CITY OF SHASTA LAKE

Tantalus

MUNICIPAL UTILITY AIMS HIGH WITH MULTI-COMMODITY AMI

CASE STUDY

"This represents a radical change in the way utilities can manage their business. Customers can use the information to reduce their power consumption and bills. Plus, it constantly monitors for power outages and water leaks, and instantly alerts staff if there's a problem."

CHALLENGE

The same business requirements and regulatory mandates that drive large utilities to invest in AMI also apply to smaller utilities. The City of Shasta Lake is no exception. Although this northern California electric and water utility serves less than 5000 customers, it is caught up in the brisk pace of change that requires California utilities to prepare for Time of Use (TOU) pricing, adapt to supply constraints, and have a network that supports the kinds of interactive consumer energy management applications proposed in a state-wide mandate aimed at conserving energy.

SOLUTION

The range and robustness of the TUNet® 220 MHz WAN gives territory wide coverage in a mountainous, thickly forested region. This creates a rapid and reliable two-way data communications network that enables Shasta Lake to collect interval meter readings (hourly electric / daily water). TUNet also allows the utility to query any electric meter on the system instantly, which is particularly useful when investigating power quality issues or performing off-cycle reads. The wireless network provides Shasta Lake with a Smart Grid ready network that requires less infrastructure and incurs much lower on-going maintenance costs than technologies that use a public backhaul network. Additionally, because the City's poles were already congested, a solution that did not require extensive pole-mounted equipment was an important consideration. With the addition of leak detection capabilities offered with the joint Tantalus/Badger Orion water AMI solution, Shasta Lake has been able to offer proactive notifications to customers, and noticeably raise the level of customer satisfaction.

RESULTS

Size did not hold back Shasta from becoming a leading light in California's Smart Grid evolution. TUNet provides the utility with an AMI network that supports the functional criteria outlined in SB 1438, the proposed legislation which aims to improve the way energy is distributed, managed and consumed in California. At its core, TUNet enhances distribution system operating efficiency and improves service reliability, by automating the meter reading process, instantly alerting staff if there is an outage or service disruption, enabling the utility to quickly identify water leaks or suspected energy diversions, and providing the data needed for accurate forecasting and better workforce management. For example, operations staff are notified by a text message in the event of an outage or power quality alert. Rapid dissemination of information helps Shasta Lake quickly assess the extent of a problem - whether an isolated event or unfolding situation - and determine the best course of action.

Automating routine processes such as meter reading and bill preparation, combined with the ability to remotely investigate (and often rectify) field issues is a boon to a utility that numbers just seven full-time staff. TUNet is an end-to-end solution that closes the loop between the utility and its customers, a primary goals of the California mandate. Hourly data collected via TUNet can be incorporated into either online of hard copy billing statements to give customers a better understanding of their usage patterns, and help them make informed decisions on when and how they use energy.

Deployment ease and flexibility enables Shasta Lake to effectively manage growth as the community expands. The Tantalus network meets Shasta Lake's current AMI requirements and has the flexibility to support a wide range of energy efficiency programs such as load control. This will enable to selectively shed loads on customer appliances such as HVAC devices for short periods of time if faced with system shortages or equipment failure.

SHASTA LAKE BRIEF

- Shasta Lake, California
- 4,400 electric customers
- 3,600 water customers
- 7 square mile service area (18 sq. km)
- Hilly in-city terrain with thick vegetation

ADVANTAGES

- Easy, fast deployment of TUNet (electric) & Badger ORION (water) meters
- Simple integration with existing CIS, SCADA and planning & engineering applications
- Single tower provides 100% radio coverage and extends into adjacent utility
- Cost savings via in-house deployment: all meter change-outs done by utility staff, including retrofits of C&I electric meters
- Immediate savings by automating service to hard-to-read / high-turnover locations and delinquent accounts
- Support for remote disconnect / reconnect
- Ability to add advanced applications including DR, load control and TOU pricing in accordance with Smart Grid trends
- Freedom to rapidly scale AMI system and capacity to accommodate population growth