Lower Colorado River Authority

Lower Colorado River Authority Pilots Automated Metering Program Using Cellular Connectivity - A Sierra Wireless® Water Management Solution

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CUSTOMER CRITICAL CHALLENGE

- Remote data collection of water usage from underground distribution points
- Required persistent wireless connectivity and remote monitoring capabilities for accurate measurement and billing

SOLUTION

- AirLink® gateways provided reliable cellular communications for pilot program testing cost effectiveness of remote meter reading solution

BENEFITS

- Uninterrupted connectivity for access to critical water level and usage data
- Increased productivity and safety for field staff collecting meter head readings
- Seamless integration with existing monitoring equipment
- Improved customer satisfaction through accurate billing of water usage

Business Challenge

LCRA’s wholesale water division was interested in testing the cost effectiveness of a wholly automated remote monitoring solution to read bulk water meter distributionpoints. They enlisted engineers from the agency’s hydrologic services department to develop a pilot program at two community locations in order to eliminate manual data collection.

The purpose of the meter automation project was twofold: accurate measurement of water quantities delivered to each customer and real-time monitoring of water flow toidentify potential issues before any incidents occur.

LCRA’s wholesale water customers have underground metering vaults that use mechanical registering devices to record the quantity of water delivered. To obtain theactual number of gallons of water delivered to wholesale customers, an employee must visually inspect mechanical metering devices that are inside underground utilityvaults. Manual meter reading is both time-consuming and dangerous. Employees are required to travel across a wide geographic area at regular intervals and enter theunderground metering vaults to acquire the gallons per hour readings from each meter head.

To eliminate the need for a time-intensive site visits, the LCRA has leveraged a cellulardata solution with broad enough coverage to match its water distribution network.At critical junctions in the water network, the LCRA has automated data loggers thatdynamically track water flow. The LCRA uses a rugged, intelligent cellular gateway,connected to the data logger with a serial connection, to access the data from themeters. The data is sent to a central office server, where it can be analyzed for waterflow tracking and predictive analysis to identify potential issues.

Sierra Wireless AirLink® Solution

LCRA’s cellular provider recommended upgrading to the Sierra Wireless gatewaysto advance the connectivity and remote monitoring capabilities of its pilot program.Working with Sierra Wireless provider Industrial Networking Solutions to program theirdevices, LCRA rolled-out the gateways with “no issues of any

kind”.

“The devices just flat out worked,” explained Andy Verrett, senior systems technician atLCRA.

LCRA discovered one of the biggest advantages of deploying a cellular data solutionwith intelligent AirLink gateways was that the solution didn’t require the replacementof legacy equipment; the AirLink cellular devices integrated very well with LCRA’sexisting monitoring equipment, saving the authority an enormous amount of time andinvestment for the system upgrade.

The gateway is a robust communications platform for telemetry and SCADA thatsimplifies management of remote assets. Class I Div 2 certification and embeddedmachine protocols make the gateway ideal for industrial applications, such asenergy management. Powered by ALEOS® embedded intelligence and managedby AirLink management software, the gateway enables remote configuration andtroubleshooting, virtually eliminating service calls to remote equipment, resulting in aquick ROI.

“The intelligent cellular gateways that we integrated with our data logger solutionare incredibly reliable,” said Verrett. “We have had no connectivity problems to speakof; although we experience occasional outages due to the data logger, the cellularequipment is rock solid.”

Results

LCRA has virtually eliminated field trips to its pilot meter head locations. The agencynow has the capability to remotely collect daily data from meter registers attached toundergound distribution points and monitor hundreds of thousands of gallons per unitto measure usage and verify accurate billing to its wholesale customers.

With minimal capital investment, LCRA was able to advance the remote monitoringof its infrastructure and the thousands of gallons of water per unit flowing within.In addition to providing a cost effective data collection solution, the Sierra Wirelesscellular gateways also provides the following benefits:

- **Reliable connectivity**
  – ALEOS intelligence provides “always-on” and

“alwaysaware”connectivity required for critical fixed and mobile data applications.

- **Increased productivity and safety**
  – Eliminates the time and potentially hazardous effort required for an employee to manually check a remote distribution point.

- **Quick ROI**
  – ALEOS-powered devices replete with legacy industrial protocols are seamlessly integrated with legacy data logging equipment, enabling a system overhaul without large capital investment.

- **Seamless solution integration**
  – In combination with ALEOS, AirLink managementsoftware allows for quick and easy device configuration, as well as troubleshooting of remote gateways in the field.

- **Advanced monitoring**
  – Enables intelligence at the endpoint by utilizing advanced digital protocols at both the polling site and data center.

- **Improved customer service**
  – Provides real-time data for accurate billing and water level management.