James Fisher and Sons plc
Marine Services Worldwide

Pelican

Spring 2013

London's underground Fleet river – Strainstall engineers *(below left)* **are monitoring this fragile historic structure during the development of the new Crossrail scheme**

Fleet management

Crossrail is one of the biggest ongoing civil engineering projects in the UK, and engineers from Strainstall are involved in some vital associated work – in ensuring that the course of the ancient Fleet river remains undisturbed by its construction.

The Fleet is perhaps the best known of London's underground rivers. Rising in Hampstead Heath, it has its outfall in the Thames under Blackfriars bridge. In Roman times it was a substantial river, but as London grew in population, it became little more than an open sewer in its southern

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Also in this issue

We are always looking for ways to improve the newsletter, so if you have any comments or suggestions or would like to contribute to the next edition, please email Oscar Myint at pelican@james-fisher.com

London's underground Fleet river

"working on a project like Crossrail, even in a small capacity in relation to the overall scheme, is an honour and allows me to help make a difference to thousands of people commuting every day" **Richard Slaughter, Strainstall**

reaches, and it was entirely covered by the 1870s.

Subterranean night shift

Owing to the concrete deliveries made during the day for the Crossrail construction work, the sewer must be accessed at night. Therefore the Strainstall team – consisting of team leader Nick Townsend, field operations engineer Richard Woodford and technician Ryan Willetts – arrive on site at Farringdon at quarter past seven in the evening. After a briefing, they climb into their sewer gear, which – along with the usual hard hat and goggles – features chest waders, a white paper suit, three layers of gloves, a face mask with ammonia filters to get rid of the smell, a gas monitor and an emergency escape kit.

By half past eight the team are ready to begin work on the installation of sensors, along with the associated fittings and cabling, using scaffolding especially chosen for its flexibility. "We've drilled hundreds of holes," says Ryan "so in that sense it's not been very different to a lot of the other works we do every week." The team gets an hour and a half for 'lunch' at 2am; if that sounds generous, bear in mind that it takes a half an hour to decontaminate and another half hour to get into all that sewer kit again! They start to pack up their tools at 6:45am and the shift ends just before half past seven in the morning, after which they head to their hotel for some well-earned rest.

A different kind of challenge

As with any job, there are upsides and downsides. The sewers can be slippery and smelly, though most of the Fleet's content is just surface water run-off: as Nick says, "the sewer environment isn't as bad as many people imagine." The other big downside is that weather can – and has – held up work, but as Ryan puts it, "working in a historic environment like these sewers makes it all worthwhile, even if we have to do some waiting around from time to time." Also on the upside, the length of the project has enabled the team to forge stronger working relationships with the safety team from UKDN Waterflow than would have been possible in a shorter job.

Richard Slaughter admits that spending so much time in a sewer wasn't something he'd envisaged while studying for his degree, but "working on a project like Crossrail, even in a small capacity in relation to the overall scheme, is an honour and allows me to help make a difference to thousands of people commuting every day." Nick agrees: "It's been an absolute pleasure to work on this job – just being involved in something of this scale is something I've dreamed of in the past. I've thoroughly enjoyed my time working here and look forward to completing the job on time and within budget." ■

The Rowlands family visit Number 10

Fendercare Marine's marketing executive Paul Rowlands and his family had the chance to meet the Prime Minister's wife Samantha Cameron recently at 10 Downing Street. Paul, his wife Miranda, and son Sam, were invited to a reception at Number 10 after raising £50,000 for charity.

The Rowlands family at their meeting with Samantha Cameron (centre); Sam, Miranda and Paul (left to right), together with Ronald McDonald House Charities CEO Jon Haward (far left) and head of trustees Jeff Fergus

The Rowlands family started raising money for Ronald McDonald House Charities (RMHC) after the death of baby Alice Rowlands in 2007. RMHC provides accommodation for families whose loved ones are in hospital miles from home, and the family stayed for two weeks at a Ronald McDonald House in London to be near Alice, who was receiving treatment for acute liver failure at nearby King's College Hospital. Sadly, Alice died when she was just 15 days old, but the family pledged to raise money for the charity in her name and set up the Alice Rowlands Memorial Society. ■

Remote Handling

JFN supports world's deepest nuclear clean-up project

The Dounreay site in Caithness, Scotland

"Our specialised remote handling skills are directly applicable to the challenges that the Dounreay site faces"

Dr Paul Read, JFN Managing Director

James Fisher Nuclear (JFN) has been contracted to assist with the retrieval and processing of radioactive waste from the Dounreay shaft and wet silo – in what will be the world's deepest level nuclear clean-up task.

