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NEPTUNE TECHNOLOGY GROUP

TRUSSVILLE UTILITIES
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LOCATION

The beginning of an endpoint: how Trussville helped design the R900®G, and how the R900G continues to return the favor

Igniting the Pilot for a New Gas Endpoint

In 2006, the Trussville Utilities Board was investigating better options for reading its roughly 11,000 water meters and 22,000 gas meters. The six-person crew of full-time meter readers (along with a seventh to perform rereads as needed) was struggling to keep up with a five-days-a-week pace collecting data and inputting it manually. Chief Financial Officer Mike Strength wanted to increase efficiencies using automatic meter reading (AMR) – but only if he could have a system that worked with both the water side and the gas side of his operations.

Because an AMR conversion would touch every endpoint and because of the volume of work orders involved, Strength waited until the time and the system were right. Having researched other combination utilities' changeouts, he was "startled how many people make decisions without thoroughly investigating the details." However, in his travels he saw that some utilities were using Neptune's field-tested R900® radio frequency technology. These systems were providing the kinds of time- and labor-saving benefits he wanted for his own utility, but Neptune didn't have a product for the gas market. Yet.

In 2006, after seeing some other manufacturers' products come up short, Trussville Utilities brought its "wish list" for an AMR gas endpoint to Neptune, which then developed the product to those specifications. Dubbed the R900®G, the endpoint was readied for a small pilot program. During an eight-month beta test, "the R900G performed flawlessly," Strength said. "It was better than we even expected, with superior reading range, and not a single exception or failure during the beta test."

The Right Combination – Gas, Water, and Neptune

"Neptune already had a richly robust, field-tested water endpoint, and now they had a gas endpoint to go along with it," added Strength. Because of unrelated internal issues, it took a while to begin installation; but Trussville Utilities implemented a "soft start" two years ago in August 2009, with completion in March of the next year. According to Strength, the changeout of entire populations of both water and gas endpoints was a massive project fraught with challenges: "We chose to put in meter setters with backflow preventers. We had to reset or replace meter boxes to make things fit. Despite advance notices, we had problems with customer compliance regarding thermal expansion tanks on their systems. But Neptune gave us great support through it all."

Strength credits Neptune Territory Manager Kevin Smith as "instrumental" to the effort, offering "exceptional support," and being on-hand to make sure things were running smoothly. Another key player was Neptune's Chuck Brunson. "Chuck made sure we had all the correct conversion factors programmed in so that our [R900G] endpoints readings would be accurate. He put forth a lot of effort to ensure that the manual reading on the index would continue to match the reading via the radio on the endpoint as usage progressed." As part of the R900G "new product" pilot effort, several Neptune engineers made the trek from Tallassee to Trussville to see that installation proceeded as projected.

Along with the R900G endpoints for the gas meters, Trussville Utilities implemented Neptune's easy-to-install combination absolute encoder/RF MIU, the E-Coder)R900*i*™, on all its water meters. For installation programming, the team used CE5320 handhelds; and for data collection of the entire meter population, it now uses two MRX920™ Mobile Data Collectors – one of which is the newly designed model weighing in at close to five pounds. Strength said, "[The new MRX920] makes a difference; the smaller unit is a lot easier to transport, and even more user-friendly."

With R900, the "R" also stands for "Results"

Since the conversion, Strength has been pleased that "the results have matched what we expected." The board has significantly reduced rereads and has also seen a reduction in meter reading personnel. Two meter readers have retired and others are now reading occasionally but spending more time performing other tasks, including atmospheric corrosion inspections, recoating of meter risers, and quality checks on the system as a whole. According to Strength, he's making progress toward reducing the permanent meter reading operation to one employee, working just four or five days a month – about a 96 percent reduction in labor.

The combination utility has also realized benefits to its customer service. "The biggest [customer service] value with our water meters has been 96 days of hourly data logging," Strength said. "It's allowed us to prove to customers that their bills are right, and we can even show them graphs of when their usage was highest. This kind of data logging moves customer service from a defensive position of justifying a bill to the role of solution provider in helping a customer solve an issue."

For example, Trussville Utilities has been able to find and address hidden problems due to leaks using the E-Coder)R900*i* – as when it helped a gas station by identifying a leak that occurred with its landscaping irrigation system.

In addition to saving time and labor, the R900G has greatly reduced instances of tampering or theft of its natural gas services, particularly because of its no-external-wire design. And, it's plenty durable according to Strength. "There was a residential house fire that melted one of the gas meter endpoints, but we were still able to get a final read from the R900G," Strength said.

Making it all Seamless

By directly involving customer input in the design stage, Neptune helped ensure a product that would meet the specific needs of gas utilities. And, by designing the R900G endpoint with the same field-tested R900 RF technology that drives its water AMR systems, Neptune helped make reading and billing for combination utilities such as Trussville's simple.

Strength advises utilities looking to enhance their meter reading and billing to bring Neptune in early: "From the start, we involved Neptune heavily in our project planning, and they made everything run a lot more smoothly. Water and gas installations each have their own issues, but with Neptune they can be read seamlessly. For all we had to do, and to overcome, to have a complete water-and-gas conversion within a year was huge."

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