Weir shows strong c the nuclear power in

The new manufacturing and engineering center in Ipswich, Massachusetts, USA

Weir Valves and Controls has a long-standing reputation as a global supplier to, among others, the nuclear power industry. For this highly specialized market segment, the company has just opened a new, state-of-the-art, nuclear valve manufacturing facility in Ipswich, Massachusetts in the USA. We met with Mr. Andrew Will (Divisional Marketing Manager) and Mr. Peter McGovern (Vice President Marketing) of Weir Valves and Controls to learn more about the new facility as well as Weir's commitment to the nuclear power industry.

By Esther Aiking-Martensen

"The new facility in Ipswich is a dedicated valve manufacturing facility where Weir produces valves for nuclear applications, both for new plants as well as existing ones." Mr. McGovern begins our meeting. "By building this new plant, we show a continued commitment to the nuclear industry, and to our customers, which include companies such as Westinghouse and GE. With the nuclear industry picking up speed as the interest in this form of power generation is growing again, we felt we had to act now, while the business is still on the doorstep."

Mr. Will adds that although this new facility will provide products and services to more than 100 existing nuclear power plants in the United States, the nuclear market of North America is by no means the only market for Weir. Over the years, the company has made their way into, British, French, Chinese operational plants plus those in many other countries around the world. "We just finished a shipment to a Taiwanese nuclear plant for example. Wherever nuclear power is back on the agenda as a viable source of energy, that is where we will be."

Increased capabilities

All valves produced at the new Ipswich site are manufactured according to the Nuclear Quality Assurance Program. Likewise, all work is covered by the ASME Code, Section III, Mr. Will explains: "This specifies how the materials that are used are handled and how we keep track of them and maintain their identity in

commitment to dustry

order to ensure that they conform to the specifications provided. Everything is geared towards this program so that our customers can rest assured that what they need for their highly critical nuclear applications is exactly according to these stringent specifications."

In addition to the Nuclear Quality Assurance Program, the new facility also operates according to Weir's LEAN production system, a system that results in increased efficiency, increased output, lower costs and improved quality, Mr. McGovern says: "The workflow in the new plant is designed in such a way that it is a smooth continuous flow. In short it means that this new facility not only provides us with far more manufacturing space, the manufacturing process has also been re-designed in such a way that we can upgrade our manufacturing capabilities, add new production and test equipment, and expand on our engineering and development capabilities. This will of course be of enormous benefit to our customers as we will be able to do even more than we could in the past."

Another advantage of the new facility, Mr. Will feels, is the benefits it will bring for after-sales activities: "After-sales service has always been one of our focal points but one that has strengthened further with this new facility. As we grow in our capabilities, we can also expand our aftercare service and our service programs and that is something we are actively doing in the nuclear power market as well."

The manufacturing area before preparation for installation of the large machine tools

