

OPTIMIZING ELECTRICITY & WATER METERING AT MUNICIPAL UTILITY

CASE STUDY

“Tantalus and Badger work well together. They strive for perfection which is the ultimate goal for all of us...The ability of TUNet to transmit and deliver data from ORION water meters via a single communications network gives us a ‘two birds with one stone’ advantage..” - Lee Baker, General Manager (Retired)



CHALLENGE

Newport is a community-owned utility in eastern Tennessee that distributes electricity and water to 20,000 accounts. Like many utilities, Newport faced rising customer expectations, mounting operating costs from its distributed activities and increasingly complex market conditions while dealing with a shrinking workforce. Although it had automated or outsourced several functions including meter reading, in 2005 Newport began to investigate turnkey AMI technologies. Newport’s goals were to contain costs, streamline data collection, maintain a high level of service and implement a system built for future applications including web presentation of customer interval data.

SOLUTION

Newport determined that TUNet® was best fit for the challenge because of its support for multiple commodities, reliability, quick response time and ability to interface with other applications. It liked the idea of prioritizing deployment to specific accounts – primarily customers who receive both water and electricity, and those in remote locations – in order to quickly recoup costs. Before making its choice, Newport also consulted with neighboring utilities which used TUNet in order to determine whether a wireless system was suitable in a rugged, Great Smoky Mountain environment.

RESULTS

At Newport, TUNet serves as the two-way backbone network on which all water and electric metering data is communicated. Antennas placed on two mountain-top radio towers provide WAN coverage throughout 95% of the utility’s service area, which includes both urban and rural regions. Radio frequency boosters backfill the rest of the territory. This combination provides a robust backbone network that is easily deployed and inexpensively operated. The 900 MHz TUNet LAN pulls its weight in this tough environment. In one example, meter modules communicate across a valley over a distance of nearly four miles.

Although the AMI system uses a common network, there are different applications and operating requirements unique to each commodity. Newport set reporting intervals so that electric meters send readings and PQM measurements every hour, whereas water meters report consumption once a day. It also uses TUNet to monitor and control infrastructure devices and, as a result, is able to detect and often correct problems with reclosers or regulators before they impact customers and power delivery.

Newport reports that the handshake between Badger ORION meters and TUNet modules is firm even in extreme conditions such as when a water meter is covered with mud, fallen leaves or even a vehicle. Newport chose to install new GE I-210 solid state meters factory equipped with TUNet modules for its electric meters which offer the reporting accuracy required for upcoming utility projects.

AMI is the spearhead for Newport’s modernization program. It can now use the data in a variety of backend and customer-facing applications. TUNet’s simple yet effective application interface makes it easy for Newport to integrate data in its outage management, CIS, and MultiSpeak compliant billing application. It is also looking at web presentation and load control programs to get customers actively engaged in conservation. Newport reports that the monthly cost for readings is now only pennies per meter. Since fewer phone lines are needed, it expects to save thousands of dollars over time. In just over one year it saved 45-staff days in labor resulting from automated meter reading and reduced site visits.

It’s also simple things such as error-free meter readings, no delays in move in & outs, and the ability to know about an outage before phones start to ring which have bolstered customer confidence in Newport and the way it conducts business and serves the community.

NEWPORT BRIEF

- Newport, Tennessee
- Community-owned electric & water utility
- 20,000 customers
- 20,000 electric / 10,000 electric & water
- Combination urban & rural account base

ADVANTAGES

- Single communications network for multi-commodity AMI
- Accelerated Return on Investment by eliminating outsourced meter reading and other automated functions
- Vast radio coverage in challenging service area enables Newport to target high-cost / high return accounts first
- Easy and economical expansion of TUNet to support additional endpoints and the potential to automate water & gas metering
- Compliant with TOU Energy Policy Act directives; interface with new MultiSpeak compliant-billing and CIS applications
- Supports Demand Response applications including load control, alternative energy, and online customer energy profiles
- Achieves cost and operational savings through a variety of means:
 - eliminate meter re-reads / automate read-in & -out procedures
 - locate line losses and meter inaccuracies
 - improve outage detection and speed service restoration
 - easy installation and support for meters from multiple manufacturers