Industrial PC streamlines SCADA system and reduces costs

Summary

- Trimax Systems, a California-based system integrator, upgraded the SCADA system at the WRCRWA facility owned by Western Municipal Water District
- The original system used PLCs with operator interface terminals (OITs), but the OITs were not capable of running the new SCADA software and provided limited operator visibility
- Trimax replaced the OITs with Phoenix Contact’s Valueline industrial PCs
- The Valueline not only cost less than a comparable IPC from another manufacturer, but it also reduced development time and improved functionality when compared to a regular OIT

Customer Profile

Trimax Systems, Inc. specializes in all facets of industrial control and electrical engineering, including design, construction, installation and service for instrumentation, process control and automation applications.

The company is a fully certified UL 508/UL 698 panel shop for turnkey projects. Trimax has more than 27 years’ experience in project management, electrical engineering, training and system integration.

Challenge

Trimax’s client, Western Municipal Water District (WMWD) in Southern California, needed to update an outdated 15-year old SCADA system at the existing WRCRWA wastewater plant. There were major deficiencies in the existing system, including the inability to perform the reporting and trending required by the facility’s operators, as well as a distinct lack of modern SCADA system functionality. To improve the usability of the outdated system, Trimax upgraded the software to Inductive Automation SCADA, which uses web-based clients with unlimited licenses.

The new system allows operators to use the SCADA functionality on their computer workstations in the office, the PC operator interface terminals (OITs) in the field and their mobile devices in their pocket. Any computer with a Windows, Mac or Linux operating system can run the SCADA software.

There were originally two main PLC control panels located at the wastewater treatment facility. These control panels had existing OITs that, because they were not computers, could not natively
show the SCADA screens with Inductive Automation software or any other SCADA software. Specific OIT screens would have to have been programmed in the OIT software to mimic the SCADA screens, and even then they would only have been able to effect changes to the I/O connected to the local control panel, as opposed to an IPC running SCADA software that could control all of the I/O connected to the SCADA system over the entire plant. WMWD wanted to have a system that operators were capable of monitoring from anywhere on the plant grounds.

Solution

As part of the new SCADA system installation, Trimax replaced the original OITs with Phoenix Contact Valueline industrial PCs. Valueline is a line of configurable industrial PCs featuring a wide range of models, screen sizes and CPU choices to meet the needs of a specific application. Trimax selected the 17-inch monitor for easy visibility.

Chris McLaughlin, Director of Operations for Trimax, said “It was the perfect moment to switch over to the Phoenix Contact Valueline PCs as OITs. The superior functionality of an IPC to a regular OIT is invaluable. To take advantage of the functionality of new SCADA software and other technologies, it is necessary to be using an IPC. The 17-inch size was also appreciated by WMWD because it made it possible to view the whole screens with legible text.”

They also installed Phoenix Contact power supplies and surge suppressors to further improve reliability. While the Valueline comes with a standard two-year warranty, Phoenix Contact extended the warranty to five years because the units were purchased with the recommended power supplies and surge protection.

McLaughlin cited Valueline’s competitive price point and quality as key factors in the decision. “There is no doubt that an Industrial PC is superior to a regular OIT, especially in situations like this, and having them be comparable in price was an added bonus. It’s also nice to know that Phoenix Contact will replace the OIT under warranty long after other manufacturers would require me to buy a new one,” he explained.

By installing the recommended Phoenix Contact surge protection and power supplies within the control cabinet, Trimax increased the reliability of the industrial PC and extended the warranty to five years.

Results

Trimax and WMWD were very pleased with the initial installation. Since then, Trimax has specified Valueline and the recommended power supplies and surge protection in the District Master SCADA Plan, including four additional main plants and more than 75 satellite sites.

While the reduction in maintenance costs is difficult to quantify, McLaughlin said the Valueline saves time. He said that the IPC’s full functionality “prevents the operators from having to go back to the main operations building or radio another operator to assist in looking at the SCADA computer back in the operations building.” Furthermore, the cost savings realized by eliminating the requirement for OIT specific programming were quite large. “The real cost savings are immediate if you look at a different aspect of the original installation. It is far more cost-effective to use the same SCADA programming and let it display on many computers and OITs. Valueline and Inductive Automation save us the cost of additional programming that would be involved with other OITs, or other licenses that would be required with similar SCADA software.”

McLaughlin said that by switching to the Valueline, Trimax saves more than 40 percent compared with a similar IPC from another manufacturer.

“The quality of our total solution is more unified and streamlined because of the Phoenix Contact product. Additionally, it looks more impressive than other OITs,” said McLaughlin. “The product quality of the Valueline OITs is incredible, and it is backed by the best warranty that we know of!”