ANDRITZ: Passion for

Founded in 1852, ANDRITZ is among the world's leading manufacturers of machinery and equipment for industrial plants. Through a series of innovative developments and technological advancements, the company has established a unique product and service portfolio for the pulp and paper, hydropower, metalworking and separation industries. With over 29,000 employees in more than 280 locations, ANDRITZ has made its passion for new challenges and its engineering expertise the foundation of its versatile, reliable and efficient systems.

Pump Engineer had the pleasure of speaking with Dr. Uwe Seebacher, Global Director of Marketing, Communication & Strategy for the pumps division and the business area Separation at ANDRITZ, concerning the company's commitment to engineering customized products and its comprehensive solution offerings.

By Angelica Pajkovic

ANDRITZ's ACP series.

Originally established as an iron foundry, ANDRITZ understood the necessity of pumps in the emerging world and strove to ensure their progression. Soon after its inception, the company introduced pumps and water turbines into its product range, making the pump division at ANDRITZ the oldest operational department in the company. Headquartered out of Graz, Austria, the company now consists of four primary business areas, in which it excels worldwide.

"We have four major business areas at ANDRITZ," explained Seebacher. "The first one is Hydro, which also includes our longest tradition, the pumps division. The second is Pulp and Paper. The third is Metals and the fourth is Separation, in which we focus on mechanical and thermal separation. Together, we have a rather comprehensive portfolio to offer to our customers."

With the ability to simultaneously provide custom-tailored pump solutions for almost every industry, ANDRITZ is widely known as the go-to company for challenging projects.

Technology Driven

With dedicated engineers driving the production of high quality and efficient products, it is no surprise that the company is sought out for its ability to expertly craft unique and highly specified pumping systems. Passion, partnership, perspectives and versatility are the core values ANDRITZ successfully upholds.

"It is all about passion," stated Seebacher. "While it is our technologies that make us stand out, it is our love of innovation and the pursuit of knowledge that drives us to continue to transform and revolutionize the industry. We have a number of goals that we are continuously striving towards and what helps us to achieve those goals is our willingness to accept challenges from our customers."

The company's history of developing advanced systems has earned it the reputation of being able to achieve the impossible. The successful completion of a number of challenging projects is a testament to ANDRITZ's ability to develop innovative and effective solutions. One of its most recent projects, the Kaleshwaram project in the Indian state of Telangana, required 27 vertical volute pumps for three pumping stations, each with an efficiency of up to 90%. The company was able to not only provide comprehensive services, it was also able to accommodate the impressive size requirements of the pumps, which makes them similar to turbines. With

Innovative Engineering

a Francis impeller of 3.5 m, a total weight of 130 t up to 200 t per pump, and a spiral outlet diameter of 5.5 m, the pumps are large enough to park a truck comfortably. As this project was the first multi-stage lift irrigation project of its magnitude and complexity in India, and worldwide, ANDRITZ's customized vertical volute pumps were essential to the success of the development.

"Freedom within our structures and frameworks enables us to create, develop and ultimately manufacture a solution that meets the needs of our customers, whatever they may be," stated Seebacher. "Our solution is technology and we see ourselves as quality leaders."

Forward Thinking

The value ANDRITZ places on constantly creating new perspective for the company is one of the principle reasons why it has been able to maintain a competitive lead on interactive technologies such as Industrial Internet of Things (IIoT) applications.

"As we are aware that quality products are facilitated with encouragement, funding and guidance, ANDRITZ dedicates both its time and resources to ensuring that we engage in new and spontaneous challenges," explained Seebacher. "This way we are never caught playing catch up, we are always one step ahead."

The recent growth of IIoT applications in the pump industry pales in comparison to the progress ANDRITZ has experienced over the last 15 years; the company now incorporates various IIoT applications in its dynamic profile. They allow customers from all over the globe to virtually connect with ANDRITZ's service technicians using modern tools. Instead of having to wait for someone from the company to fly to remote or distant locations, customers can virtually connect with the company's service center, where an issue can be analyzed online interactively and potential solutions can be provided immediately.

"Although we make it our priority to increase the sustainability and performance quality of our products, we have never neglected emerging technologies such as IIoT," said Seebacher. "Rather, we see ourselves as market pioneers in these areas, and that enables us to further enhance the performance of our plants and products across industries. We give our clients access to data in real time which can help them mitigate issues and establish preventative maintenance practices."

All of the pumps delivered by ANDRITZ are IIoT compatible. That way the company is able to generate a collection of data that will recognize patterns and assess whether or not a pump is in its optimal condition, or if the customer has suffered any losses. This ability is highly beneficial, to both the customer and to ANDRITZ, as it expedites the reactionary procedures and promotes preventive practices for pump maintenance.

