



CUSTOMER CASE STUDY

Puerto Rico Water and Sewage Authority Delivers Increased Customer Satisfaction with AVEVA Solution

Puerto Rico Water and Sewage Authority - www.acueductospr.com
Industry - Water and Wastewater

Goals

- Maintain high quality standards for EPA compliance
- Increase efficiency of management for one of the world's largest system platform installations
- Enable better visibility and troubleshooting for over 1,500 sites
- Provide higher capacity output while controlling costs

Challenges

- More than 120 different platforms to be integrated
- Needed faster deployment of new installations
- Tough terrain with areas where radio and DSL communications can't reach

Solutions

- AVEVA® System Platform
- AVEVA Historian
- ActiveFactory® Trending, Analysis and Reporting Software
- AVEVA Historian Clients
- AVEVA Industrial Computers

Results

- Output has increased from 12 million gallons to 20-30 million gallons
- Cost savings estimated at \$15 million over seven years
- Fewer shutdowns and improved customer satisfaction due to proactive trouble shooting
- Island-wide standardization for faster installations and increased operator ease-of-use
- Clean, EPA-compliant water

Puerto Rico – Since being discovered by Christopher Columbus in 1493, Puerto Rico has lived up to its name as a “Rich Port.” But since the island lacks a source of fresh water, inhabitants have always had to be wise with this precious resource.

During Spanish Colonial times, the military built five large cisterns beneath the Main Plaza to collect rain water. But today, with a population of almost four million people, the nation’s needs for clean drinking water and waste water treatment are much more extensive. The system that serves them has grown to over 10,000 miles of water mains and aqueducts and 2,000 miles of sewage lines.

This large operation is managed by the Puerto Rico Water and Sewage Authority (Autoridad de Acueductos y Alcantarillado de Puerto Rico). The agency supervises over 1,500 sites that provide service to all five regions of the island. More than 120 platforms have been deployed, making it one of the largest System Platform implementations in the world today.

Investing in Progress

The Puerto Rico Water and Sewage Authority’s strength is not just in its size. The agency is committed to advanced technology that enables it to provide the highest quality services. AVEVA distributor iMiS has been a key partner, working with the Authority to meet its aggressive objectives.

The latest updates were deployed so that the Water and Sewage Authority could increase water output, maintain EPA compliance, improve efficiency and also control costs. And while these goals may sound contradictory, with iMiS and the AVEVA solution, they were all possible.

To do it, iMiS recommended the addition of a state-of-the-art security system, high-speed historical data collection and components that would enable centralized management of 100% of the agency’s critical facilities.

“Using AVEVA software has made this plant the role model for the Metro region. It has helped us improve and maintain the quality of the water produced in this facility – which is excellent!”

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Nancy Caceres
Plant Manager-Guaynabo

Improving Efficiency and Quality

The first step was to transition to a fully automated system. By eliminating as many manual operations as possible, the AVEVA solution enabled the Authority to reliably control all aspects of the water and waste water treatment system – and to be proactive about it.

Jose Luis Muñoz, President of iMiS, explains, “The Water Authority has changed from a reactive system to a proactive system with the AVEVA solution. We know what’s going on now, rather than having users tell us.”

With real-time diagnostics, operators monitor the quality of the water and the treatment processes, plus they can make timely changes that help prevent compliance violations. Also, with the addition of AVEVA Historian, data can be gathered and organized easily and quickly for the monthly reports required by the Environmental Protection Agency. This means that the quality of the water is maintained consistently and the Water and Sewage Authority is meeting compliance regulations.

The agency has gained better troubleshooting capabilities as well. According to Muñoz, with system-wide data at their fingertips, decision making is much more rapid and efficient. Hector Sanabria, Information Technology Director, agrees, “You have all of the information in front of you. Therefore, once you see different alarms within the software interface, you can make decisions. You do not have to go directly to the facilities because you can see the information on the screen.”

Communications Across the Island

Increased visibility and reduced travel to the many system sites is critical. Because the agency serves the island's entire diverse and remote terrain, the AVEVA solution also needed to provide better communications. Various technologies combine to solve this challenge, including frame relays, radio, DSL and satellite links. Time and money are saved because trips to remote sites are minimized.

More Water Without Increased Costs

With a growing population and brisk tourism, the demand for more water in Puerto Rico is constantly growing. This is another area where the new AVEVA solution has solved an important challenge. Because, even though more water is needed, the ability to provide it cost effectively is also a requirement.

The new solution has enabled system-wide consistency in monitoring and allocating resources and overall output has steadily grown. Sanabria says, "We've used AVEVA software to analyze our processes and capacity. And based on this data, we've realized that we can, in fact, increase our output." The Authority now produces 20 to 30 million gallons of water, up from 12 million gallons before the AVEVA solution was implemented.

The increase has been accomplished without taxing the Authority's budgets. The agency estimates that within about seven years, the new system will save Puerto Rico close to 15 million dollars.

Customer Satisfaction is the Ultimate Goal

With the AVEVA solution in place, the Authority is realizing substantial benefits:

- Facilities in all five regions operate consistently and maintain the same, high quality of water and waste water treatment
- Standardization, enabled by the AVEVA System Platform, allows resources to be allocated among the regions as needed
- New stations can be deployed faster, also through standardization
- Automatic fault detection of remote PLCs, pumps, sensors and instruments minimizes the need for manual inspections, saving time and money
- Real-time monitoring and alarms improve control of the operation and prevents sewage overflows and water distribution faults

But the most important result of the new solution is that the customers of the Puerto Rico Water and Sewage Authority are experiencing better service. Thanks to the dedication of the agency's management and staff along with a valued distributor partner and advanced automation technology from AVEVA, the island's citizens are enjoying abundant, clean water delivered consistently and cost effectively.