

신울진 원자력발전소 1,2호기

Weir Group accelerates growth in South Korea & globally

The Shin Ulchin nuclear power plant in South Korea will come on line in 2016

With a history stretching back over 140 years, Scotland-based The Weir Group PLC has a proud tradition of supplying quality valves, and valve and pump services, to a wide range of industries. Over the past 50 years this expertise has enabled the Group to build a strong presence in the nuclear energy market, and today this presence continues to grow with participation in large projects such as Shin Ulchin in South Korea. Nuclear Exchange talked to Weir to find out more about the promising South Korean market and where the company is focusing its energies in this post-Fukushima world.

By Joanne McIntyre

The Weir Group has come a long way since it was founded by brothers George and James Weir in Glasgow back in 1871. Today Weir's global footprint covers over 70 countries employing more than 13,000 people. This year the company is celebrating not

only its 140th birthday but also a multi million dollar contract for control valves in South Korea. Mr. Roger Griffin, Managing Director at Weir Control & Choke Valves explains.

"Weir has been active in the South Korean market for over 20 years

supplying control valves to both the conventional and nuclear power sectors. Over this time we've built up good brand recognition in the marketplace. In 2001, we entered into an agreement with a local partner to produce Weir valves under license. At that time the





South Korean Government was pushing hard for localization of production, a move which continues to this day. It's essential to have localized manufacturing in South Korea to become a significant player in that market. Our local presence has enabled us to work on many large projects over the years, supplying a combination of Korean and UK manufactured valves."

With South Korea positioning itself to be a major global manufacturer of nuclear power plants, last year it was awarded its first overseas contract for a total of four APR1400 reactors, to be built at the new Braka nuclear power plant in the United Arab Emirates. The country is also pushing ahead with its domestic nuclear power program, including



Mr. Roger Griffin, Managing Director at Weir Control & Choke Valves

the Shin Ulchin plant currently under construction. "Weir Control & Choke Valves was awarded a contract from Korea Hydro & Nuclear Power Co Ltd to design, manufacture and supply over 100 control valves for safety related and severe service applications for two of the Shin Ulchin units," says Mr. Griffin. "The valves will undergo an extensive program of qualification testing to ensure they fully meet design requirements. Actuators and instrumentation are also required to comply with the relevant standards for safety related equipment."

"Due to the application these valves will be manufactured in our UK facilities as they require full nuclear qualification in accordance with ASME QME-1 (2000) requirements. Safety related valve packages are made up of both QME-1 qualified control valves and general service valves. At the moment the general service valves are supplied by our local Korean company, with the QME-1 valves being imported from our UK facilities."

Korean plant qualification

In July 2011, Weir acquired the majority share in the local South Korean manufacturing facility it has partnered with for 17 years and renamed it Weir International. "Next year we will start the process to gain nuclear accreditation for that facility," continues Mr. Griffin. "This move was justified by the extensive



Mr. Stéphane Lamotte, Nuclear Sales Director Europe for the Weir Group

new build program for the domestic South Korean market, as well as the large export market potential from the country. The Braka project in the UAE is just the beginning; they are pushing hard to export the Korean APR+1400 MW units into the Middle East, Asia and Africa. We plan to extend into new markets with the South Koreans as they pursue their ambition of becoming a significant participant in the global new nuclear power plant program. The Weir International facility is ideally positioned to support those ambitions."

Since January 2010, the Weir Group has invested significantly in the development and growth of its control valve business. "This investment was a key factor in our success in winning the contract for Shin Ulchin and our ability to target other potential projects such as the UAE Braka project. In the last 18 months, we have also secured some significant balance of plant control valve orders for the Chinese nuclear new build program, including orders for control valves from CNPEC for Ningde Units 3 & 4, and Fanchenggang Units 1 & 2. Our South Korean facility has supplied general service valve packages to local nuclear plants, including the Shin Kori project last year. Having local facilities in Asia means we are able to provide full servicing and aftermarket support; currently around 60 people in the Weir International facility provide full engineering and technical support."



The South Korean facility is a locally managed operation with just six ex-pats based there as part of the integration activities and to provide support from Weir's global operations. "This will be a Korean operation, fully staffed by Koreans. The President is our former licensee partner with whom we've had a close working relationship for 17 years. Local responsiveness is very important in South Korea and the responses required from customers can be more demanding than in Europe. For example European customers will generally ask for a response within four weeks; in Asia you may be given four days. It's essential to be in the same region as your customers to understand how they expect you to do business."

History and experience

Today Weir is reaping the benefits of its commitment to continue investing in retaining its nuclear accreditation and expert personnel through the quiet years when the market was in a slump. Mr. Griffin: "The Weir Group has supplied equipment to the majority of all operational units around the globe. We've been in the nuclear market for a very long time! Historically we have been supplying valves to UK and North American plants for over 50 years. We also supplied valves into many international projects such as the Lungmen plant in Taiwan, which was one of the largest projects to be completed before the Chinese new build program took off. One of Weir's greatest strengths is that we have a global footprint; we can provide local facilities and experts for servicing, testing, and manufacturing whether the market is South Korea, China, India or South Africa."

