN. This was followed by a six year stint with the engineering and management consultancy firm Arthur D. Little.

Duncan said: “I had a lot of responsibility for selling and delivery in this role, at a relatively young age and it gave me great experience in managing a real variety of projects in the rail, power and oil and gas sectors all round the world with demanding Board level clients. It was great fun, but as my children approached secondary school age I wanted to spend more time with them and less time in airports.”

Duncan saw the NDA being set up in 2005 and was attracted by the professional challenge posed by an engineering, environmental and management task of this magnitude. So he set

up a small consulting office in Cockermouth for A.D. Little and won work with NDA reviewing the 2006 lifetime plans.

After a year of weekly commuting from Cambridge, Duncan took a job with the NDA and moved to Cumbria with his family and he hasn’t looked back.

Starting in the NDA’s internal audit team, he moved on to run NDA’s early organisational change programme, then managed their interface with Government. Latterly he was the head of strategy development and senior advisor to the Chief Executive Officer before moving full time to lead the implementation of the Sellafield model change programme.

He said: “Joining the NDA was a big change as I hadn’t worked for a government organisation; I was taking a pay cut and moving my family to a new location. It was definitely the right move, professionally there are few challenges that match Sellafield and we make the most of all that the Lake District offers.”

Regarding his appointment to the Sellafield Ltd Board Duncan said: “Since 2013, I have worked hard to bring about changes at Sellafield and I’m delighted to now be part of the Board that is delivering real progress within the new model. I have energy and optimism, both for delivering a safer site sooner and for making future use of the valuable skills and experience at Sellafield. We spend £2bn a year at Sellafield and there is huge socio-economic and growth potential in that spend, in addition to the value of the work delivered on site.”

Does he think that our transfer from private sector to a subsidiary of the NDA in 2016 was successful? He said: “We have removed the contractual boundary between NDA and Sellafield Ltd and created strong alignment between the two organisations, with common motivation to address long term, challenging issues. We all recognise the need to get the job done; we have a greater,



shared risk appetite and an ambitious and capable leadership team. Very importantly, we made this significant change without any deterioration in delivery and safety performance.”

How well does he think we are delivering at Sellafield? He said: “In the legacy ponds and silos we are on the cusp of moving from the historical position where these posed a real technical conundrum, to a position of knowing how we will do it, making first retrievals and then optimising a long period of retrieval and treatment operations.”

Other successes since model change include:

- Strong leadership, ambitious for delivery and for change
- Stability in the project portfolio
- Greater reliability of underlying infrastructure as a result of long term focus and significant investments
- Progressive and enabling approach to nuclear materials management
- Spent fuel management delivering planned Thorp and Magnox reprocessing closure dates.

Key future challenges, according to Duncan, include: “being recognised as delivering real value on the non-discretionary streams of work – high hazard retrievals and treatment, spent fuel management and special nuclear materials management, so that we will continue to be funded to finish the job of decommissioning and site remediation.

“By delivering value, we need to earn the right to tackle that long term decommissioning and remediation work sooner and get the job finished, thereby delivering value for the taxpayer while maintaining capability and employment for several decades to come.”

Aside from all that a senior management role entails, Duncan enjoys getting out and seeing the great work that is being done on plant. He said: “I love engineering problems and neat solutions, I’m a keen mechanic and builder myself and make time to get out and talk to the people that are doing the actual work – after all it’s that real work that is of most value – and we mustn’t lose sight of that.” ■



TO INFINITY AND BEYOND

We joined a stellar line-up of international superstars to inspire Cumbrian students to take up a career in science and engineering at the 2017 Infinity Festival. Professor Brian Cox was the biggest name on the bill, but our own business and scientific superstars were on hand to help inspire the next generation.



Guest stars, including BBC broadcaster, Professor Brian Cox, gave motivating talks, exciting hands-on experiments and workshops to more than 200 Cumbrian students aged 13-14 at the 2017 Infinity Festival. The event, held at West Lakes Academy in Egremont, was designed to inspire the students to become the next generation of scientists and engineers.

The festival was hosted in partnership with the Science Summer School, an annual event held in London. Co-founder, Lord Andrew Mawson OBE, said: "In July 2016 we hosted a group of young people from West Cumbria at the Science

Summer School. We were so inspired by the levels of enthusiasm that we decided to hold a similar event in Cumbria.

"Our research has shown that the event has not only built confidence but has enabled 50% of pupils, many on free school meals, to gain places at Russell Group Universities. In addition, around 50% have gone on to study STEM subjects."

