SmartSights

CASE STUDY · WATER TREATMENT

Forward-Thinking Utility Knows the Value of Advanced Technology

ReWa renewable water resources

LOCATION
Greenville, South Carolina

INDUSTRY
Water & Wastewater Treatment

WEBSITE
rewaonline.org

CHAMPION
Tony Jones

Greenville County, South Carolina, encompasses an area of approximately 795 square miles with a population of over 500,000. The water and wastewater infrastructure servicing the county is intricate and robust, and includes over 350 miles of pipes connecting the community, and providing for future growth and development.

Renewable Water Resources
Greenville, South Carolina

For almost 100 years, Renewable Water Resources (ReWa) has been responsible for the county's wastewater infrastructure and manages eight water resource recovery facilities (WRRF). This oversight includes purifying more than 40 million gallons of water per day from homes, businesses and industries. ReWa operates 83 pump stations and nine water treatment facilities. Each facility contains a self-sufficient water treatment process with onsite power generation and sometimes thousands of gauges, flow meters and storage tanks depending on the facility size.

Since 2002, ReWa relies on AVEVA's System Platform SCADA system integrated with WIN-911, SmartSights' remote alarm notification software, to monitor and alert the team about any abnormal operating conditions. This involved a complicated process of the SCADA system calling a mobile phone; operators would then stop work, answer the call, input a unique identification number and then enter an acknowledgement. This process could take up to one minute. While this doesn't seem very long, this is critical time lost during possible emergencies. Additionally, since these alarm notifications were transmitted via cell phones, if the operator was in a part of the facility without good [cell] service, the call might break up and the entire identification input process would have to be repeated.

Upgrading Technology

In 2020 ReWa, SmartSights and MR Systems, the systems integration company with whom ReWa partners to implement technology, identified opportunities to improve the WRRF alarming systems by deploying the more streamlined, technologically advanced SmartSights mobile solution. Tony Jones, ReWa business analyst, reached out to Ed Noyes, application engineer with MR Systems. Jones worked closely with Noyes, who listened to Jones' concerns and designed a system that met ReWa's high security requirements, improved the ease and efficiency with which operators can monitor and action SCADA alarms, and deployed a pro-active monitoring system to notify ReWa technology personnel in the event of a system issue.

Eight WRRFs spread throughout the county manage efficient and reliable operations, including purifying more than 40 million gallons of water per day from homes, businesses and industries.

Photo Credit: Pictures provided by Renewable Water Resources

The WIN-911 mobile app enables more efficient plant operations by giving operators the ability to monitor and act on SCADA alarms via mobile devices with redundant voice and text callouts as needed. Additionally, it complements ReWa's mission of supporting wastewater treatment through the use of innovative solutions, promoting operational efficiency and reinforcing the core value of safety and unity.

"While we've only been using the mobile app for six months, the team has quickly adapted to working with the more efficient and robust system. They no longer waste time punching in identification codes or depending on intermittent cell service to acknowledge an alarm," commented Jones.

SmartSights WIN-911 provides the teams faster response times, which is critical since many alarms involve lost power. In these situations, every minute counts to get an alarm message to the team. This could mean the difference between restarting the generator or experiencing an overflow.
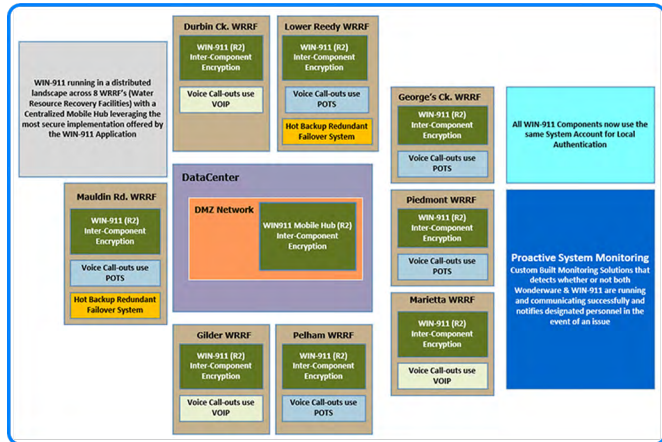
Secure Monitoring

The types of alarms that WIN-911 monitors include critical functions—pumps, UV disinfecting systems, generators and the utility power—that can stop a process and result in a sewer overflow or discharged untreated water. To ensure the systems' integrities are not compromised, it's critical to use the most secure architecture possible. To that end, Noyes and the MR Systems team implemented the highest security levels offered by SmartSights in the form of inter-component encryption in conjunction with a custom-built proactive monitoring system that detects if WIN-911 and AVEVA are communicating and notifies designated personnel of any issues. Additionally, WIN-911's integration with the SCADA system offers ReWa another layer of security.

"WIN-911 gives ReWa the confidence that they can trust the systems," Noyes said.

WIN-911 integrated with AVEVA's System Platform monitors ReWa's critical functions such as pumps, UV disinfecting systems, generators and the utility power that can stop a process and result in a sewer overflow or discharge untreated water.

CVRD's wastewater treatment plant FactoryTalk SCADA Overview, which displays the mission-critical equipment being monitored.

Source: Comox Valley Regional District

> *"This is a journey and as a forward-thinking early adopter ReWa continues to explore technology like SmartSights that allows us to improve infrastructure and operating efficiencies."*
>
> **Tony Jones**
> *ReWa Business Analyst,*
> *ReWa*

Making a Difference

This proactive and perpetual monitoring routinely averts problems. However, in the event that any of the equipment is not operating properly, SmartSights WIN-911 Pro alerts the ReWa team via mobile app, phone call, email, or text. One such instance occurred when the team received an alarm related to a power outage at one of the WRRFs.

A newly installed generator did not automatically start during a power failure and WIN-911 alerted the technology staff who then began a dialogue with the operations team via the mobile app's chat feature. Because of this early and real-time intervention, ReWa assessed the problem and determined that the generator wasn't properly wired, avoiding additional problems that an extended power loss would have caused.

"Prior to this upgrade, ReWa functioned in a reactive mode and waited until the WIN-911 software notified the operations team there was an issue. Now, we have completely changed this mindset and become more efficient. The IT team knows there is a system problem long before the operations team," added Jones.

The Future

Named a Utility of the Future by the National Association of Clean Water Agencies, ReWa is committed to enhancing the area's quality of life through the quality of their waterways. Using advanced technology like the AVEVA System Platform integrated with SmartSights remote alarm notification software and mobile app help ensure this.

"This is a journey and as a forward-think early adopter ReWa continues to explore technology like SmartSights that allows us to improve infrastructure and operating efficiencies," said Jones.

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