



OPENING | CEREMONY
PRESIDENT HERALDS THE DAWN OF A NEW AGE

THE INAUGURAL WORLD NUCLEAR EXHIBITION was officially opened yesterday by WNE president Gérard Kottmann. Speaking to a packed auditorium, he welcomed delegates and said that the nuclear industry is entering a new age. He was then joined by Henri Proglio, EDF CEO, and former French president Valéry Giscard d'Estaing, who both spoke about the opportunities and challenges in this dynamic market.

Above: A packed crowd attends the WNE 2014 opening ceremony. Inset: Valéry Giscard d'Estaing (left) and Henri Proglio addressing the delegates

RECYCLING | MOX

US breakthrough facility with a European touch

STORY | STEVE KNIGHT

THE USA WAS certainly catering to a European audience with the information at WNE about its Mixed Oxide (MOX) fuel fabrication facility at the Savannah River Site in South Carolina.

The multi-billion dollar facility, due to open in 2019, aims to convert nuclear weapon-usable plutonium into fuel for use in atomic energy reactors.

It should ensure Washington meets its commitment to an agreement between the US and Russia, signed in 2000, where each pledged to eliminate 34 metric tons of plutonium. That is enough fissile material to power 17,000 nuclear weapons.

Among the fascinating facts about the project, the facility will contain 35,000 tons of steel. The literature helpfully points out this is five times as much as the Eiffel Tower. And, when adding that

there will be 85 miles of process piping, the brochure makes it clear that this could stretch across the English Channel.

To be fair, there are also some useful US references. The 170,000 cubic yards of concrete is said to be enough to build four Washington Monuments, while the warehouse space at the facility is four times the square footage of a Wal-Mart.

The Department of Energy's National Nuclear Security Administration signed a contract with a consortium, now called CB&I AREVA MOX Services LLC, for the design, construction, and operation of the facility. The design is based on AREVA's recycling technology that has been used successfully for almost two decades.

However, the project was put under the microscope in April after a White House warning that, for fiscal reasons, it might have to cancel construction



of the Energy Department plant.

Bryan Wilkes, chief communications officer CB&I Project Services Group, (pictured left) said: "The budget always has to be approved by Congress on an annual basis and things like this often happen in the life of big projects."

"However, this is the first major nuclear construction project authorised by the United States Nuclear Regulatory Commission (NRC) in more than 20 years and the facility will be the first facility of its kind in the US. The plant is already 64% finished, with 12 of the 16 support buildings complete."

The project recently overcame another hurdle when the Nuclear Regulatory Commission's Atomic Safety and Licensing Board (ASLB) rejected objections filed by three opposition groups to the operating license agreed for the facility. The ASLB legal review had lasted for more than two years.

QUOTE OF THE DAY
BUDDHA

The mind is everything. What you think you become



IMAGE: WIKIMEDIA COMMONS

EDITORIAL | GÉRARD KOTTMANN

A brand new day

The three days of WNE have brought together all the international players of the civil nuclear energy community. We are pleased you're part of this ultimate exhibition.

On the programme this morning, we have the Atomic Energy Commission (CEA) and the National Agency for Radioactive Waste (ANDRA) panel discussions, dealing with solutions for preparing the future and dismantling and waste management, respectively.

Don't miss the two special sessions this afternoon; the first on US nuclear energy technology development – new build, gen 3+, small reactors, and the second on business opportunities of AIEA, UK, Turkish authorities,

ENEC and ITER. Here are some numbers that help define WNE:

495 – it's the number of exhibitors waiting for your visit to showcase their technologies and introduce their services.

26 – it's the number of today's workshops on topics covering the nuclear sector from A to Z presented by the WNE exhibitors to highlight their field of expertise.

1 – it's the one and only place to be for business and networking opportunities, technologies discovering and skills widening. Fasten your seat belts: you reached WNE! We wish you a fruitful day!



NEWS | IN BRIEF

French PM on site today

French Prime Minister Manuel Valls is scheduled to visit the show at 4:45pm today. He will deliver a speech at the Panel Discussions area at 6pm.

Day One highlights

- Inter-Governmental signing between South Africa and France at the Quai d'Orsay, Paris. Followed by visit of South African Energy Minister Mrs Tina Joemat-Pettersson to the show.
- Visit of the Argentine Republic Ambassador in France, Mrs Maria Del Carmen Squeff.
- Visit of the French Ambassador in Austria, permanent representative of France at UNO and international organisations, Mrs Marion Paradas.
- Visit of the UK Ambassador in France, Sir Peter Ricketts.
- Visit of the Bogdan Pandelica, Secretary of State at the Economy Ministry in Romania.