Pete Woolaghan, Chair of the festival organising group, said: "This is the first festival of its kind to be held outside London and it's an amazing opportunity for Cumbria's young people. The energy sector in Cumbria is due massive investment in coming years and we want young people to make the most

of these opportunities. We believe the whole community of Cumbria needs to encourage and support young people to be inspired to become the next generation of world-class scientists and engineers and to be supported to study, and succeed, in gaining the necessary qualifications."

The festival has been created by The University of Manchester's Dalton Nuclear Institute, working closely with the REACT Foundation and supported by industry and academia including: Sellafield Ltd, NuGen, NNL, NDA, UCLAN, the University of Cumbria and West Lakes Academy, plus the Well Whitehaven initiative, who are working to improve health and wellbeing by realising the potential of people and communities.









INFINITY THROUGH THE LENS

Michael Lishman from our corporate affairs team provided photography for the event and ran a photography workshop with some students from West Lakes Academy who were on hand to help with the festival.

The A-Level photography students were set tasks to capture different aspects of the event, using various camera techniques and an eye for creativity. The photographers chose their favourite photos from the day and Michael helped them to use editing software to bring out the best in their photos. One of his top tips that he shared with the budding photographers

was “Don’t wait for the perfect photo to happen, create your own.”

This tip really stuck with one of the students who said: “Michael taught us that sometimes in photography, you have to make your own opportunities. I wouldn’t ordinarily have felt confident enough to go and speak to guests like Professor Brain Cox and take his photo, but by the end of the day after some coaching from Michael, I felt like more of an established photographer and managed to get some great shots of the Professor – I even ended up getting a selfie with him and my lanyard signed!”

Video footage was taken throughout the day which would later be edited into an Infinity highlights video, capturing the best bits from the festival.

Georgia Pearson from corporate affairs supported the crew by doing short ‘vox pop’ interviews with guests at the event including VIP visitors and the students themselves.

The festival highlights video was shown later that evening during the final part of the event, where parents of the students were invited to see and experience some of the weird and wonderful things that the students had been up to.

“We were thrilled to work with the other sponsors to help bring this inspiring event to Cumbria and show young people that they can be the next scientists, engineers and technological experts of the future.”

PAULINE FARRELL, SOCIAL IMPACT

#INFINITYNOLIMITS

Behind the scenes, project management apprentice, Andrew Bennett, was key in sharing the story of the festival.

In a jam-packed day full of workshops, guest speakers, demonstrations, robots and simulators, Andrew got the Cumbrian community talking about science, technology and engineering on Twitter using the hashtag #InfinityNoLimits creating a constant feed of information, photos and videos being shared from the event.

Andrew said: "There was so much going on during the day that Twitter turned into a bit of a live feed, one minute I was tweeting about a dancing robot, the next it was photos of dry ice demonstrations."

"It was great to see so many local people and businesses join the conversation by using the Infinity hashtag. The likes, comments and retweets were coming in thick and fast, there was just as much of a buzz on Twitter as there was in the room." ■

"The Infinity Festival was a fantastic event that really got the whole community enthused about science, technology and engineering, all of which will play a big part in of the future of Cumbria. We are proud to have supported such an impressive and prestigious event."

JAMIE REED, HEAD OF COMMUNITY AND DEVELOPMENT





Women in nuclear



Madeleine Archer



Lydia Rowell

Demonstrating excellence in their roles at Sellafield, inspiring and mentoring others in their field, and supporting their chosen professional bodies is all in a day's work for our award winning women in nuclear.

Deputy operations manager for our legacy ponds and silos, Madeleine Archer, has won the prestigious Karen Burt Award 2017 from the Women's Engineering Society for her engineering excellence.

Chair of judges, Sally Sudworth, said: "Madeleine's passion for her work came across very clearly. Her role as a student ambassador in promoting engineering to school children is impressive, as is her mentoring of engineering graduates at Sellafield.

"Her support for her professional body, the Institution of Chemical Engineers, is impressive as was her involvement in a BBC documentary about Sellafield to help promote engineering and the nuclear industry. The panel was also impressed with

Madeleine's active role on the industry advisory board for the engineering and applied science department at Aston University."

Mechanical engineer Lydia Rowell is up for a national award, after being named the region's 'Advanced Level Apprentice of the Year' by the National Apprenticeship Service

The 20-year-old works as a mechanical fitter, having just completed a four year apprenticeship.

Lydia said: "I am really happy to win this award and will use this opportunity to keep promoting apprenticeships locally and nationally. Being able to inspire young people is highly rewarding." ■



THROUGH THE LENS: APPRENTICES

As we launch this year's apprentice scheme we take a look back at more than 65 years of investment in apprentice training at Sellafield.