The company will supply a suite of remote handling equipment and end effectors to support the retrieval, sorting and segregation of miscellaneous waste materials. The multi-million pound contract will be delivered over a two-year period and will involve the construction of a test facility in the JFN Rig Hall at Egremont, West Cumbria, in which to undertake testing and operator training prior to the delivery of equipment to Dounreay.

"We have an extensive track record in providing remote handling systems at Sellafield and Magnox," commented JFN managing director, Dr Paul Read, "and this contract represents a 'first' for the deployment of our capability at Dounreay."

The contract is the first of a number due to be placed by Dounreay relating to the decommissioning of the 'high hazard' shaft and silo facilities. Some of the most hazardous radioactive waste from Britain's redundant fast reactor programme has lain submerged in water for 50 years in the 65-metre deep vertical shaft beneath the facility. The wet silo is a sub-surface watertight two-compartment reinforced concrete tank; each compartment is approximately 8.5m long, 4.9m wide and 10.5m deep. The main mechanism for the remotely operated retrieval of waste from these hostile and difficult environments will be a hydraulic grab deployed from an electric overhead travelling crane located in a new facility above the silo.

"Our specialized remote handling skills are directly applicable to the challenges that the Dounreay site faces," adds Dr Read. "We're keen to get started and support the next steps of the site's decommissioning programme." ■

RMSpumptools heads to the hills for charity

Since its inception in 1996 the Caledonian Challenge has become one of the biggest events in the charity sports calendar. More than 15,000 people have taken part and helped to raise a staggering £12 million for charity. This year, two teams of six from RMSpumptools will be taking the challenge, which takes place over the weekend of 15 and 16 June and involves walking 54 miles over tricky terrain in the Scottish Highlands in just 24 hours.

The teams will include RMS staff from both their Yorkshire and Aberdeenshire sites. Taking part will be managing director Stan Foster-Rooke, who commented: "We are all very much looking forward to the Caledonian Challenge which will bring together staff from several of our locations whilst giving something back to the wider community. It won't be easy, but the achievement will be worth it!"

The RMSpumptools teams are aiming to raise £5000 for Foundation Scotland, which gives vital grants to local community groups all over Scotland. Anyone who would like to help them reach their target – and assist some very worthwhile causes – should visit their fundraising website: http://www.caledonianchallenge.com/teams/JOCKSTYKESandSLIPPERYSLOPERS

Pedal power

James Fisher group finance director Stuart Kilpatrick has signed up for an unusual charity challenge this summer – pedalling through the night along a course that takes in some of London's most famous landmarks.

The Nightrider challenge will take place over the weekend of 8/9 June, from midnight onwards on Saturday night. Starting at Alexandra Palace, Stuart will join around three thousand hi-viz wearing participants who will pedal 100km (65 miles) around a course that takes in London's most iconic sights – including Tower Bridge, St Paul's, Canary Wharf, London Zoo, the Houses of Parliament and the Albert Hall. The ride will also involve a punishing climb up to Whitestone Pond in Hampstead – London's highest point, at 139 metres above sea level.

Last year's event raised over two million pounds for charity and attracted some notable celebrity participants, including Ben Fogle and Princess Eugenie. This year, organisers Classic Tours have set a fundraising target of £2.5 million.

The course is likely to take over four hours, so Stuart is looking forward to a large contingent of James Fisher employees lining the route and cheering him on. "It's going to be a tough but enjoyable challenge" says Stuart "I'm not sure what's going to be worse, cycling 100km or the sleep deprivation!"

Stuart hopes to complete the challenge whilst raising money for his nominated charities: Macmillan Cancer Support, Newbury Cancer Care, and Diabetes UK. "It has been quite humbling to receive so much support, such incredible generosity and so many good wishes", says Stuart. "It is very much appreciated."