Romanian MoU is a boost for Assystem

Assystem and the Romanian Nuclear Agency for Radioactive Waste (ANDR) signed a memorandum of understanding (MoU) at WNE yesterday. Florin Constantin Tatar, president of ANDR, and Dominique Louis, chairman and founder of Assystem, agreed the deal supporting future Assystem operations for ANDR.

These cover the exchange of experience, implementation and technical assistance in design, project management and operation of nuclear facilities, including decommissioning, as well as characterisation, treatment and conditioning of radioactive waste for disposal.

A first contract was also signed for feasibility studies related to radioactive waste management at the future site of Saligny, in the south east of Romania.

Pyrocontrole lands China deal

The Nuclear Power Institute of China has signed a contract with French company Pyrocontrole (stand H35) to provide 47 fast response sensors for reactors three and four at the Fuqing nuclear power plant, due to begin operation in 2015 and 2017.

Russian deal for Manoir

Manoir Industries and its customer, Velan, have won a contract to provide cast valve components for the secondary circuit of the Leningrad 2 power plant, near St Petersburg.

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AN EVENT OF



ORGANISED BY



THROUGH THE EYES OF WNE VISITORS

AUSTRALIA



Con Lyras and Lubi Dimitrovski had travelled all the way from Australia to attend WNE. They both work for the Australian Nuclear Science and Technology Organisation (ANSTO).

"Our CEO heard about the show from someone at AREVA," said Lyras. "This has been an ideal opportunity to cover a lot of different companies in one fell swoop."

Australia is about to embark on a new AU\$168 million nuclear medicine plant to produce Molybdenum-99 (Mo-99), with a half-life of 66 hours. This can be transported before it decays to Technetium-99m, with a half-life of just six hours, making it useful for a wide variety of nuclear medicine imaging procedures.

The pair have a big shopping list for their new facility.

USA



Leon Joyce, business development manager at Stein Seal's industrial division, travelled from Pennsylvania, USA to meet up with customers and to explore new markets.

The company makes specialised mechanical seals. "We don't really have any competitors at this show and it is a good way of meeting all our clients under one roof," Joyce said.

He added that the nuclear industry has very critical requirements for reliability and safety. Stein Seal has test rigs that can run shaft speeds up to 70,000rpm; oil pressures to 4,000psi; gas pressure to 3,000psi and temperatures as high as 1,000°F.

Joyce said that Stein Seal's extensive experience means that it is able to meet the industry's stringent demands.

Getinge: When it's good to be manipulated

NEW REMOTE MANIPULATORS are among protective equipment on show for the first time at WNE with French manufacturer Getinge La Calhène (stand B28).

Visitors to the show can test the arms "for real" on the stand, where there is a daily prize for the best performance during WNE.

The Terman heavy-duty robotic slave arm,

which the company calls a new generation of heavy-duty long-range manipulator, is expected to be available from 2016.

The latest, fully robotic version of Getinge La Calhène's range of master/slave manipulators, it reduces operator effort and fatigue, resulting in improved accuracy and efficiency.

The main innovation of this system is the

introduction of electrical motors to operate the slave movements. There is no mechanical link between master arm and slave arm.

The innovative MT200 TAO computer-assisted telemanipulator, meanwhile, features a four-metre extension and 20kg weight capability. The assembly is controlled by an electronic rack containing integrated computer-assisted steering software with feedback and automatic surveillance of system piloting.

Sales engineer Samuel Kervoern said the new computer-aided manipulators "are more convenient for the operator, offer a greater range of movement and very good sensitivity" for carrying out work inside a hot cell.

The addition of a camera inside the hot cell, automatically coordinated with the electrical manipulator controls, allows the operator to work anywhere within 200 metres of the hot cell, reducing health risks and potentially eliminating the need for conventional shielded windows. Getinge La Calhène is a world leader in remote manipulators, both mechanical and electrically assisted robotic models; shielded transport and transfer containers; glove box equipment; and double leak-tight transfer port (DPTE) based products and transfer systems.

In the nuclear sector, its expertise encompasses the design and production of equipment, parts and consumables as well as support for engineering solutions, maintenance, training and expertise in its areas of business.



