

NDA Monthly Update

December 2017

Summary

- NDA launches new digital newsletter
- Demolition of Sellafield's tallest chimney
- Trapped fuel removed from Dounreay reactor
- Update on Magnox competition inquiry
- Specialist equipment dries out waste at Dungeness
- Busiest year yet at supply chain event
- £3 million competition shortlists innovative ideas
- Mission accomplished as college opens doors
- Research facility's 10-year journey
- Tiny robot's clean-up mission
- Bradwell completes waste programme
- Landmark containers move radioactive waste

Diary Dates 2017-2018

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| • NDA Draft Business Plan published | Early December |
| • Research Frontiers in Decommissioning & Radioactive Waste Management conference, Leeds | 12 December |
| • World Nuclear Symposium 2017, London | 13-15 December |
| • Department for International Trade Civil Nuclear Showcase 2018, London | 27-28 February 2018 |

NDA launches new digital newsletter

The NDA has launched an online newsletter to keep stakeholders up to date with developments. The first edition of **#Decomm** was published in November and issued to all those who already subscribe to the NDA's e-bulletin. Anyone interested in receiving the newsletter can sign up via the website.

[Weblink: Find out more about #Decomm](#)

Sellafield's tallest chimney on its way down

A 60-year-old chimney on top of Sellafield's First Generation Reprocessing Plant is being painstakingly taken down by hand at a rate of one metre a week. At 61 metres high, sitting on top of the 61-metre building, it was the tallest structure on site until a modern replacement was built. Conventional demolition techniques like explosives and cranes cannot be used in such a crowded, hazardous environment, so a self-climbing platform has been designed and installed, where workers will remove each piece of concrete and steel by hand.

[Weblink: Decommissioning reaches new heights](#)

Free at last as jammed fuel is removed

Work is now under way to retrieve the remaining radioactive fuel elements that have been stuck for decades inside the Dounreay Fast Reactor. When the dome-shaped experimental reactor closed in 1977, most of the core fuel was removed. But follow-up work came to a halt when some of the metallic 'breeder' elements in the zone surrounding the core were found to be swollen and jammed. Almost 1,000 – around two-thirds of the total - were left in place. Now, after many years of work to design and test remotely operated equipment, the elements are being removed.

[Weblink: Breeder fuel removal under way](#)

Update on inquiry into Magnox competition

The [National Audit Office](#) has published a report on the NDA's award of the Magnox contract in 2014, while the Holliday inquiry has also published its interim findings on the procurement process for management of the 12 sites. The full Holliday report is expected in the New Year. Meanwhile, the NDA is terminating, by mutual agreement, the Magnox PBO contract with the Cavendish Fluor Partnership (CFP) in 2019.

[Weblink: The Holliday Inquiry](#)

Drying system to tackle Dungeness waste

Specialist equipment is being installed at Dungeness A in to dry out radioactive waste, halving its volume and making it ready for long-term storage. As much as 99 per cent of moisture is removed from intermediate level waste (ILW) through the Advanced Vacuum

Drying System (AVDS), reducing volume and cutting the cost of storing the material. AVDS was first used at the Berkeley site in 2013 to tackle radioactive sludge, resin and other waste generated while the site was producing electricity and in the early stages of decommissioning. It proved such a success that it was next dispatched to Bradwell where it was put to work helping to manage the site's radioactive waste inventory.

[Weblink: Cutting-edge kit set for dry run](#)

Busiest year ever at supply chain event

A record turn-out of 1,600 visitors ensured success for the NDA Estate Supply Chain Event 2017. The visitors, from all across the UK and overseas, enjoyed a day of exhibitions and networking at the annual event in Manchester, now in its seventh year. Organised jointly by the NDA and its business units with the aim of increasing visibility of opportunities for suppliers, a highlight of the day was the awards ceremony.

[Weblink: Supply chain event success](#)

Research competition shortlists innovative ideas

Fifteen ideas were shortlisted in a £multi-million competition to find new technologies for cleaning up Sellafield hazards. The shortlisted entries, many from companies new to nuclear, are drawing up feasibility studies and the most promising ideas will be selected to move onto the next stage. The competition, run by the NDA and the government's Innovate UK, awarded an initial £750,000 to 15 newly formed consortia to help them develop ideas on dismantling a large number of highly radioactive 'cells' at Sellafield's two reprocessing plants which are set to close by 2020. The remaining funds will support the next stage, when prototypes will be developed for testing.

[Weblink: Innovation ideas shortlisted](#)

Mission accomplished as labs are transformed into college centre

The doors are now open at a new college campus built on the former research labs site next to the redundant Berkeley power station. The Gloucestershire Science and Technology Park, which also houses business units, is the first time in the UK that a decommissioned nuclear site has been transformed into educational facilities. The NDA had once planned to demolish the old labs complex, which supported the entire UK nuclear industry until the 1980s, but discussions with local stakeholders and South Gloucestershire and Stroud College, which drove the development, led to the more ambitious vision.

[Weblink: College open for learning](#)

Dalton Cumbrian Facility's 10-year journey

A report has been published following the conclusion of a 10-year collaboration between the NDA and The University of Manchester that established the world-leading Dalton

Cumbrian Facility (DCF). Each party contributed £10 million to develop the cutting-edge facility, which was designed specifically to fill a UK research gap and improve the UK's high-level nuclear decommissioning expertise. Its scientists have focused on radiation science and nuclear engineering decommissioning. The DCF, built in 2011, is now firmly established as an important contributor to nuclear expertise both in the UK and internationally.

[Weblink: Success of £20 million research facility](#)

Tiny robot on a clean-up mission

A small, remotely operated machine has been sent into Sellafield's most hazardous nuclear waste store for the first time. The AVEXIS robot offers the ability to 'see' inside the silo via cameras attached to its body and will help clear waste from the Magnox Swarf Storage Silo. AVEXIS was developed jointly by The University of Manchester and Cumbrian firm Forth Engineering, working with Sellafield. AVEXIS is the first robot of its kind to go from concept to market within five years and can fit through spaces of just 150mm space. At just £10,000, it is also the cheapest of its kind.

[Weblink: New robot helping to clean up Sellafield](#)

Bradwell completes waste programme

All Fuel Element Debris (FED) waste at Bradwell has now been successfully dealt with. The FED, consisting largely of the metallic outer casing of uranium fuel elements, is a major source of Intermediate Level Waste, however more than half was re-classified as Low Level Waste (LLW) following a collaborative project to extract and segregate material. This enabled more cost-effective treatment and disposal, while also saving two years off a project to dissolve the FED in an acid solution, reducing volumes by 90%.

[Weblink: Waste programme complete](#)

Landmark containers move radioactive waste

Brand new high-precision containers were used successfully for the first time to deliver radioactive waste from Harwell in Oxfordshire to Sellafield. The Type B Novapak stainless steel containers were commissioned by the Low Level Waste Repository (LLWR), near Drigg, as part of its transport services, and will replace an existing fleet of containers for Intermediate Level Waste (ILW). Each container is intricate to manufacture, requiring 12 welders, more than 750 welds and 1,500 items of material. With two layers of thermal shielding and impact protection, the containers will transport the Harwell ILW as well as plutonium-contaminated material (PCM) from the LLWR site to Sellafield for long-term storage.

[Weblink: High-spec containers to move waste](#)