

Portland Water Bureau

Secure network information readily available to enterprise users



PROJECT AT A GLANCE

Project Type

Management of water supply, treatment, and distribution

Location

Portland, Oregon

Number of Residents Served

Nearly one million

Applications

Network data management for more effective security and enterprise operation

Equipment Installed

Distributed OASyS DNA 7.5 SCADA system

CUSTOMER BENEFITS

- Robust, distributed operation for reliability
- Infrastructure cyber-security
- Efficient business systems interface



Portland Water Bureau, more than 100 years old, is a public water utility located in Portland, Oregon. It is responsible for the supply, treatment, and delivery of water to about 935,000 consumers in parts of Multnomah, Washington, and Clackamas counties in Oregon — nearly one-fourth of the population of the state. This service involves approximately 35 billion gallons of water annually. In 2011-12, more than 566,000 of those consumers were retail customers served directly by the utility. Another 368,000 consumers are served by the utility's wholesale customers, including suburbs of Portland, water districts, and private water companies.

Portland Water Bureau is a recognized leader among water service agencies across the country. In addition to providing reliable water service to its customers, it strives to provide the highest value to those customers, through excellent business, management, and operational practices and appropriate application of innovation and technology.

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Portland Water Bureau project manager

Challenges

Portland Water Bureau looked to upgrade its aging supervisory control and data acquisition (SCADA) system to provide the fully redundant communication and control necessary for reliable operations and remote disaster recovery, while maintaining the legacy-system functionality on which the utility relied. To do so, it was necessary for the new SCADA system to integrate with the established network of field measurement units — including approximately 200 remote terminal units, 2300 analog inputs, 6700 status inputs, 100 rate points, and 100 reservoir points.

Solution

Portland Water Bureau had worked with Schneider Electric SCADA systems for more than 15 years and selected the company's OASys DNA 7.5 SCADA solution for its network system upgrade. The system's distributed architecture includes a central Water Control Center (WCC) system and a fully redundant disaster recovery monitoring and control system that also serves as a backup site for the WCC system. The system also includes a Decision Support System (DSS) that provides a view-only repository for remote access and reporting functions. A number of custom applications are included, along with Schneider Electric controllers throughout the system.

Portland Water Bureau's project manager explained how this solution provided the agency an ideal mix of established user interface and improved data management.

"It was a very smooth migration," he explained. "We were able to overlap the legacy and new systems during implementation. Instead of re-developing the user interface, we were able to use our existing displays in the new system, giving it a familiar look and feel for users. Yet, with access to the code behind the displays, we have easily configured new displays where needed."

He continued to describe how the system's standards-based architecture allowed full integration with the legacy investments in field infrastructure and other utility information systems, as well as the agency's own automation tools. The operating system-based graphical user interface allows administrators, analysts, and operators a role-based, single sign-on access to real-time information, event summaries, and high-performance trending for process analysis. He cited, as an example, the system's direct interface with the agency's supply model for more efficient and accurate analysis.

The Bottom Line

Above all, the project manager highlighted the operational performance benefits of the agency's new SCADA solution, describing it as "a vastly more secure framework," due to tools to track and manage changes in a way that meets federal guidelines for cyber-security audit requirements.

"It is the remote disaster recovery solution we consider essential," he emphasized. "The distributed-control OASys DNA 7.5 SCADA system enables the robust network reliability Portland Water Bureau requires, providing real-time information across the network and allowing backup control at the disaster recovery site."