

Wastewater Treatment Facility Washes Away Control Problems with Remote Monitoring



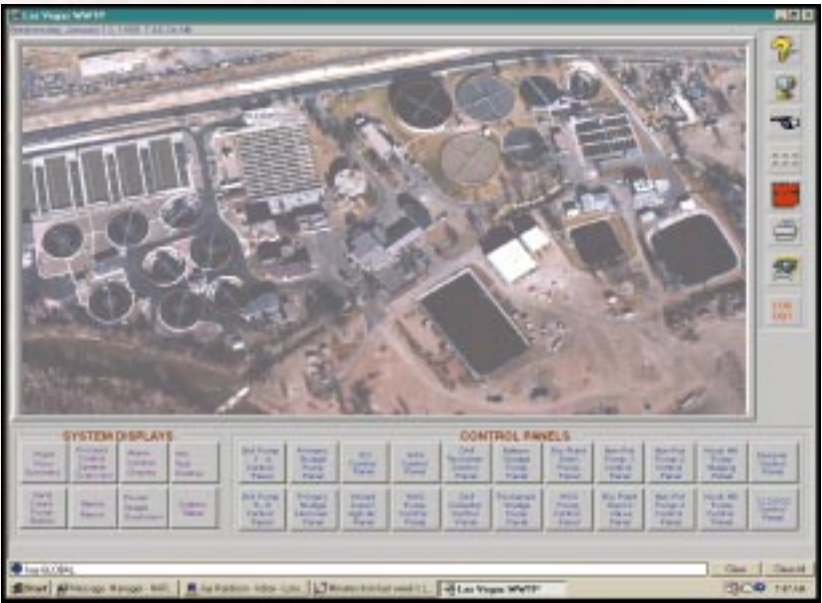
When the Colorado Springs Utilities Plant implemented a new process control system, they not only increased efficiency and reduced costs, they created a safer work environment. The new system was designed with Allen-Bradley PLCs and several Rockwell Software products including RSVIEW32.

The Colorado Springs Utilities Plant treats industrial and residential wastewater, and is responsible for serving over 100,000 area customers with a combined annual flow of 17 billion gallons of wastewater. The system serves multiple other facilities, including the Las Vegas Street wastewater treatment facility (WWTF) and the Sand Creek wastewater pump station, and provides remote monitoring of the Hanna Ranch solids handling facility. Implementing a new process control system and operator interface products to control, monitor and automate the treatment of water at this facility allowed the plant to improve plant efficiency, monitor systems from remote locations and lower overall customer costs.

Because the implementation of a new process control system had to coincide with the construction of new treatment facilities, timing and scheduling were critical to the success of the installation. The new system was designed to be brought online gradually to accommodate the startup of the new facilities.

"In an effort to remain competitive in the marketplace, the system had to be extremely

progressive in the optimization of its operations. The implementation of the control system had to support the optimization program to be



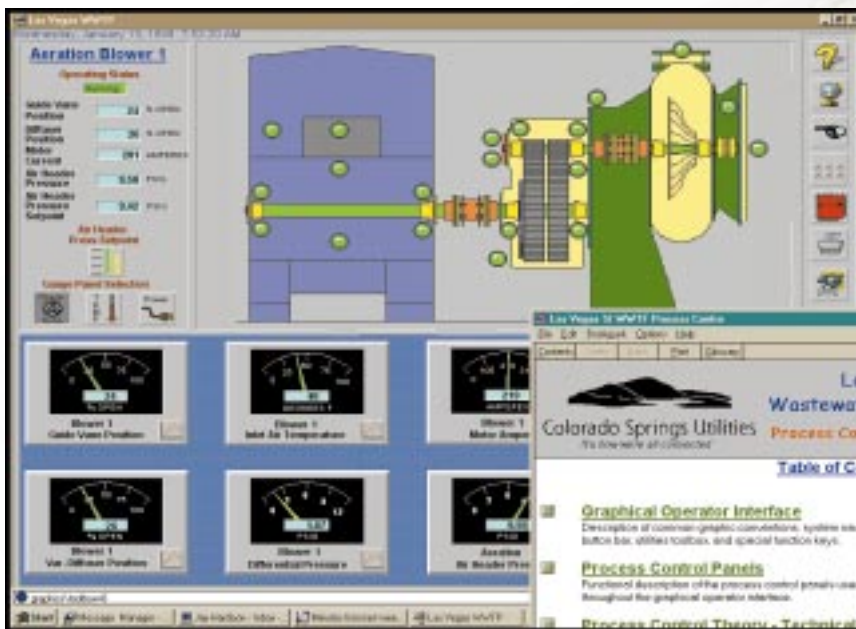
considered successful," said Jay Hardison, Colorado Springs Utilities Plant, Team Leader. Additionally, being able to monitor systems from remote locations and increasing overall plant efficiency were important factors in choosing a new control system.