ANDRITZ has a number of fully equipped plants which employ smart sensor technology. These applications

A recent project required a multi-stage lift irrigation system in the Indian state Telangana. ANDRITZ supplied 25 vertical volute pumps for three pumping stations, each with an efficiency of up to 90%.

gather data which can be used to monitor products in remote or distant locations. The employment of these applications makes ANDRITZ one of the few companies worldwide that is able to provide virtual digital twinning with the IDEAS simulator software. This tool allows the company to optimize a newly planned plant prior to its actual construction.

IDEAS contains many industry-specific libraries that enable users to dynamically model a complete project. It can be used to test and verify design concepts and process control logic quickly, at low cost and low risk. IDEAS catches hundreds of errors in control logic before start-up, which means a plant achieves planned production on or ahead of schedule. Clients therefore receive products with an already optimized process value chain, which they can use to develop the plans for their specified projects. Since IDEAS is modular and scalable in design, many plants continue to use the simulator past start-up, for a variety of applications including process design and the training of newly hired employees.

Dynamic Growth

ANDRITZ has a unique understanding of the processes involved with creating a pump and an appreciation for its value chain.

A special feature of these pumps is that they are similar to turbines. Due to their impressive size, a Francis impeller of 3.5 m, a total weight of 130 t up to 200 t per pump, and a spiral outlet diameter of 5.5 m, they are large enough to park a truck comfortably.

The company's recognition of a pump as a single component of a plant's overall value chain, has allowed it to expand its product range and perfect its ability to integrate pumps into process landscapes. "As ANDRITZ has a number of services that extend beyond the manufacturing process, we can realize projects that other companies cannot," stated Seebacher. "With ASTROE, the center for hydraulic engineering and laboratory, we can perform various test runs on our products, and we can engineer and deliver reliable pumps equipped with unique features."

In order to continue growing its capabilities, ANDRITZ has made becoming a comprehensive service provider one of its chief initiatives. The company's most recent acquisition of Xerium Technologies is one of the many steps ANDRITZ is taking to close all of the gaps in its value chain; it is able to do this because of its 29,000 employees in more than 280 locations globally.

"Our objective is to be able to offer our clients the entire product line, from the production of the raw materials to after-sales support," stated Seebacher. "Our most recent acquisition of Xerium Technologies, accompanied by new methods of technological extraction, are significant steps towards optimizing our value chain and becoming a solution provider."

The ability to meet the needs of its customers across different segments, is one of the many characteristics that distinguishes ANDRITZ from other companies.

Advantageous Products

ANDRITZ knows that offering alternative production methods, in addition to a diverse range of products, is a significant benefit to the industry. That is why it prides itself on its concrete volute pumps (CVP).

CVP pumps are large pumps which revolve around high flow rates, rather than high altitudes, and are used for projects such as flood control. What makes this product particularly unique is that ANDRITZ has developed these pumps so that they can be engineered to use different structural materials such as concrete blocks, metal/steel parts or wood inlays.

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"The benefit of having our own casting technology, which we can use to manufacture custom products, is that we can increase the pace and decrease the cost of the manufacturing process. Especially in cases where the pump is exceptionally large," explained Seebacher.

The use of wooden inlays, in particular, allows for a significant reduction in cost and time. The inlays are boarded with wood and the concrete is poured around them. The wood part can then be removed and reused for another pump. As most other companies cannot do that, ANDRITZ has a distinct advantage.

ANDRITZ single-stage centrifugal pump from the ACP series is another unique product.

"The ACP series is a very exciting product line for the industry," stated Seebacher. "Thanks to their low axial thrust and open channels, these pumps are suitable for conveying many different media. Depending on the impeller design, they can convey slightly contaminated and contaminated media with some solids, with a consistency of up to 8%. Equipped with our innovative SMARTSEP degassing system an additional separation impeller acts as an integrated degassing system and removes gas from the media while conveying fibers reliably back to the pump at the same time. That is an especially brilliant feature for the pulp and paper production. Additionally, a modular system ensures high availability, enables the use of proven components and reduces the number of spare parts to be held in stock."

ASTROE, center for hydraulic engineering and laboratory, allows ANDRITZ to do various test runs on its products.

Motivated Passion

Among the primary priorities of ANDRITZ's pump division are: technology leadership, sustainability, knowledge transfer and extension of the product portfolio. With international service teams, and a constant drive to close its value chain gaps, ANDRITZ is a leader in innovative processes.

"We want to be seen and understood for what we are," explained Seebacher. "We carry passion from engineering to innovation because we believe it is important to the success of our customers."

For further information on the CVP and ACP pumps, go to: