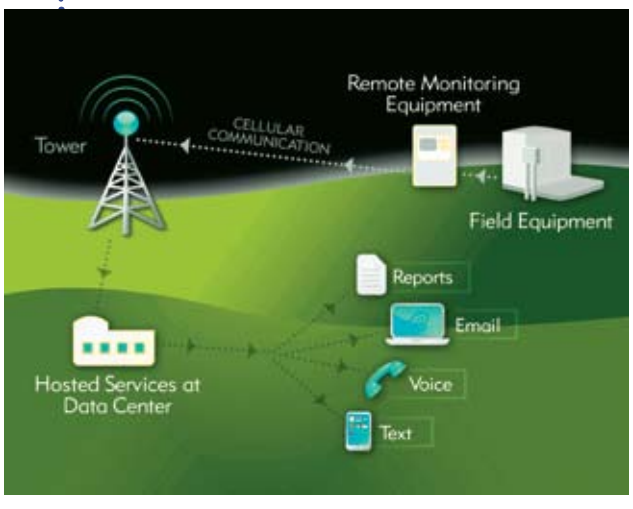
ARM LENDS A HAND

There is a wide spectrum of budget allocation and varying operational needs in municipal water utilities, but there are constants with which everyone struggles: Money is limited and efficiency is at a premium. Advanced remote monitoring (ARM) could help ease the struggles across economic and operational spectrums, whether a utility has capital budgets or not and whether it is monitoring a single asset for alarm conditions or multiple assets for diagnostic functions.

By Jason Weinberger

Modernizing operations with advanced remote monitoring

Events can be reported to the operator via text messages.



Information is transmitted from remote and unmanned equipment into a data center.

Simple Start

The town of Vincent is using ARM to alert operators of drops in pressure in its water source spring. This scenario is not unusual, as municipalities across the nation are monitoring their water assets in the field. What sets the town of Vincent apart is its foresight to modernize its water infrastructure with ARM and its ability to do so within the same budget other utilities are using for older monitoring equipment and services.

Water operators such as Kerry Bonifay of the town of Vincent continually are challenged to keep distribution pressure up, ensure chlorine stays at appropriate levels and prolong the life of pumps. "Right now, we're just monitoring pressure," Bonifay said. "But the Aquavx ARM gives us the ability to expand on the functionality as our reporting requirements extend to more complex conditions."

Simply, ARM provides alarm notification and monitoring of remote and unattended facilities. Solutions are scalable from simple tasks such as monitoring pressure in a tank, as Vincent is doing, to performing up to 90% of a SCADA system's analytical capabilities.

Worry-Free Monitoring

Aquavx offered Vincent a no-equipment-purchase option it dubbed "Worry Free" to eliminate capital costs and put the monitoring exclusively in the operational budget. Pricing is based on the number of units, with access to the data available to anyone in the organization at no additional charge. In the event of equipment failure, the hardware is replaced or repaired by the manufacturer.

"The board liked the idea of the worry-free pricing as an insurance policy to our investment in the monitoring," Bonifay said. "For about $3.75 per day, we have both hardware and service support from Aquavx, allowing me to focus on delivering water to the town—not monitoring. That makes my job easier."

Added Functionality, Added Value

While it can be cost-effective to utilize ARM for simple tasks, the technique offers significantly more functionality than an autodialer and utilizes a cellular data plan instead of a landline phone or cellular minutes. A phone line or low-cost cellular voice plan usually costs more than $30 per month, but by using a cellular data plan, information, such as a notification of low pressure or cycles per day, is transmitted from the remote and unmanned equipment at a significantly lower cost. When an event happens, the device reports it to a data center and an operator is alerted via e-mail, text message or phone call from the remote servers.

Operators can access the current status of equipment as well as historical and trending reports. ARM delivers more than the standard autodialer benefits for less than the cost of traditional communications. Notification of high wet-well alarms can prevent spills and costly fines, and aggregation of data can make it easier to perform regulatory filings and reports and aid planning for future system needs.

Traditional SCADA requires significant capital expenditures, including radio networks, polling servers, custom screen development and remote telemetry units. ARM is designed with the ability to scale up to meet the needs of small- to medium-sized utilities that may not have the desire or budget for a full-blown SCADA system, but still need to know important measurements such as pump run times, number of cycles and other critical water and wastewater well, tank and pump information.

Water utilities have a great deal of data that can and should be collected and acted upon to run at maximum efficiency, but many feel constrained by budgets. ARM helps operators meet regulations, effectively utilize man-hours, schedule and perform maintenance and—perhaps most importantly—keep the accounting books in the black.

East Richland County in South Carolina had a handful of old landline-based alarm dialers, but found itself sending personnel out to check the stations every day. The system did not provide any qualitative information about the stations to enable operators to anticipate problems or adequately troubleshoot before sending maintenance personnel to sites.

"In addition to economizing manpower, the county wanted to be able to generate various reports from their 16 stations, and wanted these reports to be customized to meet the county's unique information requirements," said Mike Osborne of AO Inc., the consulting and installing company for East Richland County.

Jack Morin, East Richland's operator, determined that the county would employ ARM to gain SCADA functionality at roughly the same monthly cost as the existing autodialer phone lines and at a fraction of the initial capital expenditure.

"The benefits we're getting from ARM at about the same monthly cost as phone line easily make up for any upfront expenditures," Morin said. "With Aquavx, we have so much more than the simple alarm dialers we were using. Now, right at our fingertips, we have information we can use to streamline our pump operations before sending someone to the site."

Value Across the Spectrum

In today's economic environment, there is greater pressure on operators and managers to do more with less. Whether water and wastewater services are being provided to populations of 10,000 or 10 million, ARM has become a tool that utilities can use to conserve man-hours; streamline operations; and extend the life of tanks, lift stations and other assets essential to running a modern water utility. WWD

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