Bringing Together Leading Brands in Industrial Automation

Cleaning Up the System

The wastewater treatment process control system is configured as a PLC-based control system providing full-supervisory control and data-acquisition capabilities. Eight geographically distributed Allen-Bradley PLC systems comprise the primary control layer of the system serving the Las Vegas Street wastewater treatment facility. The system includes one remote Allen-Bradley SLC 5/01™ which serves the off-site Sand Creek wastewater pump station and is integrated into the process control system via a leased telephone service.



Each of the PLC systems include an extensive remote input and output (I/O) network. In addition to serving traditional 1771 I/O racks, the remote I/O network provides a data communication interface to 14 Allen-Bradley 1336 variable frequency drives and two Allen-Bradley PanelView™ operator interface stations. A Data Highway Plus™ (DH+) network, comprised of both fiber optic segments and copper segments, serves as the primary communication network at the control layer supporting peer-to-peer communications between the PLC systems.

In the initial system configuration, four operator workstations utilized the network; however, the system was recently converted to the run the Rockwell Software RSView32 Active Display

Station™ Human-Machine Interface program. The RSView32 Active Display System™ software package allows users to securely control and monitor plant floor applications from local and remote locations. Users can interact with, change and view automation system data using either the RSView32 Active Display Station or a Web browser.

At the Colorado Springs plant, the Active Display Clients are located on desktops throughout the facility, providing direct access to wastewater treatment data via the plant Intranet site.

The remote access capabilities of the Windows NT® operating system also provide operations and maintenance personnel with access to the process control system from remote locations, such as their homes. With the introduction of RSView32 Active Display, an additional server was added to the DH+ network, and the workstations moved to an Ethernet® LAN.

Additionally, the Rockwell Software RSLinx™ communication program is used to fully develop the remote access capabilities by providing access to the DH+ network and all of the PLC processors via the plant Intranet site and through dial-up access.

The View from Afar

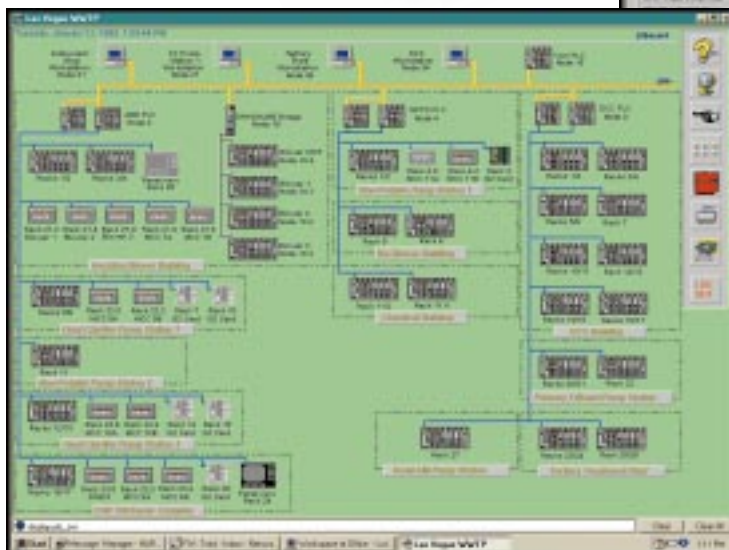
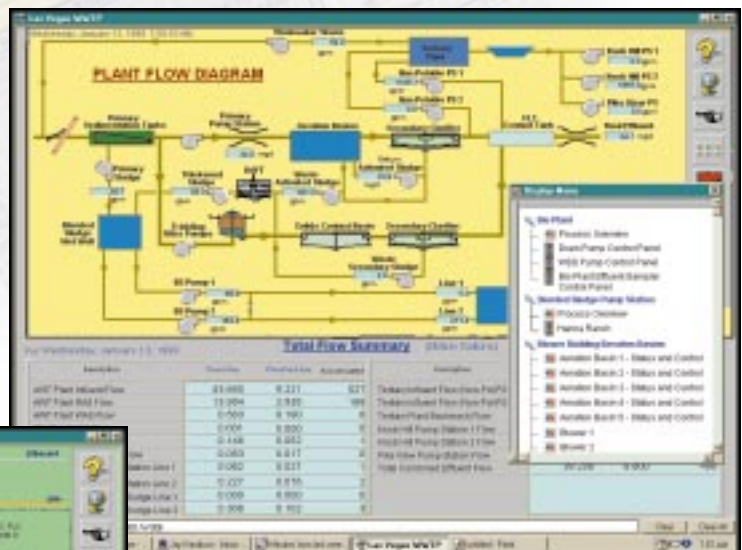
Because of the remote monitoring capabilities offered by the new operator interface system, the Hanna Ranch solids handling facility, which processes the solids from the Las Vegas Street facility, can be monitored from the process control system at the Las Vegas Street facility. The PLC system at the Las Vegas Street facility integrates with a PLC system located at Hanna Ranch via a microwave communications system. Critical operations data and alarm events are then reported through RSView32™ at the Las Vegas Street facility, allowing operators to monitor and view any problems with the water treatment process.