Almost 10,000 nuclear workers started their career as an apprentice at Sellafield.

1950s



2017





Hands-on learning and the sharing of knowledge between generations has always been at the heart of our apprentice training programmes.



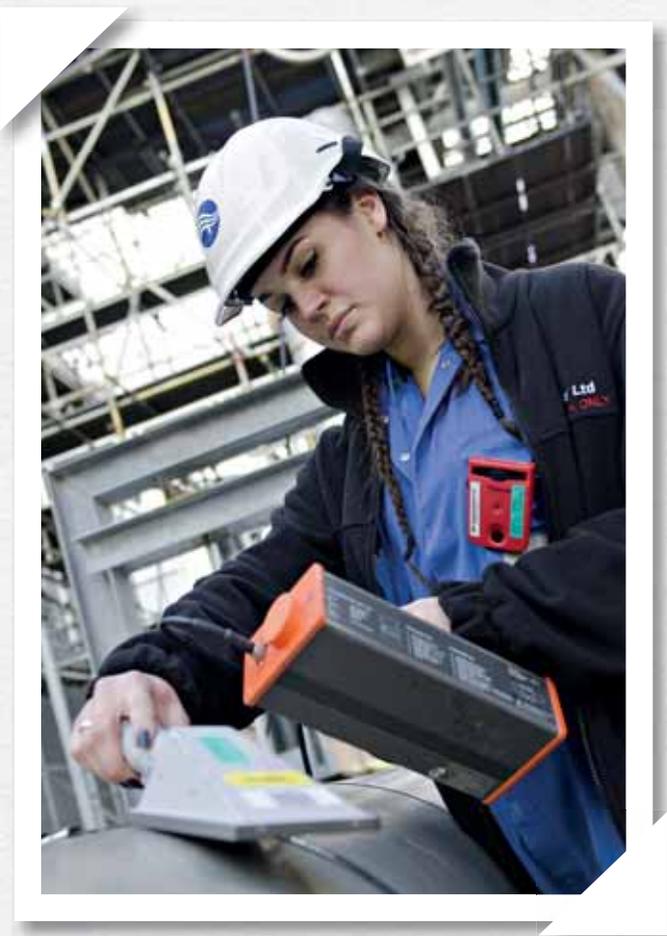




Our modern apprenticeship programmes give young people the skills they need to have a successful career at Sellafield and beyond.



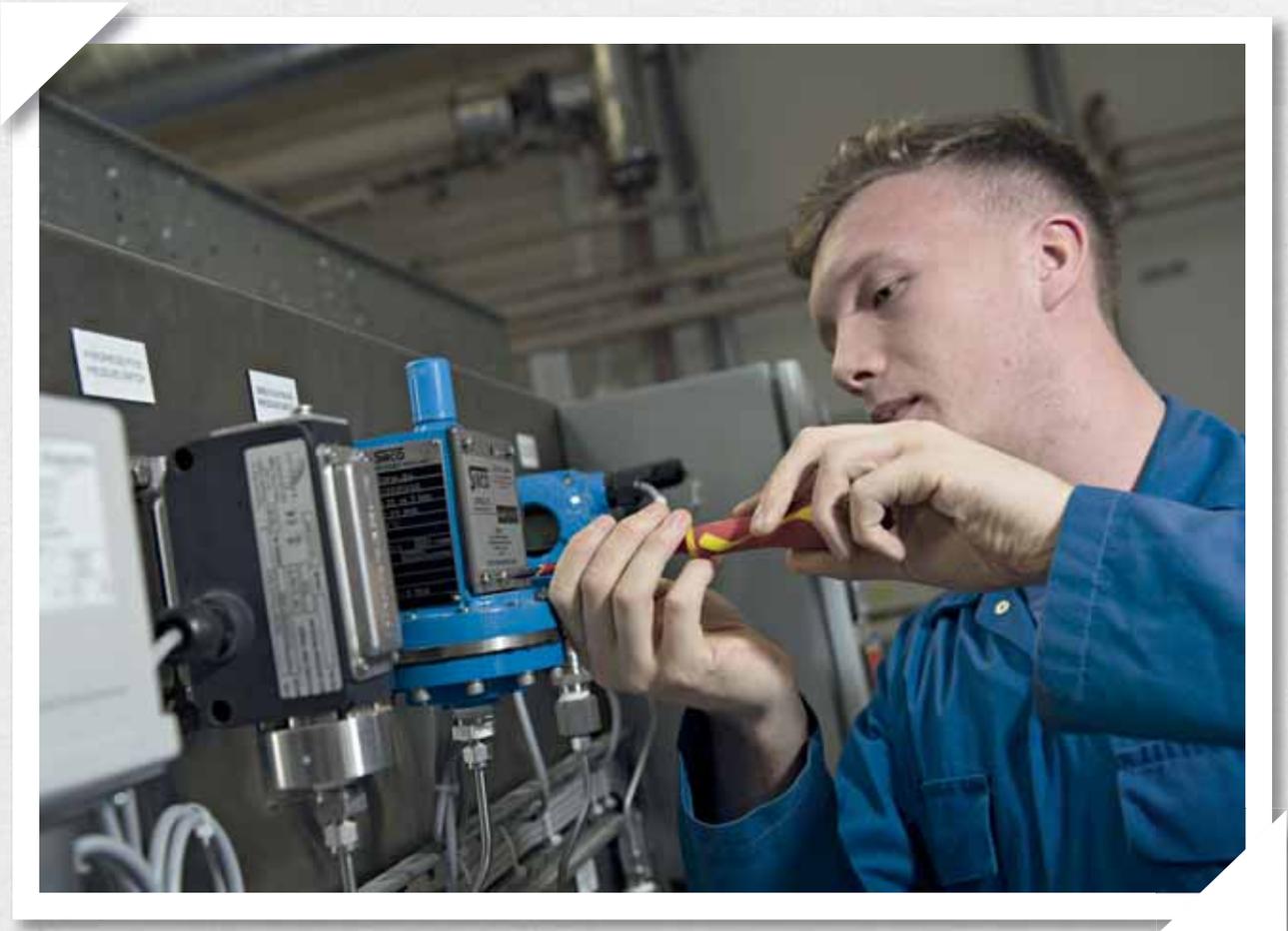
Our apprentices start their training with our supply chain partners, Gen2.