Getinge project manager Assem Djedidi demonstrates the virtual reality training system for the MT200-TAO manipulator arm

FUTURE | PLANNING

UK nuclear industry bullish about future energy mix

NUCLEAR

SPIE assists you throughout the lifecycle of your installations.

NEW CONSTRUCTION PROJECTS

SPIE has 30 years' experience in new and highly complex projects

- Technical and engineering expertise
- Project management techniques and tools
- Supply and supply chain management
- Commissioning

A RANGE OF SERVICES FOR FACILITIES IN OPERATION

SPIE operates constantly in most types of nuclear installations

- Maintenance
- Unit shutdowns
- Improvements and backfitting, increasing service life
- Operational support
- Management of logistics operations

DECOMMISSIONING

SPIE provides engineering solutions and multi-technical operations

- Decommissioning services
- Waste management
- Remote control operations



MAJOR PLAYER IN THE NUCLEAR INDUSTRY

SPIE provides multitechnical solutions backed by its wideranging expertise in electromechanical engineering and HVAC.

- Specialised labour skills
- Specific nuclear know-how
- Innovative approach
- Expert services from consulting to major project management
- Results-driven culture

Guiding principles and values

- Local presence
- Performance
- Responsibility
- Safety culture
- Diversity and equity

SPIE

€4,047 m in sales
30,200 employees
500 sites in 31 countries

SPIE Nucléaire
€218 m in sales
2,091 employees

The UK's Nuclear Industry Association (NIA) has underlined the importance of nuclear to the energy mix.

It says a fifth of the electricity generated in the UK in 2013 came from nuclear power. Most of the UK's current generation of power plants will reach retirement in the next 15 years or so, which makes the planned new build programme of 13 new reactors by 2030 even more important.

Lord Hutton, chairman, NIA (pictured), said: "The government estimates that by 2025 the

UK will need 60GW of new electricity generating capacity and the infrastructure to run it. Of this, 35GW would come from renewables and 25GW would come from other sources, including nuclear power. The industry currently has plans for 16GW of new nuclear plant.



"Nuclear is a low-carbon technology – each gigawatt hour of energy generation only emits 5g of CO₂, compared with 900g from coal-fired.

"This means that each year, the energy generated by existing nuclear power stations avoids around 40 million tonnes of CO₂ – the equivalent to taking half of Britain's cars off the roads. Furthermore, no air pollution is emitted from a nuclear power plant.

"It's not about choosing nuclear over wind or solar. All have their place and must work together to ensure the UK has a large proportion of its energy generation from low carbon sources.

"For too long commentators, both pro and against nuclear, have said there could only be one or the other. Together, these technologies are contributing a third of the electricity that UK homes, hospitals and businesses need."

Lord Hutton added that nuclear must be a part of the UK's low carbon energy mix as renewable sources cannot provide constant power. The NIA believes that, in order to move to a fully decarbonised energy sector, nuclear, alongside wind and solar, must all be used.

Keith Parker, NIA chief executive added: "We often talk about the positive impact building new nuclear capacity will have on jobs and businesses. But, if we don't build new nuclear power there will be a much bigger issue. The country would lose a fifth of its generating capacity and the government would need to import more electricity."

Wan-Track mind: How GNMS' new RFID solutions are keeping you on track...

GLOBAL NUCLEAR METAL Supply (stand G67) is at WNE with new radio-frequency identification (RFID) solutions for full traceability of nuclear-classified materials from raw state to finished product.

Called Wan-Track, it has been developed by two GNMS members, NRM and Nexess.

All the products GNMS sells are RFID-equipped and Wan-Track ready. A customer using a simple RFID reader can access all the information related to the products.

This information can be amended and transferred all through the manufacturing process and beyond; a maintenance team

working with the manufactured item can also access the information or add their own.

Raw material and associated documentation, direct from the mill or stockist, cover products including pipes, fittings, flanges, forged pieces and accessories in stainless steel, carbon steel or alloy.

DESIGN | PWR

Mitsubishi showcases future Atmea1 mid-size PWR design

Japan's Mitsubishi Heavy Industries (stand D54-E53) is showing a model of its new Atmea1 mid-size advanced pressurised water reactor (PWR).

This new third-generation PWR is a joint venture with AREVA and is capable of generating up to 1,100MW of power. The design is said to have high thermal efficiency, a 60-year service life and a load-following capability, so its output can be adapted according to demand.

The Atmea1's primary system comprises a reactor vessel, which contains the fuel assemblies, a pressuriser, one reactor coolant pump and one steam generator for each of the three loops, as well as all the related control and protection systems.