Through RSLinx, real-time data is communicated and stored in the Excel™ spreadsheet, giving Colorado Springs a cost-effective way to store and monitor data, given the limited functionality required by this application. Colorado Springs alarm-paging software also communicates to monitor and report alarm events via the utilities paging service. This allows users to be notified of any problem areas via their personal pagers through alphanumeric messages at the time of the problem. Due to the automated data collection, done through RSLinx on a fixed frequency, the accuracy of the data has improved through the elimination of manual recording and double entry.

Rockwell Software RSPower™, a Windows® configuration software program for power devices, is also used to provide monitoring of the Las Vegas Street power distribution system. The Power Monitor communication driver was also integrated into the RSVIEW32 application to provide the tags with direct addressing to the Power Monitors. The pass-through capability of this driver made it possible to directly address hundreds of power distribution system tags without any PLC programming.

management that had not existed before. “The implementation of RSVIEW32 and the ability to maximize its functionality paid immediate dividends in terms of operating efficiency. The facility’s staff was reduced from four operators per shift to two operators per shift,” said Hardison. “Additionally, quality improvements were realized as a direct result of the process control system — the improved machine monitoring and alarm response that Rockwell Software gave us resulted in both equipment and personnel safety.”

Because of these improved conditions and cost savings, Colorado Springs is able to offer customers lower water treatment costs.



Colorado Springs currently offers an average cost for residential customers at 33% lower than the national average, while industrial customers realize a 60% reduction in cost compared to the national average.

When asked what the future holds for Colorado Springs in regards to its system, Hardison replied, “We are very satisfied with the products offered by Rockwell Software. The continued evolution of their products will ensure that our facility is integrated with the latest and most innovative technologies, some of which are currently being evaluated for integration into this application.”

The Clean Truth

Colorado Springs’ new system gave the wastewater treatment utility a level of automation, process control and information

Stay up to date through the RSView Online Forum!

www.rsvviewforum.com



What is the RSView Online Forum?

- a community of RSView users
- a place to find out what's new in the HMI world
- an online resource filled with cool stuff for your applications
- a forum to ask "how do I...?" and to share "here's how I..."
- an open discussion area for providing us with your suggestions for new features and products
- a personal link with other RSView users, application specialists, developers, and marketeers



The RSView Online Forum features:

- technical and commercial news
- discussion forum
- design tools, including VBA code snippets, ActiveX® controls, and graphics
- version and patch information
- archived news articles, highlights from the Rockwell Software Support Library, and technical white papers

For additional information about Rockwell Software products and services, point your Web browser to <http://www.software.rockwell.com>

Reach us now at www.rockwellautomation.com

Wherever you need us, Rockwell Automation brings together leading brands in industrial automation including Allen-Bradley controls, Reliance Electric power transmission products, Dodge mechanical power transmission components, and Rockwell Software. Rockwell Automation's unique, flexible approach to helping customers achieve a competitive advantage is supported by thousands of authorized partners, distributors and system integrators around the world.

Americas Headquarters, 1201 South Second Street, Milwaukee, WI 53204, USA, Tel: (1) 414 382-2000, Fax: (1) 414 382-4444
European Headquarters SA/NV, avenue Herrmann Debroux, 46, 1160 Brussels, Belgium, Tel: (32) 2 663 06 00, Fax: (32) 2 663 06 40
Asia Pacific Headquarters, 27/F Citicorp Centre, 18 Whitfield Road, Causeway Bay, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846

