ARB® UTILITY MANAGEMENT SYSTEMS™

NEPTUNE TECHNOLOGY GROUP

CITY OF ROSENBERG

CLIENT

ROSENBERG, TEXAS

LOCATION

L-R: Linda Dominguez, Assistant Customer Service Supervisor; Janice Edmonds, Customer Service Supervisor; Sarah Lyde, Billing Clerk; Karl Zwahr, Utilities Superintendent; and John Maresh, Assistant City Manager.

Catching Up on a Lot of Reading – with ARB® FixedBase™ AMI

Trying to Walk Around an Old Problem

Located in Fort Bend County just 20 miles southwest of Houston, the City of Rosenberg, Texas is home to a population of nearly 32,000. Developed in the 1870s and 1880s as the junction point of the Santa Fe and Southern Pacific's Victoria Division railroads, Rosenberg and its surrounding Brazos River Valley attracted many from across the country with fertile land for growing cotton and fruit orchards. The city was officially incorporated in 1902, with its public utilities established a few years thereafter. As of September 2010, the water and wastewater department serves 7,076 single residential; 1,291 Industrial, Commercial, and Institutional (ICI); and 233 irrigation accounts.

For nearly a century, Rosenberg read its water meters manually. According to Assistant City Manager John Maresh, "Because of the sheer age of the meters, the accuracy was not there. There were a number of stuck meters and a number of misapplications with meter installations." Many of these misapplications involved multi-resident complexes where turbine meters were installed instead of compound meters, resulting in loss of registration at low flow rates and a corresponding loss of revenue.

It took four meter readers an average of 10 days to read 33 routes for each of two billing cycles per month. The 8,600 meters they read were an eclectic mix of aging units from various manufacturers, making meter reading accuracy an ongoing problem. On top of each cycle's initial reads were 300 re-reads requiring second and sometimes third walk-bys on site, including missed reads and/or reads that were flagged for either high or low consumption.

From an AMR Pilot to an AMI "Autopilot"

In 2006, as part of a pilot program, the utility installed 400 encoders from Neptune, including ProRead™ encoders paired with R900® RF Meter Interface Units (RF MIUs) and some integrated E-Coder)R900*i*™ units, which combine a solid-state encoder register and R900 MIU in a single register enclosure. The results from this new ARB® Mobile™ portion of the system – including increased meter reading accuracy in less time – encouraged the City of Rosenberg to "get serious with [its] meter replacement program," as Finance Director Mindi Snyder put it.

In 2007 and 2008, Maresh and Snyder began looking at other utilities and various meter reading systems. The two had worked previously for other municipalities that performed system-wide changeouts to Neptune's ARB® Utility Management Systems™. That experience, combined with the success of Rosenberg's pilot program, made Neptune the obvious choice for the entire system. "Neptune's product gave us the data we were needing," Maresh said. "We were familiar with and satisfied with the product and performance, and satisfied as well with Neptune's customer service and support." With the enthusiastic support of the city council, Maresh's team worked with Neptune Territory Manager Rex Baxter and HD Supply's Maurice Devries to develop the new project requirements.

Baxter and Devries took a consultative approach and helped Maresh and Snyder evaluate Rosenberg's needs going forward. These included the ability to monitor leakage at any given customer's home on a daily basis, and collecting highly accurate meter readings and more advanced consumption data without having to send out meter readers to get it all. Upon seeing what was now available with Neptune's ARB® FixedBase™ AMI, they were impressed. "And from the cost side of it, there was not a dramatic increase in price [compared to traditional AMR]," Snyder added.

Consumed with Accuracy

The need to better account for water – particularly for water conservation – largely drove the utility's decision to move to a full two-way AMI system. "Rosenberg has been hit by droughts the past few years and has come close to having to officially implement drought contingency plans," said Maresh. But with Neptune's ARB FixedBase AMI System and the ability of the R450™ RF MIU to provide meter readings and 24-hour interval

consumption data on a daily basis, the city will be more ready in case it does have to enforce restrictions. "Consumption monitoring is a tool we can use to see how people are using water, particularly at residential locations, for things like watering at night," Maresh added. With a system in place to keep an eye on possible offenders, he expects a decrease in overall consumption.