It also features a pre-stressed reinforced concrete shell, clad on its inner side with a steel liner. In addition to the primary circuit, the reactor building protects the water storage for safety injection and houses a dedicated spreading area for any molten core material following a possible worst-case accident.

In May of last year, Turkish Prime Minister Recep Tayyip Erdoğan and his Japanese counterpart, Shinzo Abe, signed a \$22bn deal for the construction of the Sinop nuclear power plant in Turkey.

The plant will comprise four Atmea1 reactors and construction is planned to begin in 2017, with the first unit in operation by 2023.

Mitsubishi's president, Kazuo Tsukuda, said:



Mitsubishi's Kazuhide Yamamoto at the show with a model of the Atmea1 reactor

"By bringing together the state-of-the-art technologies of both Mitsubishi and AREVA, we are confident that Atmea1 will be the leading plant in the mid-size reactor range,

and will be successful in attracting interest from our clients."

Mitsubishi has constructed all of Japan's 24 PWR plants.

NEWS | IN BRIEF

SANDVIK SHOWS OFF ITS MATERIALS EXPERTISE

Sweden's Sandvik (stand G81) is showing its materials technology, expertise and tubing product lines. It says these offer long-term value, improved safety and reduced failures for power plants worldwide. Its stainless steels and special alloys cover all fuel designs and most technical specifications and have been delivered to around 100 reactor units all over the world for 50 years.

Sandvik's product line includes steam generator tubes designed to meet the stringent MIZ-30/70 requirements. Other products on display include the Sandvik Sanicro 69TM austenitic nickel-chromium alloy used primarily for steam generators.

The material offers high resistance to stress corrosion cracking in the primary side of pressurised water reactors (PWR).

SOFREN CAPABILITY

Decommissioning is a key part of the discussions at this week's WNE event and one company at Le Bourget demonstrating capability in this sector is Sofren (stand C83).

As part of its portfolio of services, the French company offers analyses, research, scenarios, inventories, effluent treatment, submarine decommissioning, sampling and modelling. It was involved in the setting up of the Chernobyl decommissioning in Ukraine.

At the other end of the spectrum, it played a key part in the European Pressurised Reactor (EPR) at Flamanville in France and the nuclear waste reprocessing plant in The Hague.

Sofren now has 40% of its business in the nuclear sector, supporting the major international players in the development of basic and detailed design, construction, installation, start-up, nuclear power generation operations and decommissioning.

SWISS ROLL OUT THE PUMPS

Sulzer, (stand N20 - P19) based in Switzerland, has facilities at more than 150 sites all over the world. The company is at the show promoting its pumps for both nuclear and turbine islands and various reactor types. It also supplies safety-related pumps.

The company has many innovative designs, including its Sulzer balanced stator seal – an ultra-high performance cartridge unit that provides lifespan and leakage control.

The unit uses patented flexible stator geometry to automatically compensate for pump shaft deflections. Its installation also requires a minimum of downtime.

OPTIMISTIC TIME FOR CANADA

The Canadian nuclear industry has reason for optimism: upcoming refurbishments provide a "tremendous opportunity" for the next decade and beyond.

"Nuclear in Canada has not been in this position of opportunity through refurbishment for several years," said Doug Burton, chairman of the Organisation of Canadian Nuclear Industries (OCI).

OCI is promoting the expertise of its 180 member companies at WNE.

Export sales help sustain a strong domestic supply chain, added OCI president Ron Oberth.

"OCI suppliers compete in Canadian and international nuclear markets by building on the tradition of nuclear innovation, superior quality and service reliability that has enabled a relatively small nation like Canada to retain status as a tier-1 nuclear nation."

Canada's nuclear suppliers are located mainly in Ontario, the heartland of the country's nuclear industry. More than 80% of OCI companies are SMEs and many are diversified, supplying to other high tech sectors.

Six of the best from NEOLANT

THE NEOLANT GROUP from Russia has six different technologies on show at WNE (stand L41).

NEOLANT offers complex engineering and IT solutions in support of plant management for the nuclear and power

generation industries.

