

Co-op begins rolling out advanced metering system

By Jeff Fetzer

IF YOU were receiving electric service from Claverack 15-20 years ago, you probably remember the monthly chore of walking out to your electric meter, jotting down the meter reading on your payment stub and sending it back to the co-op so you could be properly billed for your electric use.

While reading the meter wasn't difficult to do, it could be inconvenient during the winter months, as well as for the elderly, seasonal accounts and members who were away from their homes for extended periods of time. To free members of this monthly task, the co-op began a pilot project in 2002 to replace some of the traditional electro-mechanical meters on the system with digital smart meters that automatically reported a meter reading back to the office via the power lines.

The reporting process with the Hunt Technologies Turtle meters was very slow; it took about 27 hours for a reading to reach the office, and those early meters could only communicate to the office in one direction. But they worked as intended, and within a few years, the co-op initiated a multi-year project to convert its entire system to automatic meters. Along the way, there were advances in metering technology that permitted two-way communications between the meter and the cooperative, as well as slightly faster retrieval of data from the meters.

"Automatic-meter reading technology was transformative for the cooperative," says Claverack's director of engineering, Steve Allabaugh. "It allowed us to move away from a self-read system, which was never especially popular with our membership. But there was a trade-off: When you're dealing with digital technology, whether it's your computer, your cellphone, or your electric meter, new and better technology emerges that makes the old technology obsolete."

Claverack's metering system is reaching that point. Components for the first- and second-generation power-line



GETTING READY: Claverack electronic technician Larry Beebe prepares networking equipment for installation as part of the co-op's advanced metering infrastructure (AMI) project that began in October. The cooperative plans to replace all of the existing meters on its system over the next two years as part of the AMI project. The new wireless metering system will offer real-time meter-reading and outage-reporting capabilities.

carrier meters and related substation equipment are no longer readily available, and the meters Claverack deployed 10 to 20 years ago are no longer being manufactured.

"Knowing that our system was reaching end of life, we began the planning phase for a new AMI (advanced metering infrastructure) system, which we will be deploying over the next two years," says Allabaugh.

The wireless AMI system, manufactured by Eaton, will have vastly superior communications capabilities than the current system, Allabaugh says.

"The communication to and from the meter will be much faster," he says, noting the system communicates through a "mesh network" that integrates all of the meters on the system via radio communications, cellular, DSL and, potentially, fiber optic internet. "We will be able to get information from the meter in a matter of minutes.

It will also provide real-time outage information that we'll be able to integrate directly into our outage management system. This will be particularly helpful during storms, since we will be able to quickly identify areas where outages are occurring."

With the new meter system in place, members who utilize the Smart Hub application will be able to view their meter readings on an hourly basis. This will help members get a better understanding of and better manage their electric use. Having access to hourly readings is especially helpful when diagnosing causes of an unexpected spike in energy consumption.

Another benefit of the new metering system, Allabaugh says, is that it gives the cooperative the ability to de-energize power to any meter remotely.

"So if a landlord is renting a home to someone who is moving out, we can shut the meter off from the office and then turn it back on for a new tenant without ever rolling a truck and two-man crew out to the property," Allabaugh explains. "It's safer, less expensive and can be handled in real time."

The cooperative began the first phase of its AMI rollout in October, when co-op crews started installing communications equipment known as "gateways" in southeastern Bradford County.

After the communications equipment has been installed, Claverack will begin deploying some 1,500 of the new smart meters to homes and businesses served by the Monroeton, Leroy and Plank Road substations. The initial meter deployment is expected to take place beginning in January or February of 2021.

"Once we gain experience with the mesh and get the new system integrated with our billing system, we will begin mass deployment of the AMI communications equipment and meters across our entire service area," Allabaugh says.

He says the co-op plans to have its entire 19,000-meter system converted to the new Eaton AMI infrastructure by the end of 2022. 🌞