Anyone wishing to sponsor Stuart and support three very worthwhile causes can do so via Virgin Money Giving, a not-for-profit organization that will claim gift aid on a charity's behalf where the donor is eligible:: **http://www.virginmoneygiving.com/kilpatricks**.■

Left: **Stuart Kilpatrick.** *Above and far left:* **Pictures from the last year's London Nightrider event.**

Last year's event raised over two million pounds for charity and attracted some notable celebrity participants, including Ben Fogle and Princess Eugenie

Prolec recognized for engineering innovation and efficiency

Prolec achieved considerable recognition at the inaugural Plantworx Awards for Innovation, a new event to celebrate the best new products in the UK construction equipment industry.

The awards are given to the most innovative products introduced to the UK market during the past year, and are judged by an independent panel of industry experts. Their decisions are based on the innovativeness of the entry, and how widely it could potentially benefit the construction industry.

Prolec achieved not just the runner-up spot amongst seventeen contenders in the Engineering Innovation category, but was also 'Highly Commended' in the Efficiency Innovation category. The recognition was for the Prolec Machine Engine (PME), a modular electronic system designed to capture machine, position and load data for construction and demolition equipment. It can provide both safety and guidance functions, where previously multiple systems were necessary. Simple installation and software-based upgrade paths make PME a highly flexible option – something that particularly impressed the judging panel.

"We're very proud of PME – it's a product we believe in passionately, and have spent many working hours developing and fine-tuning," said Gary Tuffy, Prolec director of sales and marketing. "It's extremely gratifying to see that effort recognized by the widely experienced group of construction industry professionals that comprise the Plantworx Innovation Awards judging panel."

Prolec's engineering director, Tony Adams, led the engineering team. "Our aim was to consolidate all Prolec's safety and guidance products into one platform, where previously we had over twenty", he explains. "This provides a great benefit in maintenance, stock holding and cost."

Inspection & Monitoring

Bridge monitoring system adapted for marine energy foundations

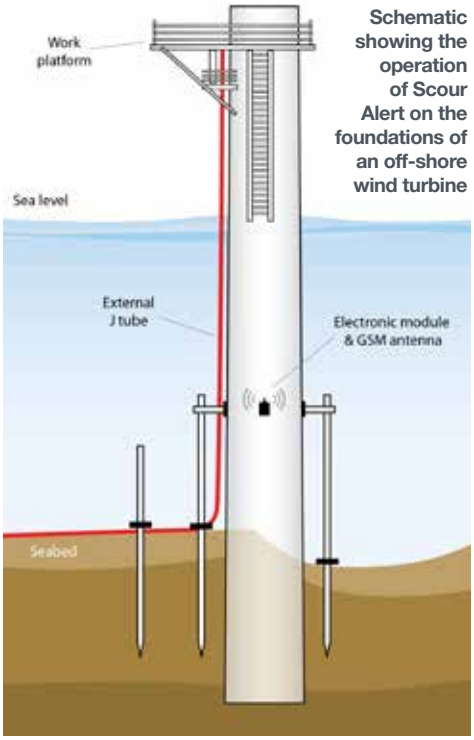
Strainstall has announced the development of a new product specifically targeted at helping to ensure the structural integrity of the seabed foundations and anchoring systems of offshore wind and marine renewable generating systems.

ScourAlert™ is a proven Strainstall product used to address the erosion of bridge foundations – a crucial function, given that the removal of supporting material by the action of water – in the form of currents, tides, or other turbulent flows – accounts for approximately 60 percent of all bridge failures. The system provides continuous monitoring and early warning of these so-called 'scour issues', so that appropriate asset life management strategies can be adopted and objective data recorded on their effectiveness following implementation.

With the rapid and unprecedented development of marine renewable energy resources – and not least with the trend toward the use of multi-megawatt wind turbines – the long-term integrity of seabed foundations is an issue of increasing importance to commercial wind farm investors and developers. For this reason Strainstall is developing a version of this proven technology for subsea foundations.

The sensor assembly will be embedded in the seabed within the zone where scour is a potential risk – for example, close to the foundation of an offshore wind turbine foundation or alongside subsea electricity cables. The sensing element comprises a vertical stainless steel tube, which is mostly buried, fitted with internal sensors. A magnetic collar around the tube initially rests on the seabed; if scour occurs and material is washed away, the collar falls and triggers the internal sensors as it does so. Strainstall's specialist subsea telemetry systems, which are equipped with long-life batteries for extended operation, enable the system to issue automatic warning messages when such scour erosion is detected.

