

READING METERS EFFICIENTLY, ACCURATELY

By Kelly Prentice

When American Electric Power (AEP) made the switch to automated meter reading (AMR) in 2004, its team noticed the benefits right away.

“The more we could use a mobile van and reduce sending someone to a site, the more we saved on operations and maintenance over time,” says Jack Carr, AEP manager of meter revenue engineering.

By using mobile devices to retrieve wireless radio frequency signals from each meter, AEP technicians could also measure peak demand in a more timely way.

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However, as AMR modules were installed on the meters, electric utilities realized one problem: The majority of electricity AMR systems in the United States use one-way communication technology. Though a technician could remotely retrieve billing data from the meter, he or she could not remotely reset the meter in order to determine the next peak demand. Despite the benefits of AMR, technicians still had to go to each meter to manually press the “demand reset” button.

To solve the problem, other utilities implemented a calendar on the meter, which was programmed with the billing cycle to reset on a specific date. But this type of “cycle-sensitive” meter missed the mark for AEP.

“To manage a calendar is quite messy for utilities, especially because we often change billing cycles,” Carr says.

So, AEP’s team turned to GE — one of their major meter suppliers — to help them develop a “cycle insensitive” demand meter solution. “We needed a one-way AMR demand solution that was not dependent on the calendar,” Carr says.

Using a proprietary algorithm, GE created a new way to obtain peak

demand information from the AMR modules that displays proper demand values each month, regardless of the billing cycle. Its “cycle insensitive” meter solution calculates demand at the end of each day. The module continues to record 35 daily demands, each day dropping the oldest and adding the most recent data.

“This allows you to put a calendar in the meter that doesn’t reset on a specific date,” Carr says. “It gives us more flexibility in the way our meters calculate demand values.”

MORE PEAKS PER CYCLE

The solution also provides the ability to capture more than one peak demand value from each meter. The first peak is set to about 21 business days, the average number of business days between cycle

reads. The second peak is typically 18 or 19 business days — used when the billing period is shortened, either because the meter was read late last month or early the current month.

AEP has adapted billing and IT systems in preparation for implementing the metering solution. As AEP integrates it with its existing AMR modules, Carr will evaluate the cost-benefit of retrieving this additional data from the meters. He says it should help AEP keep track of momentary outages, along with eliminating misreads and estimated bills.

“Because metering is the cash register of the company,” Carr says, “we want to make certain we measure it correctly and avoid estimating a bill. This helps us maintain a high level of customer satisfaction.”

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