In 2017 more than 140 apprentices, including 35 degree-level apprentices, started their career with us.









Our apprenticeship schemes range from traditional engineering, mechanical, and electrical programmes through to business administration, health physics and project management.



98% of our apprentices choose to continue their careers with us at the end of their training.



10 FACTS ABOUT INVESTING SKILLS IN OUR WORKFORCE



1 **322** 

of our employees are currently participating in higher education courses.

2  We have **more than 5,000** further and higher education courses available from NVQs to PhDs.

3 **THIS YEAR MORE THAN 130 OF OUR EMPLOYEES STARTED HIGHER EDUCATION COURSES.** 

4 **529**  **TO STRENGTHEN OUR PROJECT MANAGEMENT SKILLS BASE ALL OF OUR CURRENT AND NEW PROJECT MANAGERS COMPLETE THE ASSOCIATION OF PROJECT MANAGEMENT LEVEL D AWARD – A RECOGNISED KNOWLEDGE-BASED FOUNDATION LEVEL QUALIFICATION. 529 EMPLOYEES HAVE ALREADY COMPLETED THE QUALIFICATION.**

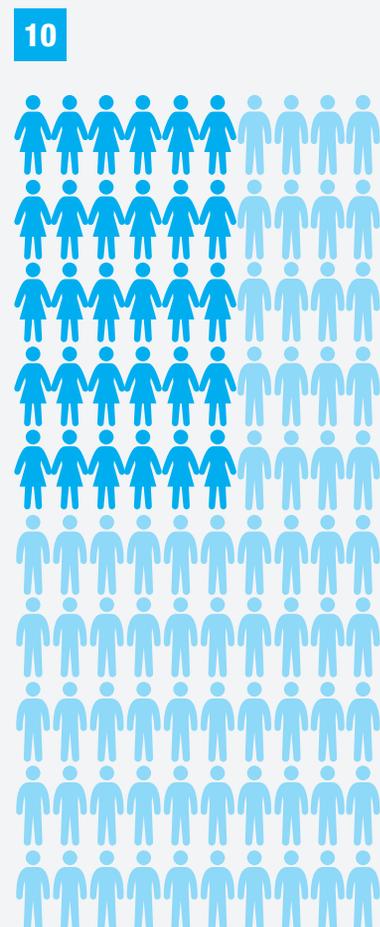
5 **37 YEARS**

We have had our current **dedicated training centre** at Sellafield for 37 years.

6 **100+** 

More than 100 employees have gained their apprenticeship degree with us and a further 100 are currently completing the Degree Apprenticeship scheme.

7  We are an Apprenticeship Trailblazer for the government, leading and contributing to the development of a number of apprenticeship standards, including nuclear, project management and craft related apprenticeships.



