

COMMERCIAL & RESIDENTIAL SURGICAL DEPLOYMENT

CASE STUDY

“With Tantalus, we can introduce advanced functionality when and where it makes sense, and gain maximum benefits from these investments with minimal effort and infrastructure build up.” James Eitsert, Engineering Supervisor



CHALLENGE

Within Northeastern REMC’s service area are specific customers for which smart metering offered the greatest immediate benefit. Dispersed throughout the 765 square mile territory are C&I clusters where real-time usage and power quality monitoring would prove valuable for the customer as well as the utility, remote farms where meter reading is costly, and high turnover locations that regularly require off-cycle reads. To target these members using PLC would require the build out of numerous substations and a significant investment in infrastructure and time. Surgical smart meter deployment would allow it to set its own priorities; to implement advanced functionality at specific sites immediately and provide the bandwidth and flexibility to support additional services and an eventual full roll out. Although other utilities operating in challenging terrain selected TUNet as its AMI network, Northeastern wanted to validate a number of specific benefits as part of its business case for a multi-application deployment.

SOLUTION

TUNet® provides two-way, real-time communications throughout Northeastern’s service territory. The wireless system combines a long-range, cost-effective 220 MHz WAN with a 900 MHz LAN that coordinates communication within clusters of endpoints. The hybrid network enabled Northeastern to strategically deploy TUNet devices at locations such as remote farms and communities where the cost of field service is comparatively high, then evolve step-by-step to a full deployment.

RESULTS

The first phase rollout called for TUNet meters to be placed at extremes within the service area. Northeastern’s objective was to determine the extent of the coverage and whether wireless worked over long distances and to sparsely populated areas. The Tantalus system provides excellent visibility to the most remote endpoints. Rather than making incremental steps out to the edges of its service area before implementing advanced metering, Northeastern gains blanket coverage and the freedom to deploy advanced applications where and when they are needed most. TUNet helps the coop to continue to deliver superior service and operational excellence. The long-term value is that the communications is in place so that minimal infrastructure is needed to support follow-on applications or additional endpoints to accommodate both single- and polyphase metering, as well as load control.

As the first step toward full deployment, Northeastern targeted high consumption commercial and industrial accounts such as large retail outlets, manufacturing facilities, and schools. This enabled the utility to enhance customer service to C&I users, provide more rapid support during critical periods, eliminate the cost of manual meter reads and gain the detailed data to support the complex dynamic rate structures. Real-time, online monitoring of voltage and power quality can be used to detect malfunctioning equipment, which helps ensure “always on” energy availability. By fast tracking C&I, Northeastern was able to give high demand members the information they need to optimize energy management and contain costs immediately.

NORTHEASTERN BRIEF

- Columbia City, Indiana
- 26,000 members; fully deployed
- 765 square mile service territory
- 19 substations
- Urban core with many remote communities, farms, and commercial zones

ADVANTAGES

- Multi-purpose network supports:
 - interval & on-demand reads
 - power quality monitoring
 - instant outage detection
 - remote disconnect / reconnect
- Full deployment; territory-wide wireless coverage achieved with only two RF base stations; minimal infrastructure required
- First phase deployment targeted C&I customers in order to capture benefits and ROI early
- Gained up-to-the-minute usage data for highly accurate billing based on the complex dynamic pricing rate structures
- Ability to detect malfunctioning equipment
 - Sufficient bandwidth and system flexibility to support follow-on applications including load control, smart thermostats and other Demand Response programs
- Integration with NISC MDM
- EnergyBiz KITE Award 2008 for Technology Innovation; for spearheading strategic AMI initiatives that have met business results such as higher efficiency, greater production and profitability.