Powell Fabrication & Manufacturing, Inc. recently introduced a High Strength Low Salt (HSLS) bleach application as a skid-mounted solution.

Maximizing productivity – and developing more efficient and safer manufacturing solutions – are key to success across the industrial landscape. But for chemical producers, those objectives take on heightened urgency and extend beyond the plant floor to the treatment of their products across the supply chain.

“The safe handling of a potentially dangerous chemical like liquid chlorine is critical throughout transportation and distribution,” said Brent Hardman, director of global development, Powell Fabrication & Manufacturing, Inc. “That’s a major concern for our clients in the chlor-alkali industry.”

Located in St. Louis, Michigan, Powell Fabrication & Manufacturing, Inc. provides engineered process systems for chemical producers and distributors worldwide. The company’s skid-mounted solution for sodium hypochlorite production, based on a process introduced more than 50 years ago, enjoys significant market share globally.

In the conventional process, chlorine, caustic soda and water are used to produce sodium hypochlorite (bleach) at a maximum concentration of 16.5% percent by weight. Typically, chemical producers deliver a standard 13% solution, which contains 10.4% salt (sodium chloride). The product is used for feedstock in other manufacturing processes or water treatment.
While the conventional process has served the industry well, Powell recently introduced a High Strength Low Salt (HSLS) bleach application as a skid-mounted solution. The HSLS system can produce bleach up to a 30% concentration and recovers more than 30% of the salts used in the process.

“Our HSLS technology offers significant advantages over the traditional bleach process,” Hardman explained. “It allows chemical producers to distribute a stronger solution, so they can ship less overall product.”

HSLS bleach is also a much more stable product, which is a benefit for manufacturing facilities and water utilities. In fact, the half-life of HSLS bleach is 1.7 times longer than conventionally produced bleach when diluted to the 13% standard strength.

In addition, Powell offers small, skid-mounted chlor-alkali plants for customers who plan to implement complete “salt to bleach” lines – or use significant amounts of chlorine derivatives or caustics in manufacturing processes. Based on the company’s UniChlor® technology, the turnkey solution provides an alternative to purchasing chlor-alkali chemicals.

“Our chlor-alkali plants use salt and electricity to make chlorine, caustic soda and hydrogen onsite at about half the cost to purchase the products,” Hardman said.

Moreover, the chlor-alkali plants can be integrated with other Powell equipment, including the HSLS system. The salt recovered from this bleach technology can be recycled back into the chlor-alkali plant.

“We are always working to develop cost-effective solutions for our customers,” Hardman said. “And we apply our expertise to other segments within the chemical industry as well.”

Recent additions to the Powell portfolio include a sulfuric acid dilution system – and custom engineered Inline Blending Machines (ILM). The ILMs replace multiple batch processes with continuous, multi-stream chemical blending.

No matter what the application, the Powell solutions are based on the Rockwell Automation PlantPAx® distributed control system (DCS), configured using standard control objects. The flexible and modular control and visualization platform accommodates the company’s broad portfolio that varies widely in complexity and levels of instrumentation. Depending on the application, PlantPAx DCS runs on either an Allen-Bradley® ControlLogix® or CompactLogix™ controller.

The HSLS and chlor-alkali plants typically include Allen-Bradley CENTERLINE® motor control centers (MCCs) with ArcShield™ and IntelligL CENTER® technology as part of the solution. The systems are integrated on an EtherNet/IP™ network and include local monitoring and supervisory-level visualization capabilities.

“Upon request, we utilize the Ethernet connectivity to provide remote monitoring and troubleshooting for our customers via a VPN connection,” Hardman said.

Powell support engineers frequently take advantage of Rockwell Automation training opportunities and also know they can rely on the company to help service their customers.

“All of our engineers carry the Rockwell Automation ‘technical support’ card in their wallets,” Hardman said. “We know we can call on Rockwell Automation no matter where we are for help with anything.”

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