

Safely Delivering a Cleaner Future

Achievements
2009-2010





Introduction

It is often too easy to move from one year to another without taking time to reflect on what has been achieved over the past twelve months through the efforts of our workforce and supply chain partners.

We remain singularly focused on 'Safe Delivery' and are committed to continuing the mission of safely operating our generating stations while driving forward our programmes of defuelling and decommissioning.

I am extremely proud of all the achievements we have made this year and I am delighted to say that we have, once again, delivered our largest ever programme of work.

It occurs to me that there is something very different about this collection of achievements in comparison to other years, however. We are starting to see the final completion of a number of our high profile decommissioning projects and the permanent reduction of the hazards associated with them. The packaging and removal of the last Magnox Depleted Uranium (MDU) drum and the upgrade of the effluent pipeline at Chapelcross, along with the completion of the weather barrier at Hunterston A, are two very clear examples.

We have carried out nearly £405m worth of work for £373m – delivering over £30m worth of added value.

Wylfa and Oldbury (the world's oldest operating nuclear power station), supplemented by Maentwrog hydroelectric station, have generated 8.196 terawatt hours (TWh) of electricity since 1 April 2009. This is more than three TWh above our target for the past 12 months and not only marks Magnox North's best ever performance in electricity generation, but also results in over £100m of extra income.

We have generated £323m worth of electricity at Wylfa, Oldbury and Maentwrog which is close to paying for all our operations across the whole Site Licence Company for the entire year. This generation performance has meant that over £400m worth of decommissioning and hazard reduction work has been carried out at a cost to the taxpayer of around £50m.

Our work involves many conventional and radiological risks; therefore it is a significant achievement that we have suffered only eight injuries to our staff and contractors which have required time away from work. The reportable injury incidence rate, in conjunction with the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995, is around a third of the average rate for the rest of the engineering and construction industry. Chapelcross and Wylfa have now passed a year without a lost time accident. Our target will always be zero, but we are encouraged by improving safety performance.

I will not allow our organisation to become complacent, or relax in light of these successes – I will push for continuous improvement in every single area.

Neil Baldwin, Managing Director



Headlines

For a second year, Magnox North has been working to a Business Improvement Plan – **'Planning to Succeed, Aiming to Exceed'**. This plan has outlined a series of objectives which are vital to our continued mission of 'Safe Delivery', including:

- Exceptional performance in health, safety and the environment
- Maximising value for the customer through efficiency and innovation
- Delivering greater effectiveness through our workforce

Magnox North's sites vary dramatically from Wylfa, Oldbury and Maentwrog power stations, which are still generating electricity and making a valuable contribution to the UK's energy needs, to Hunterston A, Chapelcross and Trawsfynydd sites, which are progressing well along the road to decommissioning.

In addition to our outstanding operational performance, we have received a number of accolades which measure us against some of the world's best performing organisations.



Business Improvement Plan Objective: Strive to further improve our performance by relentlessly pursuing every opportunity to learn from experience and seek out and replicate best practice wherever it exists and is applicable to our business.

- British Safety Council Sword of Honour awarded to Wylfa Site
- Four RoSPA Gold Awards and two RoSPA President's Awards
- Best Health and Safety Achievement in the Utility and Offshore Category
- British Safety Council Five Star Environmental Award
- CIPR Gold Award for Internal Communications category at Oldbury Site
- CIPR Silver Award for both Corporate Responsibility and In-house team of the year categories at Oldbury Site
- Idea of the Year Award Winners in the Productivity Category
- Constructing Excellence (Wales) Client of the Year Award
- Silver banding in the Corporate Responsibility Index
- Silver banding in our Investors in People accreditation
- Welsh Assembly Government Corporate Health Standard Platinum Award

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Milestones:



8.196 Twh of electricity generated at Wylfa, Oldbury and Maentwrog



Trawsfynydd's **Intermediate Level Waste (ILW) Store has become operational**



The last of **more than 10,500 drums of Magnox Depleted Uranium has been safely overpacked** and sent to the UK's primary storage facility



Installation of Hunterston A's **weather barrier completed**



Trawsfynydd Site passed **more than 11 million working hours without a lost time accident**



6km of effluent pipeline 'relined' at Chapelcross

Chapelcross Site

Hazard is removed as last drum of uranium leaves Chapelcross

Business Improvement Plan Objective: To provide 'fit for purpose' waste management solutions which underpin the core of our waste business.

The last of more than 10,000 drums of MDU left Chapelcross this year, signifying the reduction of a major hazard associated with the UK's civil nuclear legacy.