A suppliers response to Fukushima

Not all news in the nuclear industry has been good in recent times however; Mr. Stéphane Lamotte, Nuclear Sales Director Europe for the Weir Group, discussed how the industry is responding to the Fukushima incident in Japan. "The industry must be able to clearly demonstrate and explain why accidents

such as Three Mile Island, Chernobyl and now Fukushima cannot be repeated in the future. For the public this is essential if we as an industry want to regain credibility. As a supplier our role is to demonstrate to our customers - whether that's an engineering company or a utility - that we are professional, experienced and have the right skills to know exactly what we are doing and that we are utilizing our years of experience. Indeed, experience is one of the most important assets any supplier to the nuclear

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industry can bring to the table."

The impact on suppliers depends on regional responses to the incident, continues Mr. Lamotte.

"China is the driving force in new build projects and is continuing to source general service valves through local suppliers or joint ventures

between Chinese and American/European companies. Typically the more sensitive safety and severe service valves continue to be sourced from abroad. As the Chinese are moving towards Generation 3, little will change in terms of the way their suppliers operate. However we have seen that European utilities have reiterated that they don't want to deal with low cost countries for valve equipment. With its good reputation and established credibility for quality valve production South Korea is not considered a low cost country and so is ideally placed to supply the Asian market with safety and severe service valves."

"Today suppliers to the nuclear industry have the same responsibilities as they had before Fukushima; we have to guarantee the safe operation of the plant and the equipment inside it despite external events. What has changed is that the number of possible scenarios that must be taken into account has increased. We have to consider tougher conditions and higher constraints on the use of our equipment inside the plant, which has consequences for the design and complexity of the equipment we provide."



Weir provides professional repair, refurbishment and upgrade of valves worldwide



Control valves supplied to conventional island of Honyanhe NPP Phase I in China





QME-1 Qualification of TRICENTRIC® triple offset butterfly valve

“For Weir, one of the consequences of Fukushima has been a change in the focus of our business,” continues Mr. Lamotte. “While continuing to invest in the new build program we’re refocusing more of our R&D on the existing fleet for life extensions. Our aim is to utilize our skills to satisfy requests from customers for safety improvements. As a key supplier we consider it important to push positive changes, to be proactive rather than reactive. As we mainly supply safety equipment, the current market is an opportunity for us to promote these products to the existing fleet.”

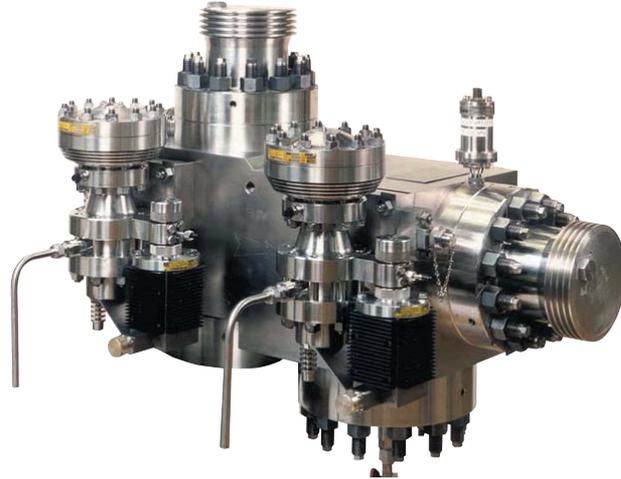
Serving the existing fleet

“In recent years Asia has driven our nuclear business, although Weir is also very active in North America with maintenance operations for the existing fleet,” continues Mr. Lamotte. “The US situation is unusual in that they have many utilities operating reactors across the country, compared to Europe where there are just a few utilities, and France which has just one utility with 58 reactors. Many of the US plants are quite old and some of the original equipment suppliers no longer exist. We are able to help our customers by undertaking reverse engineering to provide them with modernized valves, to supply spares and even implement new safety conditions. It’s a significant part of our business in North America.”

In Europe the company provides extensive services including manpower and asset management during plant outage and maintenance regimes. “With our primary European markets being the UK and France, as a Scottish company we are of course looking forward to participating in the UK’s new build program.”

Long term response to Fukushima

In gauging the long term impact of the Fukushima incident, Mr. Lamotte points out the importance of considering the industry in two parts; new build programs and the existing fleet. “New build activities which had started to speed up steadily since 2006, have now slowed down considerably. The UK, China, India and Russia are still committed to their new build projects but the overall program has been set back due to Fukushima.”



Weir designs and manufactures critical isolation, control and safety valves to nuclear power plants worldwide

“However, the gradual refurbishment of the existing global fleet through life extensions and uprates has been accelerated by Fukushima. Many countries were already making plans to extend the life of existing plants by 10 or 20 years to achieve a higher return on their investment. One of the most important lessons learned from Fukushima is to diversify redundancy for safety issues. Now modernization is being accelerated to implement safety improvements much more rapidly than before. While public perception is that the Fukushima incident has been bad for the industry overall, in fact the response has been a rapid increase in modernization and upgrades, to the advantage of accredited suppliers. So the slow down in new build projects is more than compensated by the modernization and life extension activities for the existing fleet. Overall I would say that the nuclear industry is still developing positively and has a bright future.”

Facts & Figures

Name:	The Weir Group PLC
Founded:	1871
Headquarters:	Glasgow, Scotland
Main markets:	Power generation, oil & gas, minerals
Nuclear manufacturing sites:	Ansan, South Korea; Elland, United Kingdom; Chateaufort-Martigues, France; and Ipswich, USA
Nuclear valves:	Gate, globe and check, butterfly, control and safety valves: Main Steam Isolation; Main Feedwater Isolation; Compact Integrated Safety; Isolation, Safety & Relief
Turnover 2010:	GBP1.6bn
Employees:	13,000