Meter reader David Ramirez.

Improving accountability is also key in Rosenberg's preparations for 2015, when Fort Bend County will enact new regulations requiring a 30-percent reduction in groundwater usage. This change will require a joint effort between Rosenberg and neighboring Richmond to purchase and deliver treated surface water to two large sets of customers, thereby increasing the importance of reducing Non-Revenue Water within its system and accounting for every single drop. "With the advanced reporting [capabilities of ARB FixedBase AMI], we'll be watching more closely for unaccounted-for water," said Maresh. "And by the time the regulations kick in, customers will be better accustomed to monitoring their own consumption."

The opportunity to implement a new AMI system served as the catalyst for an upgrade of Rosenberg's HVAC, wastewater, and lighting systems as well. According to Snyder, the city secured most of the funding for these overhauls through the State Energy Conservation Office (SECO). Siemens – confident that the new AMI system's resulting increase in revenue and savings in personnel, transportation, and fuel will pay back its investment – is covering the debt service payments with a performance contract.

ARB FixedBase AMI Takes the Field

With funding in place, Maresh and Snyder tapped U.S. Bronco to install the remaining Neptune meters needed as well as the R450™ RF MIUs and R450™ Data Collectors (DC). When the installation began in November 2009, Maresh was pleased with how simple it was to switch out registers on the same 400 Neptune meters from the pilot study. As more of the infrastructure was replaced with Neptune components, he began seeing improvements in efficiency.

The rest of the implementation continued smoothly and installation was complete by August 2010, with the bulk of the changeout completed by May. Four R450 DCs were installed on elevated water towers, all that are needed to collect reads for the entire meter population. Now, instead of meter readers spending weeks collecting meter reads and re-reads, the ARB FixedBase AMI System provides meter readings and 24-hour interval consumption data on a daily basis. ARB FixedBase AMI has eliminated the concern of having enough personnel available to read meters so that billing could stay on schedule.

Snyder is impressed with Rosenberg's new leak detection capabilities. "My office is right behind the customer service area, and I hear them on a regular basis using leak information to tell customers, 'Yes, you do have a leak.' And our guys in the field can take them to the meter and show them, 'Here's where we're detecting a leak.'"

Utility Supervisor Steve Vavrecka, one of those guys in the field, testifies to this, "We can prove the existence of very small leaks – even from a toilet – that customers might have a hard time pinpointing. [ARB FixedBase AMI] measures every drop."

Sharing the News with Customers

The city has taken a proactive approach to customer service, beginning with its efforts to educate the public about the changeout to new meter reading and billing technology. Snyder worked with the media relations department to put notices on bills, articles in the newspaper, and door hangers at residents' homes explaining the who, what, when, and where of the installation and the new system. After these efforts, and now that billing cycles have begun, "people know their meters are more accurate and, as a result, they have to be more accountable," said Maresh. And thanks to reports generated in ARB® N_SIGHT™ AMI software, smaller leaks are caught sooner so customers can repair them before incurring higher water bills.

With his new Neptune AMI System fully in place, Maresh is already looking forward to implementing acoustic leak detection on distribution mains and using District Metered Area (DMA) analysis to compare pumped-versus-billed water: "The System's ability to expand was a huge selling point." In the meantime, he's enjoying the difference it's making. "We're seeing improved overall reliability, accuracy, and dependability in getting meter readings," he said.

Snyder is thrilled with the effect that more accurate data is having on the utility's conservation efforts, "It's helped heighten overall awareness on both our side and the user side as to where we're going in terms of water being a precious commodity." She summed it up, saying, "It's the answer to the question we always ask – 'How do we do things better and more efficiently?'"

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