NDA Nuclear Decommissioning Authority | Magnox | EnergySolutions

Delivering a cleaner future

Achievements update 2011

Introduction

As we approach the last lap of the 2011/2012 contract year, this brochure provides a quick snapshot of some of our achievements so far.

The Magnox Mission (right) is not just a set of statements, it is a description of real work being safely undertaken by our workforce and supply chain partners across our UK sites. This update gives some great examples.

If we keep it up, we can look forward to another year of safe and outstanding delivery for the Nuclear Decommissioning Authority.

Keep looking after one another.

N. B. Baldwin

Neil Baldwin
Managing Director, Magnox Limited

The Magnox mission:

The mission of Magnox Limited over the next five years is:

- To build on Magnox's excellent safety and environmental performance
- To maximise the value from the remaining generating sites, and safely bring to an end over 50 years of Magnox electricity generation in the UK
- To complete the programme for dealing with the remaining spent fuel (the MOP), and in so doing avoid leaving behind any legacy of this material
- To reduce risk and cost by delivering the Magnox Optimised Decommissioning Programme (MODP)
- To deliver a care and maintenance state on at least one Magnox site
- To pioneer innovative and transformational solutions, and ways of working
- To reshape and reduce our workforce in line with the MODP, whilst providing strong and responsive support to our people
- To deliver in partnership with our workforce and the trade unions.

And finally, recognising that the future beyond five years is all about decommissioning:

- To progressively transform Magnox Limited into a world class, high performing decommissioning organisation.

Cover image: Magnox has signed a contract for the transport and treatment of the first five redundant heat exchangers from Berkeley Site.

MODP Programme

Magnox has completed the insertion of its Optimised Decommissioning Programme (MODP) into the baseline.

This means that the revised programme of work for all Magnox sites is now the official plan that is being delivered on behalf of the Nuclear Decommissioning Authority.

The new programme is estimated to save more than

£1.3bn

The new programme is estimated to save more than £1.3 billion from the overall lifetime plan that was being delivered in 2010. This has been achieved through a combination of new technical solutions, such as GNS Yellow Boxes, and different working arrangements with the introduction of Strategic Programmes, in addition to extended generation at the remaining operating sites. This is the biggest change that Magnox has made since it became a contractor to the Nuclear Decommissioning Authority, and is recognised as the biggest revision to a work programme within the estate.

The culmination of these changes is the ability to deliver work quicker and cheaper, bringing forward care and maintenance entry dates at sites such as Bradwell and Trawsfynydd and progressing decommissioning work at other Magnox sites.

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Chapelcross ponds drain and clean

Work to drain and clean one of Chapelcross's cooling ponds was completed in October.

400,000

gallons of water were drained from the pond, sludge removed and walls and floors decontaminated enabling access for workers – with no need for respiratory protection.

This is the latest in a series of milestones reached as part of Magnox's Ponds Programme – following success at Bradwell and Hinkley Point A sites.

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Electricity generation

After 44 years of safe operation, Oldbury power station will stop generating electricity in February 2012.

Oldbury – the world's oldest operating nuclear power station – has generated over 130 TWh of electricity, enough to power one million homes for over

20 years

The proactive decision to shut down reactor one, the only operational reactor at Oldbury, was taken after careful consideration by Magnox and the NDA.

Both reactors were scheduled to close at the end of 2008. Since then the site has safely generated an additional seven terawatt hours (TWh) of low-carbon electricity, worth an around £300 million to the taxpayer.

Following the end of generation the site will move into a transition period where the reactors are defuelled, before decommissioning begins.

So far, this financial year, Wylfa and Oldbury have generated more than 3.4 TWh of electricity.

Wylfa has now received its last shipment of fuel from Springfields Fuel Ltd's manufacturing plant near Preston. Over the last 40 years, more than 600,000 fuel elements have been loaded in to the site's reactors.

Magnox is currently looking at the potential for Wylfa to continue generating beyond its planned closure date in 2012.

Dungeness A vaults are FED free

The team at Dungeness A scored a UK nuclear industry first in October, when it emptied the final batch of fuel element debris (FED) from the site's vaults.

This achievement is the result of 13 years' work by the site, which has overseen the pioneering process of retrieving and dissolving a mix of FED wastes in the unique 'Magnox Dissolution Plant'.

