

Moving wastewater plant operations into the digital age

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JAKE DANNA STEVENS / STAFF PHOTOGRAPHER Pleasant Mount Welding Inc. in Carbondale created a new control panel called the Human Machine Interface device. The panel is used to control a sequencing batch reactor.

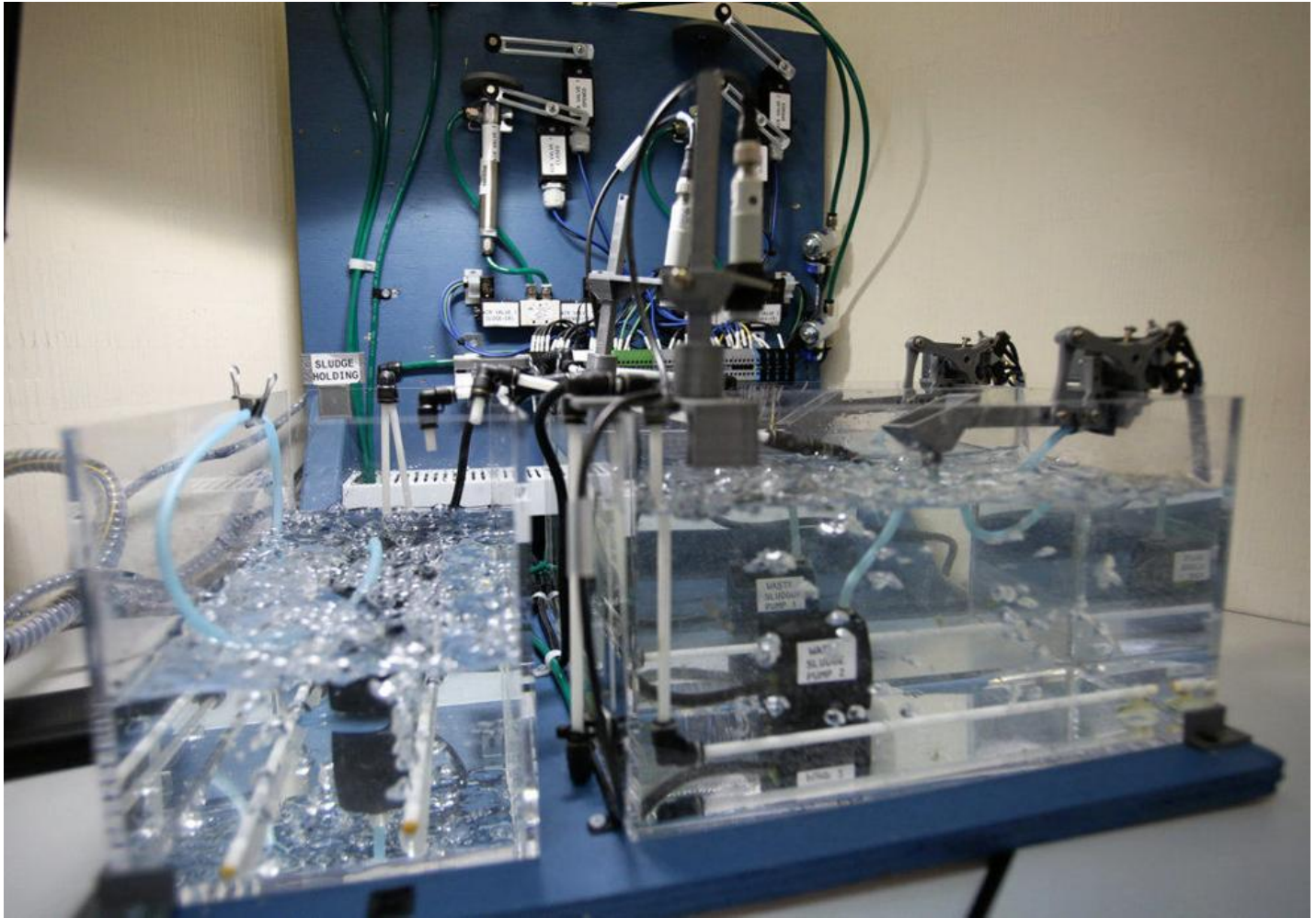


JAKE DANNA STEVENS / STAFF PHOTOGRAPHER The new control panel created by Pleasant Mount Welding Inc. in Carbondale will replace the larger control panel with multi-colored switches on the left.



From left Pleasant Mount Welding Inc environmental engineer Dave Klepadlo, Rick Klepadlo Director of Innovation at Johnson College, PMWI's owner Bob Non and automation specialist Joe Dobosh at PMWI in Carbondale on Thursday, Jan. 4, 2018. Jake Danna Stevens / Staff Photographer

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JAKE DANNA STEVENS / STAFF PHOTOGRAPHER A scaled-down model of a sequencing batch reactor created at Pleasant Mount Welding in Carbondale.

CARBONDALE — Pleasant Mount Welding wants to bring wastewater plant operations from the analog age to the digital age.

The Carbondale company will soon begin marketing a new control panel that can run municipal and industrial plants with a greater level of automation, replacing larger panels covered with multi-colored switches with compact, touch-screen versions.

Pleasant Mount Welding Inc. developed the custom programmable logic controller with Johnson College, using \$25,000 from Ben Franklin Technology Partners of Northeastern Pennsylvania among \$471,450 in investments to boost economic development.

"In the old days, it was mechanical timers that you used," company President Bob Non said. "Now you're dealing with automation. We can log in from our office here and see what's going on remotely. If there's any issues that come up, we get texts. We get email alerts. We get all that information. These plants basically can run on their own."

The systems can link to probes to actively monitor pollutant levels and other water quality factors and easily generate reports for regulatory agencies.

The company plans to market it in conjunction with sequencing batch reactors, which Engineer David Klepadlo described as an advanced treatment system that uses bacteria to consume contaminants in one tank.

The system is cheaper to build and maintain than traditional plants that use a similar process in multiple tanks.

For example, building a traditional 400,000-gallon-per-day plant would cost \$4 million, compared to \$2 million for a new sequencing batch reactor plant and \$1 million to retrofit an older plant, the company estimates.

The system can also cut energy costs in half and is designed to help facilities comply with newer environmental regulations, such as the push to reduce nitrogen levels prior to discharge into waterways, Klepadlo said.

Many communities in Pennsylvania, Delaware, Maryland, New York, Virginia and West Virginia are under orders from the Environmental Protection Agency to address pollution levels because discharges eventually reach the Chesapeake Bay.

Klepadlo designed one of the region's first sequencing batch reactors at the Elmhurst sewer plant in the 1980s.

"As time went on, we made improvements, and we also made improvements to the control system," he said. "This (controller) is now the heart of the system ... You have a smartphone. It's the same principle we touch on here, but that controls everything: every motor, every blower, every valve."

The company's new software has been running the Greenfield Twp. plant for several months already, Non said.

Pleasant Mount Welding already has hundreds of water and wastewater treatment customers from Colorado to Maine to Florida and expects the new technology to draw significant interest that could lead the 161-employee operation to hire more people.

Pleasant Mount Welding bought a nearly 50,000-square-foot facility in the spring for another new product — fabricating metal grating — Non noted, but said it is too early to say how many people the company might hire for its latest venture.

The firm is able to develop a new facility from scratch, assuming it doesn't have special needs that require further expertise, or help older plants retrofit their facilities.

"We're going to be selling software, engineering and design, electronics and manufacturing," Non said. "We have given tours and received interest already ... We're excited about it. I know the market will be there."

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