30% OF ALL SELLAFIELD LTD APPRENTICES ARE FEMALE.

8 **10,000** **65 years.**

We have trained 10,000 apprentices over the last

9 **21** As well as traditional trade apprenticeships we offer **21 diverse schemes**, offering apprenticeships from Level 2 through to Level 6 BEng degree.

28 SEPTEMBER 2017

DIRECTORS' FORUM

Sellafield is changing – and we're committed to working with our partners in an open, honest and transparent way. That was the key message taken away by the 400 people from the supply chain who attended our first Director's Forum.

Directors from across our supply chain came together at Energus last September to hear about our new supply chain strategy, to speak to our project teams and to tell us how we can be a better client.

Head of supply chain development and innovation Emma-Jayne Gooch said: "The day was essentially a really big conversation, which might sound obvious but marks a real step change for our organisation. We weren't there to talk at the supply chain, we were there to talk with them.

"We had a mix of our employees and representatives from our tier 2 partners who could talk to the supply chain about the work they are doing at Sellafield, and the supply chain in turn talked about how their businesses might be able to help.

Our supply chain director, Martin Chown, added:

"We are pushing to become a business that genuinely sees the supply chain as an extension of our own organisation because we see the true value that they bring to our work at Sellafield."

The event also saw the launch of a new initiative designed to support local and national small to medium sized enterprises. 'LINC with Sellafield Ltd' sees businesses register and then collaborate to propose solutions to specific challenges we have at Sellafield. For more on the scheme, see page 54.



Date:
28 September 2017
Location:
Energus, Whitehaven





“It was brilliant to have so many valuable clients and peers in one place, and to talk to the people that genuinely understand our collective challenges, and more importantly the people that can influence them and have the ability to turn them into opportunities.

“I left the event feeling really optimistic and with belief that the change journey is actually happening, rather than the supply chain standing at the bus stop watching we’ve been invited to take a seat on the bus as well!”