5,000 tonnes of the material, a product of reprocessing used Magnox nuclear fuel at Sellafield, was placed in interim storage at Chapelcross during the 1970s and 1980s.

The standard oil drums full of MDU have been transferred into modern stainless steel 'overpacks' and transported to Capenhurst, the UK's primary uranics management facility where all uranic material is stored. In the long term, the MDU has the potential to be re-used in the nuclear fuel cycle.

The departure of the final drum signifies the completion of this major project, which has cost £6.5m.

By 'overpacking' the MDU and transporting it to a specifically designed store at Capenhurst, Magnox North has removed any of the hazards associated with this material.

The last drum of MDU leaves Chapelcross Site



- **25% of Chapelcross' heat exchangers are now free of asbestos.** A significant amount of the waste has been declared as 'free of radioactive contamination' and has been disposed of as special waste at a significantly lower cost to the taxpayer.
- **4,906 fuel elements have now been removed from the site** and sent to Sellafield for reprocessing.
- **Chapelcross has not had a single lost time accident** throughout the whole of 2009/10.



The pipeline which stretches from the Site to the Solway Firth

Chapelcross Effluent Pipeline Project Complete

Business Improvement Plan Objective: Develop and Implement a Culture of Value Engineering.

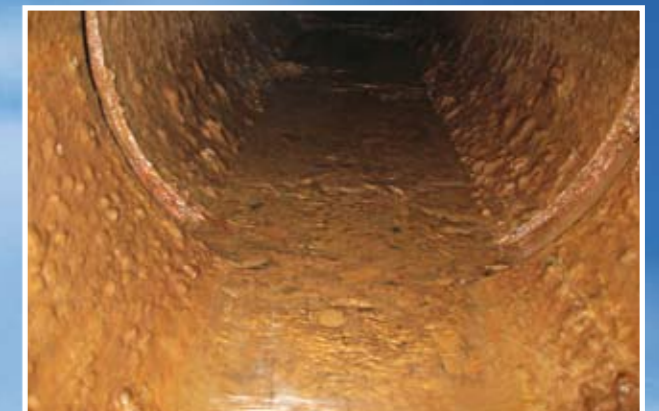
Chapelcross Site's 'Active Effluent Line' was constructed in the early 1960s to discharge up to 1,000,000 gallons of cooling water each day.

The 6km pipeline, which stretches from the site (near Annan in Dumfriesshire) to the Solway Firth, was initially designed with a 25-year life. Almost 50 years later, a project was undertaken to extend the working life of the pipeline in order to meet the decommissioning and defuelling needs of the Site. Additionally, the project aimed to minimise the risk of discharging contaminated limescale which had built up on the inside of the pipe during years of operational use.

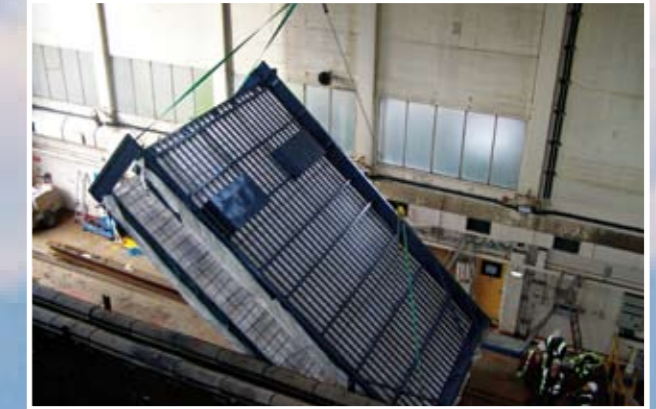
The £2.2m 'Slip Lining' project involves inserting a 180mm polyethylene inner pipe along the length of the original pipe. This is a technique widely used in the water and gas industries, but is a first for Magnox North.

The project was completed in March 2010, despite one of the worst winters since the site was constructed.

Since entering into the decommissioning phase of its life cycle, there is a reduced requirement to discharge high volumes of cooling water from the site. However, the pipeline is essential to many of the other decommissioning projects and is, in itself, a significant hazard reduction milestone.



■ Work continues on decommissioning the site's Cartridge Cooling Pond. During the year, the team working on **the project have recovered 13m³ of sludge from the pond** and have commenced removal of orphan wastes (the collective name given to varying amounts of wet ILW). By use of the Modular Active Effluent Treatment Plant, **75% of the activity in the pond water has been removed.**



Test lift of aluminium frame which was used in the construction of pond retaining wall

Hunterston A Site

Installation of the Weather Barrier



Business Improvement Plan Objective: To be recognised by customers and suppliers as an organisation with robust commercial project processes and talented project managers that deliver.