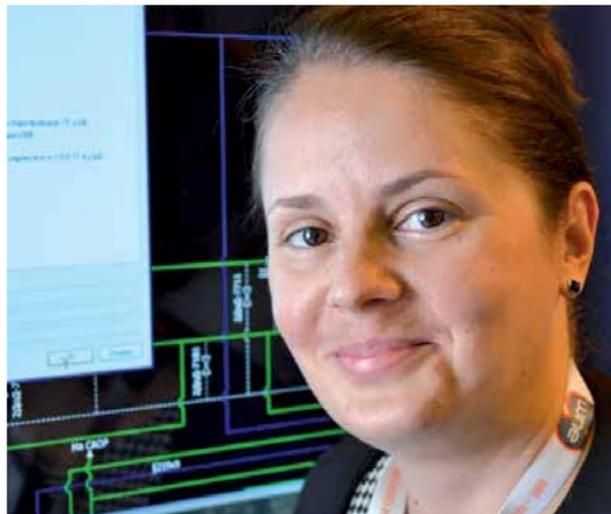
Among the projects on show are:

- The development of 3D engineering information models to support the whole lifecycle of nuclear energy facilities;
- Creation of simulation

models to simulate physical and technological processes, accident situations and contingency plans, as well as for personnel training;

- Nuclear facilities design and engineering, design and fabrication of non-standardised equipment;
- IT support of radioactive material and radioactive waste (RAW) management;
- Implementation of waste characterisation services developed by the Czech company ENVINET (from the Nuvia Group);
- InterBridge, a translation tool that enables graphic and semantic 2D/3D data exchange between different computer-aided design (CAD) and product lifecycle management (PLM) platforms with the purpose of creating an integrated plant information model.

The company said its solutions had been contributing to ensuring reliability and safety at nuclear facilities for more than a decade.



Above: Elena Konvisar, Neolant's marketing director, at the show

INNOVATION | DECONTAMINATION

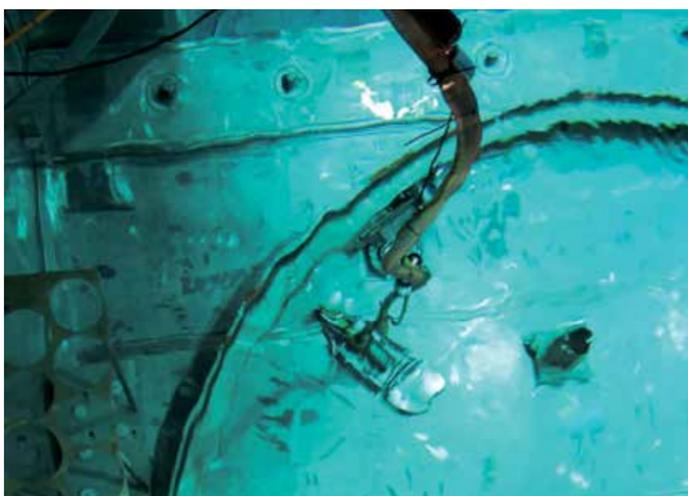
Bottom line: Robotic cleaners reduce exposure of operators

LUXEMBOURG COMPANY GRADEL is debuting two new robots which it developed for Germany's nuclear power plants to optimise the decontamination of the pool while minimising at the same time the doses for operators.

The company claims a reduction of 50% in the exposure during pool decontamination with its bottom pool cleaning robot, which is designed to operate alongside the wall-cleaning robot.

The robots are operated using two joysticks, with the wall cleaner storing particles in a filter bag before they are extracted with a light carbon tool, while the bottom cleaner is connected to a pumping system with a floating flexible hose attached to a filter.

Cameras fitted to the cleaner give the operator a clear picture of the process.



WIN AN IPAD! | WITH SFEN

Focus on yourself

During WNE, the French Nuclear Association (SFEN) invites you to share a friendly moment on its stand (stand N26). You could win a free invitation to a SFEN event or an iPad.

To play, take your 'selfie' on SFEN's stand and send it to selfie@sfen.org Good luck!



Steam generator tubes

vallourec.com

Meet us on



Stand n° F67

14-15-16 OCT. 2014
Paris - Le Bourget

With more than 40 years experience and the production of more than 40,000 km of steam generator tubes for nuclear power plants, **Valinox Nucléaire**, a subsidiary of Vallourec, is the world leader in this business field. The experience gained over the last decades feeds unrivalled know-how and a security culture that can be equaled by no other.

Valinox Nucléaire offers also nuclear environment products covering various needs, often in small quantities and with short lead times, requiring the intervention of a wide variety of techniques.

We go even one step further: our experts are working on new materials for fast breeder reactors (Generation IV) to offer tubular solutions for the energy challenges of tomorrow.