Familiar faces and new capabilities

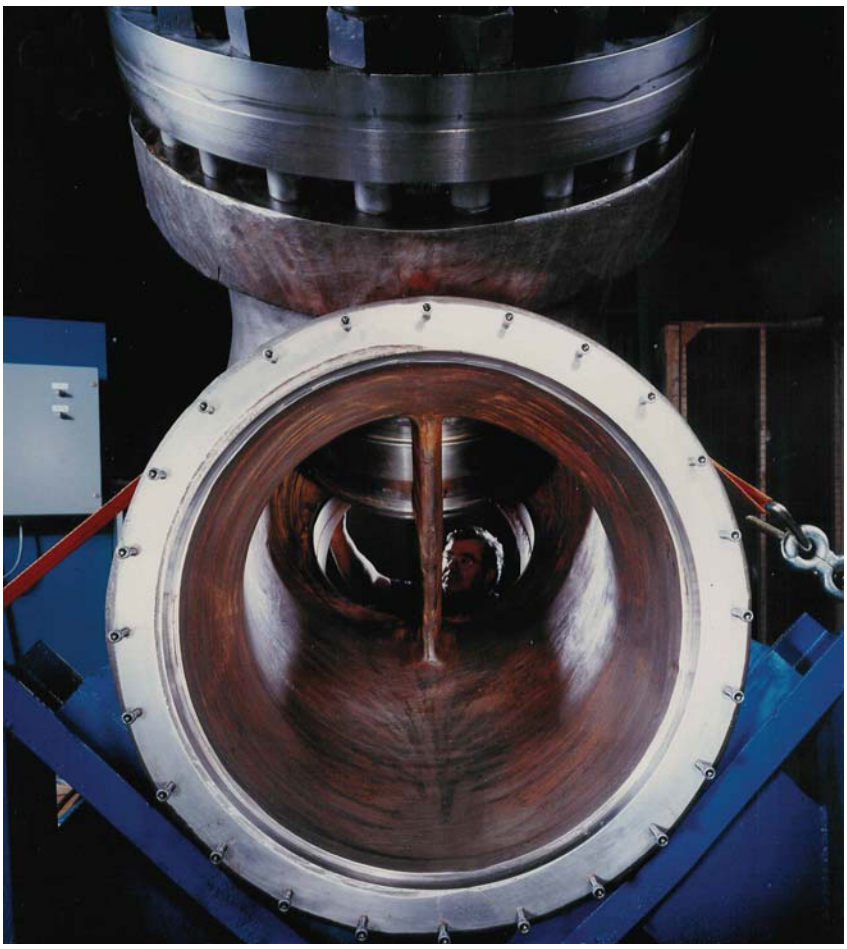
It is clear that with the increased, modernized production facility, much more can be accomplished in Ipswich compared to the old site, located in Salem, Massachusetts, which is, in fact, just a few miles down the road. However, and probably just as important, the close proximity to the old production facility meant that, in spite of the move, the company could retain the vast majority of the staff. "For our customers this means that they can rely on the same Weir team as they could in the past, with many familiar faces and names," Mr. McGovern says. "However, at the same time, we hope that the new facility will attract new specialist personnel as well, nuclear engineers interested in working in this 'high-tech' facility who will help Weir to further increase its capabilities in the nuclear field. Of course this, too, will benefit our customers."

Nuclear renaissance

The new Ipswich facility underlines Weir's clear commitment to the nuclear industry, which is a strategic choice as Weir firmly believes in the 'nuclear

Overview of the new Ipswich facility

WVC assembly and testing of Main Steam Isolation Valves in Salem facility



Atwood & Morrill Wye Globe MSIV being prepared for testing. View shows the almost straight through flow passage

renaissance,' the current buzz word in power generation. However, according to Mr. Will, this renewed interest does not directly refer to the construction of an abundance of new nuclear facilities in North America. "There are certainly steps taken in that direction and new plants will be built but I believe that, in the US, at least for the foreseeable future, the main market of the nuclear power segment lies in the refurbishment of existing plants, which remain open much longer than their original operation license was granted for. This means that we are dealing with a very mature market. Whilst many nuclear plants would be coming to the end of their expected life cycles, their lifetimes are now being extended or upgraded instead of imminent closure threatening."

At the moment, Weir's main market, in the US at least, lies in this nuclear plant refurbishment Mr. McGovern: "We do not only extend the life-cycles of these plants as they go for re-licensing but we can actually improve these plants while doing so. We can supply new valves as they go for power upgrades where the velocity of the steam in the system increases. We can modify valves to enhance their vibration resistance and we can also improve the sealing capability of the valves or the reliability of that sealing capability. And these are only some examples of the wide range of services we offer these plants."

The open plan sales and administrative offices encourage lean principals and operating methods in the office environment.

Recent trends

When asked to name some other trends in the nuclear power generation industry, in addition to plant life extension, Mr. McGovern says that in terms of design, both the plants as well as the valves have become considerably larger: "If you look at the Westinghouse AP 1000 (a two-loop plant with a capacity of 1000 MW - something that, in the past would only be possible with a three-loop or four-loop plant), today you have roughly 500MW per loop as opposed to 250MW or 300MW in the past. The prototype design valve for a plant of that type weighs over 60,000 pounds."