The installation of the weather barrier over the two reactor buildings is now complete and signifies delivery of an important milestone for the NDA. This has eliminated the conventional safety hazard of falling glass.

The previous weather protection consisted of patent glazing fitted to a structural steel frame over the concrete building structure. Each of the reactor buildings is approximately 60m x 50m and 60m high – each containing some 7,000 panes of glass. The glazing system was at the end of its useful life and small areas were failing under severe weather conditions, with significant loss of glazing during high winds leading to water leaks.

Approximately 170 tonnes of glass was removed and recycled resulting in £28,000 worth of unexpected income. In addition, around 120 tonnes of steel and 130 tonnes of lead was removed and recycled.

The weather barrier project has addressed a major conventional hazard reduction with no lost time accidents recorded throughout the duration of this project.

Solid Active Waste Building Retrieval and Wet Intermediate Level Waste Retrieval & Encapsulation



Business Improvement Plan Objective: To deploy a programme of best practice asset care management which optimises expenditure whilst maintaining assets in a fit for purpose condition.

Major construction works started on both the Solid Active Waste Building Retrieval (SAWBR) and Wet Intermediate Level Waste Retrieval and Encapsulation project (WILWREP) this year.

The SAWBR project at Hunterston A is one of the key decommissioning projects at the site. Its main objective is to remove all solid Intermediate Level Waste (ILW) from five bunkers situated in the Solid Active Waste Building. These materials were generated during the site's operational and early decommissioning phases.

An encapsulation facility will be constructed prior to retrieving the waste. Once packaged in stainless steel boxes, the waste will be transferred to the new facility. The boxes will be encapsulated, before being dispatched to the ILW Store for intermediate storage prior to eventual storage in a national repository.

The WILWREP focuses on retrieving all wet ILW from various sources and rendering them suitable, by means of encapsulation, for storage in the ILW Store. Successful completion of the project will ensure that radioactive waste is managed by being put into a passively safe form and will play a key role in moving Hunterston A into the care and maintenance phase of decommissioning.



170 tonnes of glass was removed and recycled

Oldbury Site

■ In 2009/10 Oldbury Site generated nearly 2.7TWh, which is enough to power 500,000 homes for 12 months – or to make 100 billion cups of tea.

Oldbury Returns to Full Power

Business Improvement Plan Objective: To provide added value through life extension, optimised use of remaining fuel and alignment of maximum generation with peak income.

Magnox North's Oldbury Power Station returned to generating electricity at 'full-power' after exactly five years of reduced output.

Oldbury's Reactor two returned from its statutory maintenance outage on 22 May 2009 and was synchronised with the national grid – five years to-the-day since the last time both Oldbury's reactors operated together.

Oldbury was originally scheduled to cease generation in December 2008, but has since received the go-ahead to continue generating.

The income generated over the extension period will be utilised to support the NDA's clean-up mission and Oldbury will continue to contribute to the UK's electricity supply.

Back to 'full-power'

Oldbury Pioneers New Waste Technique

Business Improvement Plan Objective: To create an organisation where everyone, throughout the business, actively peruses performance improvement and has the right attitude and skills to deliver innovation.

Oldbury Power Station has successfully implemented a new direct pour method for waste sludge removal, the first of its kind in the UK nuclear industry.

The site has successfully used the new technique to dispose of routine waste products that have arisen as a result of over 40 years of continued operation.

Oldbury has stored the sludge products on site since it was commissioned in 1967. These have arisen through activities such as oil separation and the site laundry and shower systems. The traditional route for disposal has been to transfer the waste into drums which were then packaged into an International Standards Organisation (ISO) container for transport to the Low Level Waste Repository in Cumbria.

Project teams at Oldbury devised an innovative method to encapsulate the sludge in concrete and then pour it directly into a third height ISO container, reducing the total volume of waste by 59%.

The result has been a reduction in the number of containers required from 10 half height ISOs to six third height ISOs, minimising processing time from 12 to five weeks and shortening the overall project duration by four months, saving £800,000 for the UK taxpayer.

Oldbury returned to 'full power' after exactly five years of reduced output



Direct pour method reduced volume of waste by 59%

Trawsfynydd Site

- The capping roofs above the charge faces in both Reactor Buildings at Trawsfynydd are now completed, reinforcing protection of the reactor cores against the environment.

Magnox North announced as 'Client of the Year' in the 'Construction Excellence Wales' awards 2009

Business Improvement Plan Objective: To develop and deliver a supply chain strategy which creates added value, optimised solutions for the customer and recognises Magnox North as an exemplar client with our suppliers.