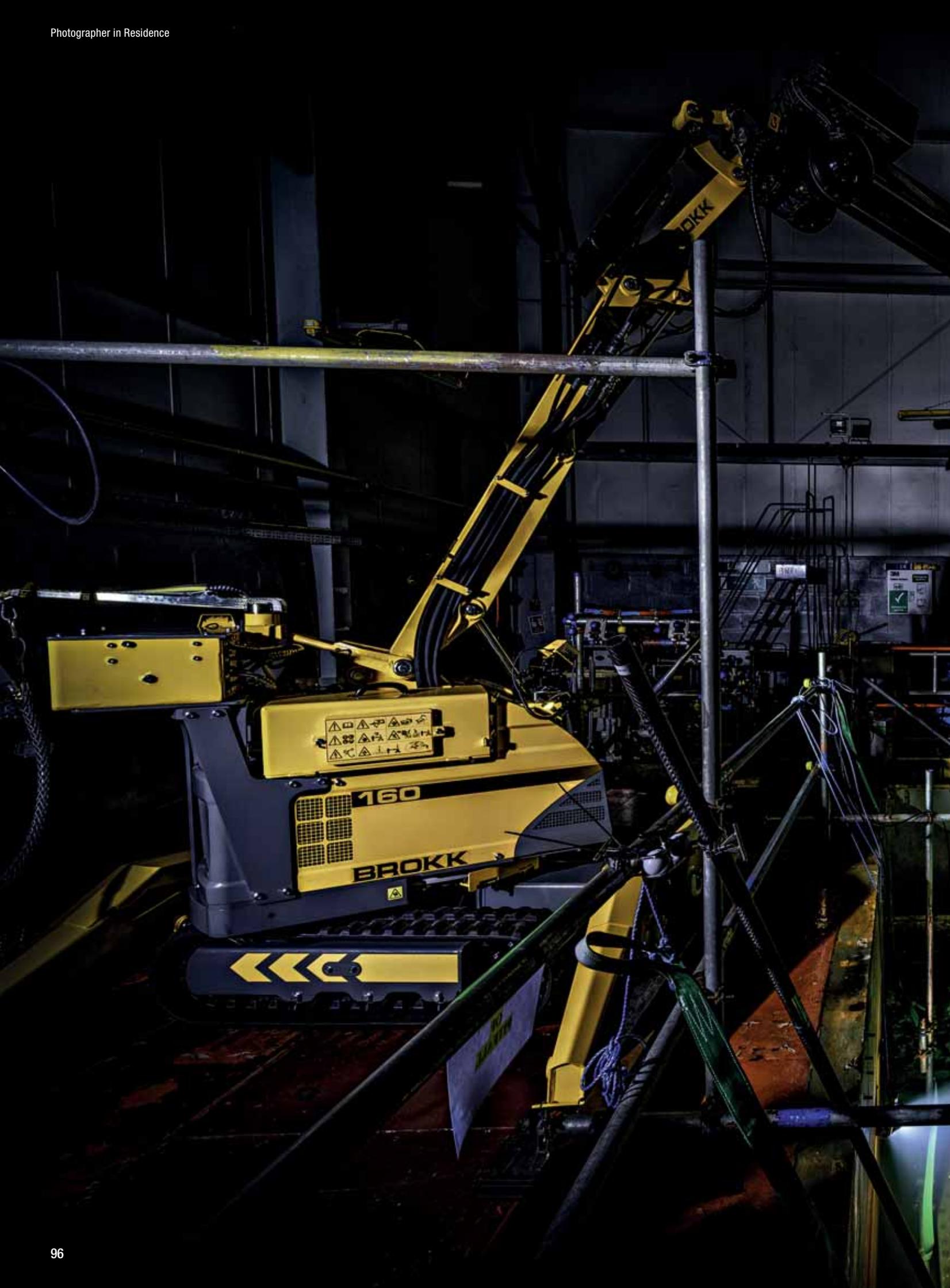
Gill Marsden, MD, NIS Ltd





Our supply chain strategy is available now – download your copy from www.gov.uk/sellafieldtd