Structural inspections in the marine environment are labour intensive, expensive and can at times also be potentially hazardous. By allowing the remote monitoring of structures – and hence enabling inspections to be focused on those areas where alarms are triggered – ScourAlert™ thus provides an attractive solution for renewable energy companies, both from a commercial viewpoint as well as in terms of their operatives' health and safety. ■



Schematic showing the operation of Scour Alert on the foundations of an off-shore wind turbine

ScourAlert™ thus provides an attractive solution for renewable energy companies, both from a commercial viewpoint as well as in terms of their operatives' health and safety

New fleet director for JF Everard

With career experience that ranges from nuclear submarines to merchant shipping, Neil Burns brings a strong and impressively varied CV to his new role as fleet director for James Fisher Everard.

Neil has assumed overall responsibility for the operation and maintenance of the highly sophisticated James Fisher Everard fleet, which comprises eighteen modern, double-hulled product tankers of up to 11,000 tonnes in capacity. Making in excess of a thousand voyages annually, the fleet carries petrol, diesel, kerosene and biofuels between Europe's refineries and terminals to major coastal storage facilities.

"I have been surprised by the diversity of the fleet and I am very impressed at our crews' level of dedication to the difficult role they undertake," commented Burns following a six-week transition period during which he visited eight of the company's vessels. "I am very pleased to take up this post and am very passionate about our business. It gives me great satisfaction to work for a long established progressive British company and apply my skill set and experience to the unique challenges of this role."

Neil Burns started his career as a marine engineer, working on board nuclear submarines of the Royal Navy. He subsequently transferred to the Merchant Navy, working up to chief engineer on a range of vessels including container ships belonging to P&O Nedlloyd and the petrochemical fleet of Maersk. Moving ashore, the next phase of his working life was spent in fleet management, where he clocked up six years of experience as superintendent and five years as fleet manager.

Neil Burns takes over this important role for the James Fisher Fleet from Arthur Todd, who moves to the company's London office as project director.

Subsea

James Fisher acquires Divex

James Fisher and Sons plc has strengthened its global presence in the marine engineering industry through the purchase of Divex Ltd, a leading supplier of diving equipment to the offshore oil industry and related sectors.

Based in Aberdeen, Divex Limited has a thirty-year history of enabling accident-free diving through its design, assembly and distribution of a wide range of diving products for commercial and military application. Among its most notable achievements has been the provision of rebreathing equipment to enable the defusing of munitions from the Second World War, and its assistance in the recovery of mustard gas bombs from Japanese lakes. Divex products range from diving helmets and breathing apparatus to large saturation diving systems and decompression chambers for multi-occupancy.

The present Divex company dates from 1998, though its origins can be traced back to the foundation in 1981 of Gas Services Offshore Ltd, which promoted a new technology for diving recovery projects. The company has since grown organically and through more than a dozen acquisitions, and now employs approximately 240 people at its Aberdeen headquarters and at other sites in Perth and Sydney, Australia; Cape Town, South Africa and Dubai. Divex recorded a turnover of £32.4m in the year ended 30 November 2012, and showed a net profit of £4.6 m.

Divex's deep saturation diving system, to be supplied to the Russian admiralty

> "Divex is a market leader in diving equipment for the oil and gas, and defence sectors"
>
> **Nick Henry, CEO James Fisher and Sons plc**

Further significant growth in prospect

Divex is on the cusp of a further significant period of growth thanks to the opportunities presented by the global replacement of ageing diving support vessels, and the support that will come with being part of the James Fisher Group promises to be crucial to maximizing this potential. "We actually started the process of finding a suitable parent company some three years ago and we sought a company where we had a good fit and a similar ethos and culture," says Divex joint managing director Derek Clarke.

"We thought James Fisher would be an excellent parent back then and the discussions that have taken place over the passing months only reinforced that view. Our dual market sectors of oil and gas and defence fit perfectly and we will functionally operate within James Fisher Marine Services Ltd. Having the backing of James Fisher plc will help the company through this exciting period," he added.

Clarke and Doug Godsman, the other current joint managing Director of Divex, will both remain with the company, as will Doug Austin, MD Asia Pacific and group business development manager. James Fisher has bought the company for an initial fee of £20m in cash plus a further maximum additional consideration of £13m, linked to future profitability.