The 'Client of the Year' category identifies organisations that have demonstrated the greatest drive in ensuring that best practice principles are adopted on its projects and throughout its supply chain. The Magnox North submission was based around supply chain improvement and the company's best practice in the delivery of construction projects at Trawsfynydd Site.

Trawsfynydd Strategic Integrated Framework (a key supplier at Magnox North's Trawsfynydd Site) were also shortlisted for their entries into both the Health, Safety and Environment (HSE) and the Integration and Collaborative Working Awards categories after the Site passed 1,000 days without a lost time accident.

Being recognised as 'Client of the Year' is a great honour, especially considering the calibre of the competition in this category. The relationship that Magnox North has with its supply chain is critical to its future success.

At the start of 2008/09 Magnox North set out a series of aims to deliver greater value to the UK taxpayer by improving the way the organisation works with its suppliers.

Client of the year 2009/10

Trawsfynydd ILW Store Accepts first package

Business Improvement Plan Objective: To provide 'fit for purpose' waste management solutions which underpin the core of our waste business.

The ILW Store at Trawsfynydd became the first at a Magnox Site to become operational after receiving its first package of ILW material.

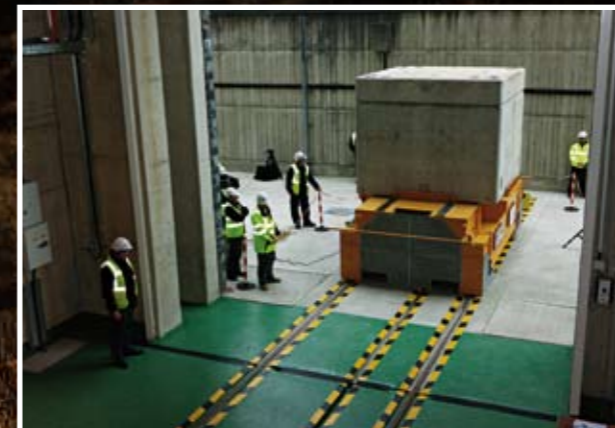
The ILW Store was officially opened on Thursday 17 September 2009 by Lord Dafydd Ellis Thomas from the Welsh Assembly Government.

Trawsfynydd has been retrieving waste which has arisen from the generating and decommissioning periods of the site's life cycle. Once the waste has been retrieved, it must be placed in a secure and controlled environment awaiting a long term storage option for the UK's nuclear wastes.

Construction of the £20m ILW Store, which will hold 368 concrete 'overpacks' and 2,444 drums containing ILW, began in May 2006 and was completed in March 2008.

The transfer of the first ILW Package into the Trawsfynydd Site store has been a major achievement and a significant milestone in the journey towards decommissioning. The project was completed on schedule, within budget and without a single lost time accident.

Trawsfynydd's ILW store receives its first package



Magnox North receives the Client of the Year Award



Wylfa & Maentwrog Sites

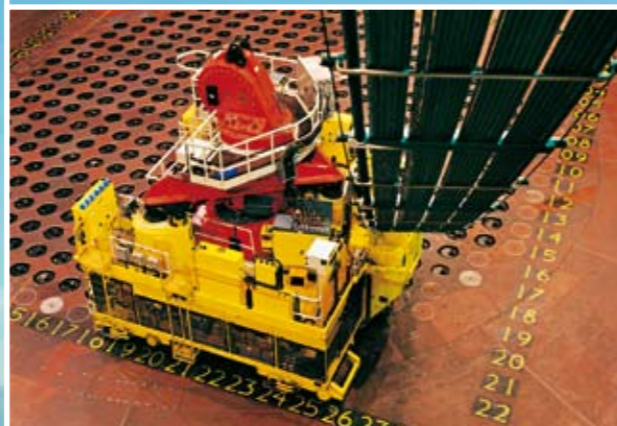
Wylfa & Maentwrog contribute towards another record breaking year of electricity generation for Magnox North

Business Improvement Plan Objective: To provide added value through life extension, optimised use of remaining fuel and alignment of maximum generation with peak income.

In 2009/10, Wylfa and Maentwrog once again exceeded their electricity generation targets by producing around 5.5 TWh of electricity – the equivalent to the amount of energy required to power over one million homes.

Electricity generation is extremely important to us, our customer the NDA and for the whole of the UK. The revenue made from this exceptional generation performance is a significant contributor to funding the ongoing decommissioning and clean-up of the country's civil nuclear legacy.