The plant, which started work in the 1990s, has processed 107 tonnes of FED – reducing the total volume by around

98%

£304m framework contract

Magnox has awarded a framework contract worth £304 million for deplanting, demolition and asbestos removal across 10 nuclear reactor sites in the UK.

A pioneering framework model has been established, including a number of specialist contractors including:

- **Keltbray/Doosan**
- **Babcock**
- **Celadon**
- **Erith, Squibb/LVI Group**
- **Nuvia**
- **EDS**
- **Kitsons**

The approach will allow more efficient commercial arrangements between Magnox and its contractors, reducing tendering costs and providing a supply chain 'toolbox' to meet the needs of the various projects over the coming years.

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Defuelling

This year, Magnox has already delivered more than 340 tonnes of spent nuclear fuel to Sellafield for reprocessing.

Chapelcross has removed and dispatched more than 50% of the spent fuel remaining in the site's reactors.

more than 50%

Over 19,000 fuel elements have now been removed from the site. Completion of the defuelling programme will result in 99% of the higher activity inventory being removed from the site.

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Berkeley boilers

Magnox has signed an £8M contract with Low Level Waste Repository Ltd (LLWR) and Studsvik for the transport and treatment of the first five redundant heat exchangers from Berkeley site.

The heat exchangers, or boilers, each weigh over 300 tonnes and were an integral part of the electricity production at the UK's first commercial nuclear power station which ceased generation in 1989.

Steve McNally, Berkeley Site Director, said:

"The removal of the boilers marks another important step in the journey towards delivering the site into a state of care and maintenance. This is a very visual demonstration of the progress Magnox is making with its decommissioning and hazard reduction programmes."

Hunterston A ponds

Magnox has pioneered a way of safely decommissioning and cleaning up one of the most challenging radioactive hazards on the site.

A system of floating 'pontoons' has been installed on the surface of the pond water, which will allow draining and cleaning to begin.

Ponds Programme Director, Steve Walters, said:

"One of our team identified the system after seeing it in use at a marina whilst on holiday and thought it would be perfect for our work on the ponds. We have a strategy of trying to use readily available proven technology from outside the industry to help clean up and decommission the nuclear legacy across our sites – this approach to innovation helps deliver other programmes of work faster, cheaper and more safely."

Hinkley Point A turbine hall

‘Spoil’ generated by preparatory work on EDF’s proposed Hinkley C site is now being transferred into the deplanted turbine hall at Hinkley Point A site.

Work on decommissioning the turbine hall began in 2003 with bulk asbestos removal. In 2006 work began to clear the building of all conventional plant in what was Europe’s largest turbine hall. Large items of plant were size reduced and sent from site for recycling. Over 11,000 tonnes of scrap metal was removed from the turbine hall during the ‘deplant’.

Since then, extensive work has been carried out in the turbine hall to prepare for the 50,000m³ of spoil that will be transferred to fill the basement.

50,000m³

Trawsfynydd capping roofs complete

Trawsfynydd completed a major milestone in September when it finished the construction of the reactor one and reactor one capping roofs – ahead of schedule and under budget.

The capping roofs will provide a protective shield above the reactors until the site’s final clearance phase in

2088

Work on the capping roof began in 2008, 850m³ of concrete has been poured, 780 tonnes of steelwork installed and a 6,000m² coating of liquid plastic applied in completing the weatherproof structure.

Bradwell turbine hall demolition

Bradwell's skyline went through a dramatic change earlier this year following the demolition of the site's main turbine hall.

The demolition marks a significant milestone towards reaching care and maintenance, which will see the site placed into passive storage in 2015.

The hall used to house the power station's nine turbines, which were used for electricity production until March 2002.

The joint project, between Magnox and specialist contractor Erith, has involved 100,000 man hours of work, recycled over 6,000 tonnes of metal and safely removed over 100 tonnes of asbestos.

100,000

Brian Burnett, Nuclear Decommissioning Authority (NDA) Head of Programme, Magnox, said: *"The demolition of the turbine hall is a significant decommissioning milestone and I congratulate Magnox and the team at Bradwell for achieving it more than two months ahead of schedule."*

Click here to find out more

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