Nick Henry, CEO of James Fisher and Sons plc, said of the group's latest acquisition: "Divex is a market leader in diving equipment for the oil and gas, and defence sectors. It is also the global leader in the design of saturated diving systems, which is a growing market. We believe that it will fit well with our group in terms of its market, customers and geographical spread." ■

Russian success

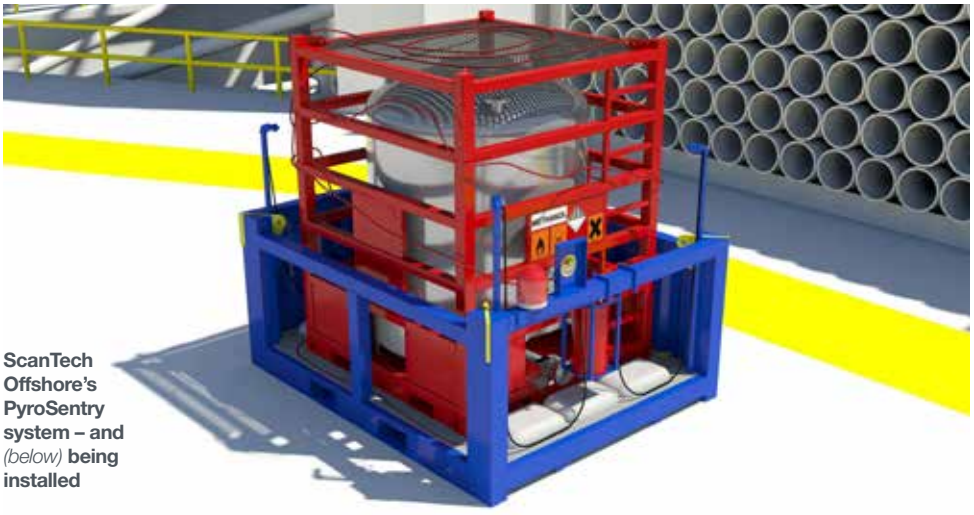
Recently Divex landed a significant contract in Russia, to supply a deep saturation diving system to the Russian admiralty *(above, and signing ceremony right)*. The system is to be installed, in partnership between Divex and Russian company Tetis Pro, on the rescue ship Igor Belousov. Divex has supplied around a hundred such systems over the years, but this one will feature a unique design that can accommodate twelve divers in saturation, and allow three-man bell excursions to depths of 450msw to gain access to a stricken submarine.

Divex joint managing director Doug Godsman travelled to Moscow to sign the contract, where he was met by his Russian counterpart Alexander Delyanov of Tetis Pro. Mr Delyanov wore a kilt in honour of this Russian/Scottish collaboration!

Offshore Support

PyroSentry™ adds to rig safety portfolio

An innovative new product from ScanTech Offshore provides increased fire detection and instant suppression for methanol supplies on offshore installations.



ScanTech Offshore's PyroSentry system – and *(below)* **being installed**

> "The PyroSentry product is already proving of interest to numerous offshore operators including Total, Chevron, ENI, and Exxon Mobil"
>
> **Robbie Garden, business development manager, ScanTech Offshore**

Methanol is used by many offshore rig operators to keep flow lines from the oil or gas well head from becoming restricted or blocked. This simple alcohol (CH3OH) is highly effective in preventing the waxing of oil or formation of hydrate crystals in natural gas lines, particularly for deep water wells.

A unique fire hazard

Although effective in preserving flow assurance, Methanol brings its own hazards to the offshore environment. As Robbie Garden, business development manager for ScanTech Offshore explains: "Methanol is a clear, colourless liquid with the appearance of water, and it has no discernible odour in low concentrations. It is however extremely flammable and releases vapours at or below ambient temperatures. It burns in air with a flame that gives off very little visible light and as such, it can be difficult to see a fire or to estimate its extent in daylight. Special fire protection measures are therefore crucial in ensuring the fire-safety of offshore methanol installations."

The new PyroSentry methanol fire detection and suppression system from ScanTech Offshore aims to address this requirement in the form of an independent protection system for offshore methanol storage installations. The unit, which can be installed and running in as little as six hours, is bunded to avoid any leakage of methanol to the rig structure.

From inspiration to innovation

"I came up with the initial idea for PyroSentry when working in Australia with our new sales director, Mike Aitken," explains Garden. "We were asked if we could come up with a methanol fire detection system – there was nothing on the market but I was aware of FireTrace products that are widely used in vehicle applications. I contacted FireTrace and we developed the concept based around their existing, well-proven components. They had not previously approached the oil and gas sector and so were happy to work with us, providing ScanTech Offshore with global exclusivity for the PyroSentry product in this sector."

