

APPLICATION NOTE

WASTEWATER

PROCESSING FACILITY

CUSTOMER

A Systems Integrator implementing an industrial automation solution for a wastewater processing facility.

CHALLENGES

- Supporting remote control and data collection from remote wastewater stations
- Upgrade and/or enable connectivity to remote stations
- Increase connection speeds while managing connectivity costs
- Ensure security

RESULT

- Reliable data collection from 11 remote stations with few components
- An easy-to-use and flexible solution for multiple protocols
- Visibility and monitoring through an HMI and remote networking software
- Streamlined solution reducing complexity

THE

PROBLEM

A municipal wastewater processing facility needed to upgrade its control architecture to connect to 11 remote assets throughout the county.

In the municipality's legacy architecture, a Rockwell ControlLogix PLC in the municipality's main control room sent data to the SCADA system. At the remote pump & lift stations, Rockwell SLC-500 PLCs enabled local control (e.g., pumps, fans, indicator lights, valves, etc.), but connected to SCADA through an outdated dial-up system or lacked connectivity entirely. As a result, critical operational, control and performance data were either not sent, or sent far too slowly to the main SCADA system. The facility urgently needed to gain better visibility and control at its remote sites.

THE

SOLUTION

The Systems Integrator was awarded the project from the local municipality. Red Lion had previously partnered with the systems integrator along with our local distribution partner on similar applications. They collaborated to develop a solution that met the project criteria and provided cellular access to multiple remote pump & lift stations.

The solution to access, connect & visualize needed to be scalable, secure, and robust, as the existing remote lift stations were located several miles from the primary facility's wastewater treatment plant SCADA system. The solution replaced the existing Rockwell equipment with Red Lion solutions including N-Tron® series NT24k® Gigabit managed industrial Ethernet switches connected to FlexEdge® DA50A which were installed in the SCADA control room. Each remote pump & lift station managed Cellular communications with Red Lion's FlexEdge® DA50A back to the SCADA control room connecting Red Lion's Graphite® HMI with I/O and Crimson® control modules. Crimson® control module provided IEC 61131 programming functionality. The FlexEdge® DA50 at the wastewater treatment plant and remote pump stations connected to each other via 4G cellular VPN tunnels (enabled by the FlexEdge® Cellular Sled, Verizon 4G).

This was the end user's introduction to Red Lion's N-Tron® managed switches. After familiarizing the Systems Integrator and end users with the N-Tron® series' capabilities and diagnostic tools, it was clear the solution offered the simple connectivity, ease of use, monitoring and performance required.

THE RESULT

The municipality is now able to access valuable data in a timely manner or was previously inaccessible. It gained the ability to control, visualize, and connect to its remote assets through one main location. Those components are successfully controlling remote sites, collecting data and sending it securely to the facility's main SCADA system through cellular VPN's - eliminating costs of the dial-up network or the need to run fiber to all the remote stations.

MORE CAPABILITIES WITH FEWER COMPONENTS

The solution not only enables remote access and control, it reduces the complexity of the topology optimizing their ability to service and maintaining local and remote assets. Instead of including five or six separate devices and technologies inside a main panel, the Red Lion solution provides the necessary capability in a single hardware device with a single software program: the FlexEdge® DA50A connected to Red Lion's Graphite® HMI with Crimson® control.

The System Integrator was able to offer the municipality secure remote connectivity, data collection and automation from two main components. Red Lion's Crimson software made it easy for stations with multiple protocols to communicate with one another- a reduction in overall cost and complexity.

The end user appreciated the diagnostic capabilities built into the FlexEdge® through the advanced web server; from security to certificate management. They also valued our N-View™2 network monitoring software on the NT24k®. N-View™ 2 software quickly provides easy-to-read monitoring pages displaying switch status and port traffic information for troubleshooting cabling and configuration issues.

A HIGH PERFORMING, REPEATABLE SOLUTION

Modern, secure and scalable solution that simply integrates into almost any infrastructure while reducing implementation time, support and complexity.



Red Lion is focused on being THE Industrial Data Company™. We empower industrial organizations around the world to unlock the value of data by developing and manufacturing innovative products and solutions to access, connect and visualize their information. Red Lion's global manufacturing and support facilities serve customers in factory automation, alternative energy, oil and gas, power and utilities, transportation, water and wastewater industry segments. We provide scalable solutions for cloud connectivity, edge intelligence and asset management, industrial Ethernet switches and industry leading panel meters and operator panels, to make it easy for companies to gain real-time data visibility that drives productivity. Red Lion is part of Spectris plc, the experts in providing insight through precision measurement. For more information, please visit <http://www.redlion.net>