PHOTOGRAPHER

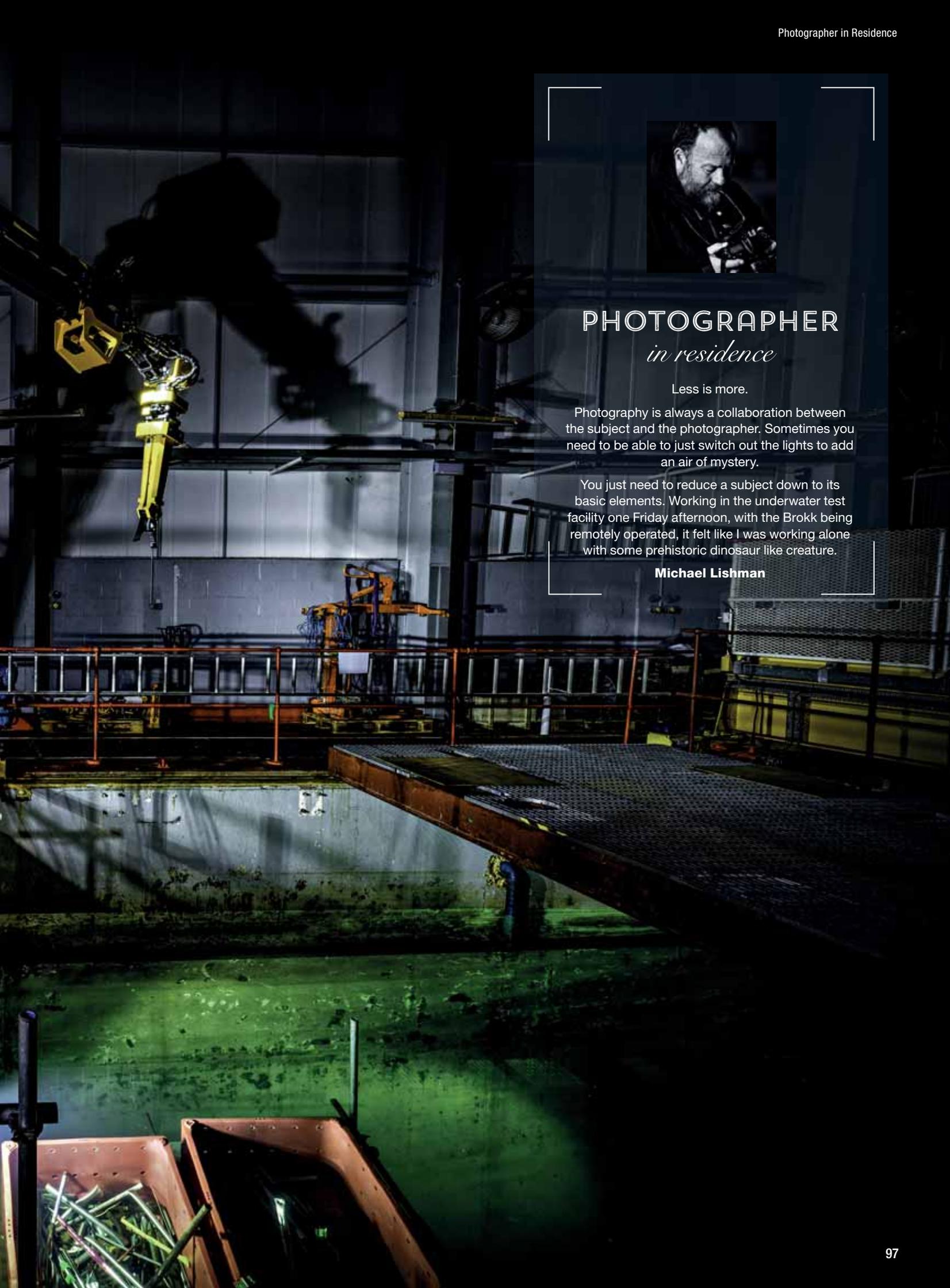
in residence

Less is more.

Photography is always a collaboration between the subject and the photographer. Sometimes you need to be able to just switch out the lights to add an air of mystery.

You just need to reduce a subject down to its basic elements. Working in the underwater test facility one Friday afternoon, with the Brokk being remotely operated, it felt like I was working alone with some prehistoric dinosaur like creature.

Michael Lishman





Julia McClelland

The tragic events in New York on 11 September 2001 caused many people around the world to pause and reflect. For Julia McClelland it triggered a career change that has led to her becoming the first woman in the nuclear industry to achieve Chartered Security Professional Status.

How did you get into security?

The re-organisation of the United Kingdom Atomic Energy Authority at Windscale Site gave me the opportunity to work in information security. I had worked and trained in conventional and radiological safety but security was always my passion.

I had been in New York a few weeks before the 9/11 terrorist attack. I had joined family and friends for a meal in a restaurant called 'Windows on the World' in the North Tower. On 9/11 the 72 members of staff, some of whom had looked after us, perished. I felt compelled to do something to make sure that such events didn't happen to me, my family, workplace or community.

What made you decide to go for professional accreditation?

I wanted to get formal recognition of my 26 years of specialist knowledge, skills and experience. I was already an active member of the Security Institute. My boss had been 'admitted to the Register' as it's called and encouraged me to apply.

The application process and the 10,000 word dissertation were a challenge but it has also given me experience that I could bring back to Sellafield. For example, I'm strengthening our arrangements for dealing with unmanned aerial vehicles, which pose security challenges for us as well as bringing benefits.

I am proud that my accreditation means that I am the first woman in the nuclear industry to achieve Chartered Security Professional Status.

What keeps you awake at night?

Global and national security threats are always at the forefront of my mind but I am encouraged by the progress being made around raising awareness of the terrorist threat to the UK. Initiatives like Action Counters Terrorism encourage people to trust their instincts and if they see or hear something that could be terror related they can call the anti-terrorism hotline confidentially on 0800 789 321.

Closer to home we have something similar at Sellafield. Project Servator recognises that people in the community can be extra eyes and ears in our efforts to keep the site safe and secure. If people in the area see or hear anything suspicious they can call 019467 73999.

How has your job impacted on your personal life?

After 31 years working as a nuclear safety professional, upholding standards and expectations are part of my DNA. I'm much more aware of potential threats both safety and security related than others because of this, which is a very good thing.

What's next for you?

I am passionate about encouraging others to join the Security Institute which is the largest professional membership body for security professionals. My work on the validation board helps to uphold standards in our profession and I want to share my knowledge and experience with others and set an example to those who are contemplating a career in security.

Julia's favourite things

- FAVOURITE BOOK?**
A YEAR IN PROVENCE BY PETER MAYLE
- FAVOURITE FILM?**
SKYFALL – DANIEL CRAIG IS A GREAT 21ST CENTURY BOND
- FAVOURITE FOOD?**
CHATEAUBRIAND
- FAVOURITE HOLIDAY DESTINATION?**
THE MALDIVES
- FAVOURITE BAND?**
TAKE THAT

Sellafield

NEXT ISSUE

Issue 09
April 2018

In Focus:

High level waste

Next Generation:

Inside the National
College for Nuclear

Return on Investment:

Community investment

Ready for
retrievals:

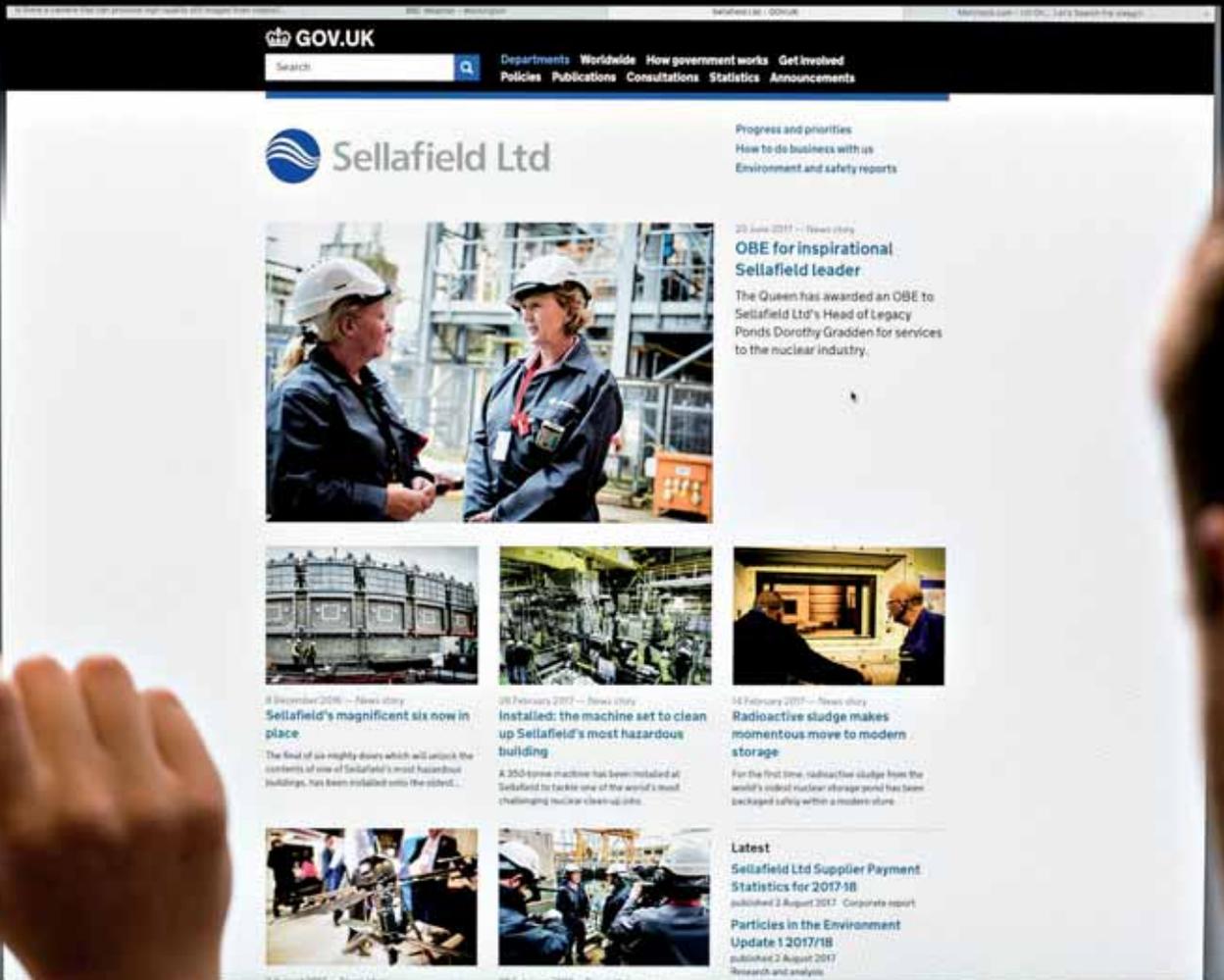
The Pile Fuel Cladding Silo

 Sellafield Ltd

Available
April
2018

For all things Sellafield,
visit our website:

www.gov.uk/sellafieldltd



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 **Sellafield Ltd**

Progress and priorities
How to do business with us
Environment and safety reports

25 June 2017 — News story
OBE for inspirational Sellafield leader
The Queen has awarded an OBE to Sellafield Ltd's Head of legacy Ponds Dorothy Gradden for services to the nuclear industry.



8 December 2016 — News story
Sellafield's magnificent six now in place
The final of six mighty doors which will unlock the contents of one of Sellafield's most hazardous buildings, has been installed into the vessel...



18 February 2017 — News story
Installed: the machine set to clean up Sellafield's most hazardous building
A 350-tonne machine has been installed at Sellafield to tackle one of the world's most challenging nuclear clean-up jobs.



14 February 2017 — News story
Radioactive sludge makes momentous move to modern storage
For the first time, radioactive sludge from the world's oldest nuclear storage pond has been packaged safely within a modern store.



Latest

Sellafield Ltd Supplier Payment Statistics for 2017/18
published 2 August 2017 Corporate report

Particles in the Environment Update 1 2017/18
published 2 August 2017 Research and analysis