Solutions in Action

CSI

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CSI

Clean-in-Place (CIP) 2.0 Skid from CSI

Allen-Bradley® CompactLogix™ Programmable Automation Controller

Allen-Bradley PowerFlex® 755 AC Drive

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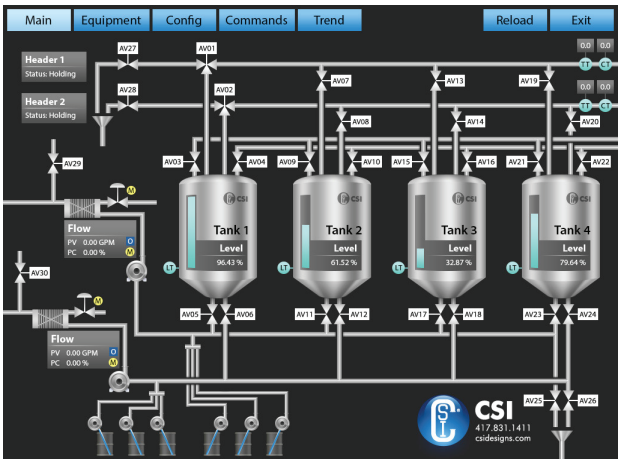
Up until the 1950s, fluid-processing systems in the dairy, beverage, processed food, pharmaceutical and cosmetics industries were most often disassembled for manual cleaning. Today, most fluid processors use clean-in-place (CIP) methods to more efficiently clean the interior surfaces of pipes, vessels, filters and process equipment without disassembling it. This allows faster, less labor-intensive cleaning, and more importantly, reduces the risk of chemical exposure to operators and helps prevent product contamination.

CSI delivers high-quality, reliable, clean-in-place equipment, process components and entire process skid systems. The company maintains its industry-leading position by designing flexible equipment that can be reconfigured quickly to meet the ever-changing market demands.

"We provide a wide range of process equipment—from a simple component to a full-scale fluid-processing facility," said Bryan Downer, vice president of sales at CSI. "Also, because we provide personalized services and support, our customers benefit from having a single point of contact."

As part of its ongoing commitment to delivering innovative equipment that can quickly adapt to customer needs, CSI developed a new CIP 2.0 process skid. The CIP 2.0 skid is comprised of one to four stainless steel tanks, each ranging in size from 150-400 gallons, mounted in a row on a stainless steel frame. Each skid has its own control box that contains the electrical controls for all of its pumps and valves. Depending on specific application needs, end users can program the CIP 2.0 skid to pump cleaning solution, water or sanitizer through certain sections of process pipeline or even an entire facility at a specified flow rate and temperature.



CIP System Operator Interface from CSI

"Our customers typically have a dedicated room for the CIP 2.0 skid, so that it can easily connect to and clean as much of the processing equipment in the facility as possible, all at once from a central location," said Trent Bullock, process engineer at CSI.

"Currently, many fluid-processing end users wait for a failure before they stop to troubleshoot their equipment, resulting in unexpected downtime," said Bullock. At the heart of the CIP 2.0 skid is an Allen-Bradley CompactLogix 5370 L3 programmable automation controller (PAC), which enables users to predict when they may need to conduct preventative maintenance, helping reduce downtime. The skid also captures valve-cycle and pump run-time data as it operates, allowing users to observe the life span of specific components and predict potential failures.

Operators and sanitation technicians can easily start and monitor the cleaning process using a 15-inch color touch-screen Windows 7 Allen-Bradley Industrial Environment Panel PC from Rockwell Automation. An Allen-Bradley PowerFlex 755 variable frequency drive provides advanced power control of the pumps and seamlessly communicates with the controller via embedded EtherNet/IP network technology. This allows for more accurate, regulated flow and output of cleaning solution. The embedded EtherNet/IP also allows users to easily integrate the skid into an existing facility and pull historical data from the controller to store it in the facility as needed.

"Our food-processing and beverage customers, in particular, face increasing regulatory pressure to deliver CFR-21 and S88-compliant systems at market-competitive prices," said Bullock. "Our equipment goes through third-party validation, and the CIP 2.0 skid automatically tracks, records and repeats the cleaning process so there is no question about whether it was executed properly. In addition, the information is acquired and stored in a way that is compliant with CFR-21 requirements."

Rockwell Automation assembles, programs and wires the control panel, which allows CSI to deliver a CIP 2.0 skid in a reduced leadtime. "By bringing standardization to our control systems, we reduced our design time, which more importantly, keeps cost down for the end user," said Bullock.

"Our new CIP 2.0 skid responds to a variety of unmet needs in the marketplace," said Bullock. "It provides a clean-in-place solution that easily integrates into a facility, helps predict preventative maintenance needs and identify the lifespan of its components, and allows users to effectively clean their process equipment in a compliant manner."

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