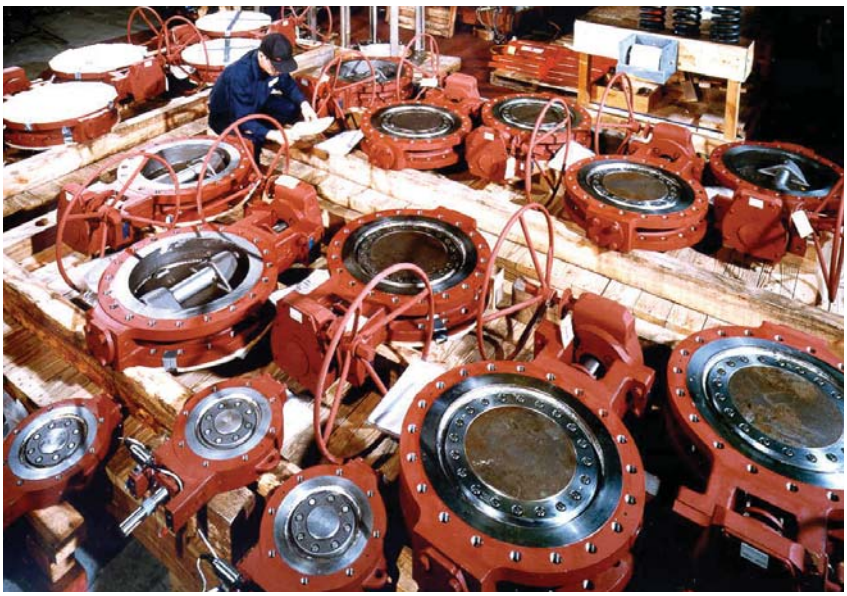
"In addition, Mr. McGovern continues, "I have also noticed an interest in

The attached montage shows various Atwood & Morrill Nuclear valves manufactured by Weir Valves and Contorls. Beginning at the top left and moving clock wise, they are: A controlled closure check valve. This valve is designed to minimize hydraulic shock in the event of a guillotine pipe break and the subsequent closure of the check valve while protecting the steam generator in a PWR. The next valve in the upper right is a parallel slide gate valve, the next valves in the lower right are air operated gate valves for a nuclear power station, the valve in the lower right is a FREEFLOW reverse current check valve for the bled steam non return. The valve in the center is a TRICENTRIC tilting disk check valve for a service water application in a nuclear power plant.

simplification of the valves, which largely effects the actuation process. For General Electric, who produce the BWR (Boiling Water Reactor), for example, we produce an air-operated spring-to-close globe type valve, which is a very simple and safe design." Another trend, and one particularly noticeable in the USA, according to Mr. McGovern, are valves that are fitted with so-called "Smart Stems," which measure the strain or the loading over the valve life. If the valve is becoming more difficult to operate that is indicative of internal wear.

Yet another development for the near future, for the next generation of valves in nuclear applications, is that they will be tested according to a new standard, called QME-1 is another ASME Standard, Mr. McGovern explains. "It is basically a standard meant to determine how the valve performs as it wears, by operating it for a large number of cycles. It has not been put in effect yet but when that will happen, it is more than likely that some of our engineers will be represented on the QME-1 committee."

Mr. Will takes over: "As far as geographical trends are concerned, it is obvious that China will be the main market for the construction of new nuclear plants for the coming decade and it is a market that Weir is active in as well. We have in fact been working with Westinghouse on their China projects since Westinghouse began building nuclear plants in China. For this purpose Weir has even opened a valve manufacturing facility in Suzhou in China."



TRICENTRIC metal seated butterfly valves for service water applications in Lungmeen AB WR in Taiwan

Challenges for the nuclear market

In spite of all the recent good news for the nuclear industry, Mr. Will also foresees some challenges for valve manufacturers involved in this market segment: "Our main concern with respect to the nuclear industry, it is the shortage of qualified sources of castings, especially with the American foundry industry having been decimated by the flight for China. It is sometimes difficult to find qualified companies that are able to supply to the stringent qualifications necessary for the nuclear industry. Improving and retaining the quality of our of castings is critical for us as we support the nuclear power industry, and something we are continuously working on."

And Weir seems to be not alone in this, Mr. McGovern adds: "Even the original plant manufacturers themselves seem to be occasionally scrambling for essentials such as containment vessel lids. Apparently, there is only one foundry in Japan that can produce those so some companies go along and place advance orders these units. I believe this will be the one of the main challenges that the industry will face over the coming years."

Ready to go

However, in spite of this - and other - challenges Mr. Will is adamant that Weir will continue to play a major part in the nuclear power industry: "We can honestly say that we produce some of the best valves in the this market, an industry that we are committed to, as the construction of the new Ipswich facility underlines. I firmly believe the nuclear business will go forward and Weir will be there. We have the right products, the right production capabilities and - most important of all - the right people on board and we will keep adding to this. We are ready to go!

The new sign makes it official

Facts & Figures

Company:	Weir Valves & Controls
Brands:	Atwood and Morrill, Batley Valves, Blakeborough Controls, Hopkinsons, MAC Valves, Sarasin-RSBD, Sebim, Tricentric
Headquarters:	Division, UK
Key products:	Critical service valves for isolation and control
Main markets:	Power generation, oil & gas, chemical industry, general industry
Web:	www.weirvalve.com