

Backcountry, not backward: AMI gains popularity with co-ops

By Betsy Loeff, contributing writer

It's almost as though the proverbial light bulb has switched on, says Rob Lauridsen-Hoegh, spokesman for Tantalus Systems, a provider of advanced metering infrastructure (AMI). "Cooperative utility people are definitely seeing the value of AMI data. They know these data deliver more than just a meter reading."

He's not the only AMI supplier who says so.

After spending four days in March talking to co-op engineers at the TechAdvantage conference in Las Vegas, several AMI vendors felt co-ops were taking a closer look at advanced metering applications.

For instance, Mark Day is a spokesman for Distribution Control Systems Inc., maker of the TWACS by DCSI power-line AMI systems. From what he heard on the show floor, he thinks demand response and in-home displays that support these programs are likely to be big draws. So is distribution automation. Lauridsen-Hoegh agrees, calling such automation the blockbuster to come.

Rural winners

Today, outage restoration is one of the more popular AMI benefits among co-ops. AMI systems let engineers quickly see where outages have occurred and whether crews have restored power to everyone in the area.

That's a significant plus for rural utilities. According to the National Rural Electric Cooperative Association, co-ops average seven customers per mile compared to 35 for investor-owned utilities and 47 for municipal power companies. Although co-op utilities serve only 12 percent of U.S. electricity customers, they run 43 percent of the nation's power lines, which means there is a lot of windshield time involved in verifying service restorations.

Managers at Rappahannock Electric Cooperative in Virginia have gone on record crediting AMI with shaving two days off the power restoration process after Hurricane Isabel hit in 2003. Using a TWACS system, This co-op's restoration team was able to query the meters to verify that the lights were back on. That saved crews from driving routes to visually inspect affected areas.

Remote connection and disconnection wins thumbs up from Greg Williams, director of engineering and

operations for Appalachian Electric Cooperative in eastern Tennessee. On a few accounts, his utility invested in remote disconnection devices that are optional with the utility's Tantalus AMI system. Again, payoff for this investment is a factor of drive time. A truck roll can easily cost this co-op \$100. "Now, you can sit in your office, hit a key on your keyboard, and the customer is disconnected. It saves you a trip," Williams says.

Considering that one no-pay event can generate at least two site visits -- one for disconnection of service and one for reconnection -- such technology could pay for itself the first time a distant customer fails to pay the power bill.

Then, there's the politics of service disconnection. In small communities, technicians may wind up cutting the lights for friends and family, a job many would rather not do. That was one of the problems faced by Alaska Village Electric Cooperative. Elster Electricity's radio-frequency AMI solution helped solve it.

Questions of quality

Power quality issues are another reason utilities are eyeing AMI. Williams wants to use his AMI system to look at end-of-feeder-line voltages to see where he might be falling short on power-quality standards and may need more voltage-regulation equipment. Then, controlling capacitor banks might be a next step, he says. His AMI vendor is looking for a way to facilitate this.

Engineering analysis is another use for AMI data. For instance, utilities can check loads on individual transformers, thereby catching the waste of oversized equipment and the risk of overworked devices. Or, engineers can track blink counts, which might signal the need for tree trimming.

Williams says that his utility didn't just look for an AMI system. "We wanted a communication tool" to reach beyond the utility's SCADA system.

As he points out, SCADA solutions come with added costs, such as higher radio expense, remote terminal units and intelligent electronic devices that allow utilities to control equipment out on the system. He hopes to use his AMI system as a communications conduit that ups automation without SCADA's price tag.

Williams also thinks AMI systems have enjoyed enough technological advances in recent years to cost-effectively tap the system for engineering and operational uses. That makes AMI more attractive to cooperatives today, he says.

"It's hard to validate an AMI business case if all you're doing is replacing meter readers," he adds. "You have to look beyond meter reading to justify the initial investment."

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