5.51Twh of electricity



Wylfa and Maentwrog once again exceeded their electricity generation targets

Wylfa meets its first goals in achieving continued generation

In June 2009 The NDA announced that Wylfa had been granted approval to continue generating electricity past its planned closure date of March 2010 until at least December 2010.

The Government's Department for Energy and Climate Change (DECC) gave its approval following a business case which supported maximising Wylfa's generating life, while maintaining safety and operational performance.

The site has safely generated electricity since 1971 and currently meets more than 40% of Wales' electricity needs. The initial extension period provides the potential for an additional three TWh of electricity worth approximately £100m in the current market.

In September 2009, the Business Case to justify operation beyond 2010 was presented to the NDA and the DECC.

Wylfa Site's planning assumption has now been changed to 'generating beyond 2010'. This is one of the first stages in extending generation beyond December 2010 up to December 2012 and is subject to approval from our regulators, including the Nuclear Installations Inspectorate (NII).



A Year of Safety Excellence

Business Improvement Plan Objective: To complete the Magnox North programme of over 50 years with no serious radiological release or nuclear safety event.

Wylfa Site has just ended an excellent financial year by having no lost time accidents throughout the past 12 months.

In a single year, the site has maintained its RoSPA Gold Medal, British Safety Council five star rating and the Sword of Honour for safety management, which is only awarded to 40 companies worldwide.



Innovation

Innovation is one of the areas which has been identified as integral to our business.

Business Improvement Plan Objective: We want to create an organisation where everyone pursues performance improvement and has the right attitude and skills to deliver innovation.

Each year, Magnox North runs a programme (now alongside Magnox South) to encourage, recognise and reward the very best in innovation. i4 (Inspire, Imagine, Innovate and Implement) drives innovation across the business by awarding winners in three categories:



The i4 initiative encourages innovation across the business

The EnergySolutions Innovation Award for the best new idea which will significantly improve safe delivery.

The Nuclear Decommissioning Authority (NDA) Implementation Award for the best idea which has been implemented over the past year, making the most significant impact on our business.

The Impact Award for the person or team that has had the greatest impact on innovation throughout the business.

During the 2009/10 i4 campaign:

- Magnox South introduced the i4 initiative
- Over 1,500 ideas were submitted, with 115 already being implemented
- 'Innovation Mindset' was identified as one of the Business Fundamentals in the Business Improvement Plan
- i4 is recognised as being instrumental in delivering £26m worth of additional value in Magnox North and generating an additional three TWh of electricity for the NDA, worth over £100m

The winner of the 2009/10 i4 Implementation Award was Magnox South with their ILW Augmentation Team Pathfinder Project, which involves using ILW mini-stores for interim resin storage. Dungeness A was the first site in the UK to use ductile cast iron containers as a long-term storage solution to their ILW resin storage requirements. Similar pathfinder projects are now being undertaken at Wylfa and Chapelcross in Magnox North.

Successful implementation of this genuine innovative approach to waste management includes:

- £2m saving against alternative storage options
- Regulatory confidence in ILW MiniStores across the nuclear industry

The winner of the 2010 EnergySolutions Innovation Award was a method of maximising the potential of Wylfa's remaining fuel stocks with the aim of extending electricity generation. The idea included maximising the potential of the remaining fuel in the reactor and the possibility of transferring fuel between the two reactors with the aim of keeping one running for an extended period. The potential for increased revenue for the extra electricity generation which would come from these ideas ran into hundreds of millions of pounds.

Corporate Responsibility



Magnox North supports a range of good causes across its sites



Magnox North works in partnership with the Welsh Assembly and the Scottish Executive



Business Improvement Plan Objective: To integrate CSR and sustainability into all that we do – from being a great place to work, investing in our local communities, minimising our environmental impacts and working closely with our suppliers.

Corporate Responsibility was identified as a target area of the Business Improvement Plan and has progressed significantly with development across all aspects of the business, ranging from the wellbeing of the workforce and the environment to the supply chain and the wider community.

A second submission to the Business in the Community's CR Index has seen the overall score increase, with the organisation improving its position within the Silver band.

In addition, our second employee survey has been completed as part of the Best Companies to Work For process with a response rate of 56%, a 12% improvement on the previous year. The analysis of results has been completed and action plans put in place to address the areas for improvement.

...more than £200,000 in socio-economic funding

Throughout the year, Magnox North invested more than £200,000 in socio-economic funding on behalf of the NDA, benefiting numerous local communities across the sites.

Alongside this financial investment, people at our sites have been working with their local authorities and communities to invest time and skills. As a result, more than 14,000 hours of work has been completed in support of not-for-profit organisations.



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