The system consists of a charged fusible loop of FireTrace Detection Tubing® (FDT) encompassing the containment area. In the event of a fire, contact with the flame ruptures the tubing activating the unit's fire suppression system which is based on alcohol-resistant aqueous film-forming foam (AR AFFF) extinguishers to which the tubing is connected via pressure switches. In addition to providing audible and visual alarms, the unit automatically disperses the foam into the bunded area through stainless steel piping and directional nozzles, focusing it on the protected area.

The FDT is charged with dry nitrogen to mitigate the risk of thermal expansion leading to false and premature activation, resulting in a safe, reliable and stable detection system. PyroSentry installations can be designed and installed according to client requirements and specifications. For example, protection systems can be installed within the bunded areas on offshore installations prior to well test operations and then dismantled and removed after the well test operations have concluded. In addition to the base system, AR AFFF equipped fire-fighting trolley units can also be supplied as a secondary protection measure, together with a thermal imaging camera to support methanol fire assessment and safety.

"The PyroSentry product is already proving of interest to numerous offshore operators including Total, Chevron, ENI, and Exxon Mobil," continues Garden. "I am convinced that this system can make a major contribution to methanol fire safety in the offshore environment." ■

Marine Services

German waterways choose Prolec

Prolec's 'Digmaster Pro' depth monitoring and guidance system was recently purchased by the German Federal Waterways and Shipping Administration as part of a fleet upgrade.

The German inland waterway network stretches to around 7300 km and is crucial for the country's economy: not only is it well used by tourists and holidaymakers, but much of it is of considerable importance to international freight transport. The network is managed by the German Federal Waterways and Shipping Administration, which is responsible for maintaining the rivers, canals, locks and seaward approaches, and managing shipping traffic.

In August 2012, as part of a workboat fleet upgrade, the Federal Waterways office brought into service the clamshell dredger Elsflether Sand, to be used in the management of the River Weser in the Bremen district. This craft replaces older, decommissioned vessels, and is intended to increase the efficiency of the waterways' working cycles. Elsflether Sand was built in Denmark, where it was equipped with a permanently fixed Hitachi Zaxis 470 LCH excavator supplied by Kiesel Baumaschinen Nord, which has a reach of 17 metres and is being predominantly used for dredging.

In order to meet its working requirements, the boat was fitted with a 'Digmaster Pro' depth monitoring and guidance system by German distributor Illig Lasersysteme. The system uses fully submersible angle sensor technology to allow the operator to dig out only the necessary material to bring the waterway back to the required depth for all tidal situations. The system has been configured to enable the construction of works such as breakwaters or laying sealing material in shipping channels within pre-set parameters.

The Elsflether Sand is one of four new Federal Waterways vessels to use the Prolec Digmaster system – the others are based in Emden, Dresden and Berlin.

Prolec sales manager for Scandinavia, Central and Eastern Europe, Jurgen Reineke, said: "We are pleased to be helping the German Federal Waterways and Shipping Administration find ways to work more efficiently and accurately in their dredging and marine construction work. Our Digmaster Pro system has been designed to meet the requirements of this specialized application, and is proving effective in this environment. We're looking forward to helping to keep the German waterways running smoothly." ■

One of German Federal Waterway's dredgers, which has been fitted with Prolec's 'Digimaster Pro' depth monitoring and guidance system

Damaged nuclear fuel recovered

James Fisher Nuclear (JFN) has successfully supplied equipment to enable the removal of 53 damaged nuclear fuel elements at Wylfa Power Station, operated by Magnox Ltd, on Anglesey, Wales.

The damage to the fuel elements in the dry storage cells was such that they could not be safely recovered by the standard fuelling machine grab. JFN undertook the design, manufacture and testing of a bespoke fuel retrieval system incorporating an electro-mechanical grab to remove the damaged elements. Fuel retrieval has been successfully undertaken in two of the three dry storage cells in which the problem existed: in the third, unrelated works have delayed access. With the assistance provided by JFN, the Wylfa Magnox team has won the Magnox Implementation Award for 2013. James Whittington, JFN's project lead, commented: "With Magnox emphasizing their partnership with JFN on this project, it not only reflects well on the hard work of the team behind all stages of this project, but also on JFN as a whole."

The specialized mechanical grab undergoes testing prior to use