Easy Updates Give Public Works Department Advantages of Manufacturing Intelligence

Wastewater System Control and Plant Software Upgrade Improves Asset Management, Efficiency

Solutions

- Control system upgrade, Allen-Bradley® ControlLogix® PAC
- Rockwell Automation® FactoryTalk® Software
  - FactoryTalk Historian SE
  - FactoryTalk AssetCentre
  - FactoryTalk Alarms and Events
- ISP Partner Program
  - System Design, Configuration and Implementation
  - Project Management
  - Industry Expertise

Results

- Improved response time to wastewater system anomalies
- Greater work order/operations efficiency
- Overcame firewall and connectivity challenges to improve visualization of process data
- Better reporting enabled improved asset management

Background

When a major Midwestern municipality decided to upgrade the control system that managed its wastewater system, it recognized the potential value of utilizing system data to make more informed decisions and, ultimately, reduce ongoing operating costs.

Challenge

The existing control system was a complex network of more than 600 remote stations over different communication protocols. By upgrading the control system, the city would rely on improved data management and decision-making tools to reduce downtime, minimize response times to failures, reduce ongoing maintenance costs, and enable reliable reporting on their operations. Critical to that result was the delivery of a design that would provide high availability, reliability, and improved asset management – all in an existing control system with limited bandwidth and latency issues associated with such a highly complex system.
Solutions

System integrator Engineering and Information Solutions Group (EIS) worked closely with the city municipality, Control Systems Integrator – Frakes Engineering – and with long-time partner Rockwell Automation to deliver that solution. EIS, founded in 2002, focuses on implementing the Rockwell Software® manufacturing intelligence solution, a data management, trending and reporting suite designed to integrate with legacy systems. The scalable solution enables users to incrementally improve operations by upgrading existing systems.

“At the front end of a project, we work hard to understand both the functional requirements of the project and the expectations of developers and end-users,” says Brad Downen, EIS President. “Knowing the stakeholders and exactly how they would want to use the information is critical to helping our clients succeed in meeting their business objectives.”

EIS needed to implement a store and forward solution system that would deliver data to a main server, provide connectivity among all communication ports, and overcome latency issues by providing for more accurate time-stamp information from more than 600 stations. Doing so demanded the team migrate stored data from remote lift station controllers, through a central control room ControlLogix data concentrator, and into a process database. Furthermore, the team needed to federate time-stamped process data with event data into reports that were easy for operators to rely upon in making performance-improving decisions.

Since the FactoryTalk products used on the project were built around newer network speeds, EIS needed to work through challenging bandwidth and firewall issues, planning uploads and auditing accordingly. In addition, the team would have to overcome the complexities of aggregating information from multiple data sources and vendors.

Results

Ultimately the team was able to resolve the data capture dilemma for the city as well as develop the managed solution to enable better asset management. Like most customers, the city wanted to reduce downtime and increase its ability to react to system anomalies. EIS was able to integrate the technician-response-time to the work order system, improving the city’s ability to analyze its service record while saving an operational step.

The city also realized the benefits of collecting and reporting their process data from FactoryTalk Historian SE using an Advance Calculation Engine (ACE) module to feed process data into the Historian SE’s archive files for trending and reporting. Reporting is delivered via FactoryTalk Portal Dashboard enabling stakeholders to visualize and take action on that data.

“Partnering with local experts like EIS enables us to deliver end-users manufacturing intelligence solutions that are compatible with many of the plant floor assets they already have installed – we just help them use them more effectively,” says Robert Eisenbrown, Vice President, Global Marketing, Rockwell Automation.

The results mentioned above are specific to Engineering & Information Solutions Group’s use of Rockwell Automation products and services in conjunction with other products. Specific results may vary for other customers.

The company needed to migrate stored data from remote lift station controllers, through a central control room ControlLogix data concentrator, and into a process database. The solution included:

- **FactoryTalk Historian SE** provided a high availability server that collected the store and forward process data from remote sources
- **FactoryTalk AssetCentre** provided access to control system and tracked user actions, managed configuration files, and provided backup and recovery of asset configurations
- **FactoryTalk Alarm and Events** provided an easy-to-use HMI that identified alarms and events critical to maximizing operational efficiency