LIVING IN A DIGITAL AGE—The Meter Upgrade Project

By Kevin P. Owens, PE, General Manager

Most define the digital age as beginning in the 1970s with the mass production of the personal computer. However, technologically speaking, the first widely used digital product was the telegraph. If that doesn’t put things into perspective regarding digital products, I am not sure what will. It is amazing to think of our day without digital technology—computers, TVs, clocks, phones, books, and music—and yes, even electric meters.

Our Meter Upgrade Project which began last year continues to progress daily. To bring all member-owners up to speed, here’s an overview of the project from launch to now:

- The meter upgrade project was approved in both the 2018 and 2019 capital budgets. Roughly 50% of the costs of the project are assigned to each year.
- BEC signed a contract with Anixter Power Systems in the spring of 2018 to supply the equipment (hardware) and software components of the project. This includes equipment for our 10 substations, 6,500 meters and the supporting meter software. Our line crews began installing the necessary substation equipment last summer, and have completed the necessary meter upgrade equipment in five substations; Belfry, Absarokee, Reed Point, Edgar/Fromberg, and Luther, which were planned and scheduled for 2018. The remaining five substations, Red Lodge, Roberts, Columbus, East Rosebud and Nye will be implemented this year.

In early September, a major milestone was passed when we began setting meters on the Absarokee substation to start commissioning the system. These systems all sound good and look good on paper, but do they actually work? We experienced a true Alexander Graham Bell moment, "Mr. Watson—Come here—I want to see you," when BEC Meter Technician Jim Avent plugged the first meter in. We waited for confirmation it was communicating back to the server in Red Lodge. Recognizing that our communication channel was a little more complex than Mr. Bell’s, when we plugged in that first meter it began communicating energy use via power line carrier (PLC) technology through our physical power lines to the substation equipment. Once the signal reached the Absarokee substation, the encrypted meter data was sent via a virtual private network (VPN) cellular signal to maintain the highest level of security and privacy to the main server in Red Lodge. Tic, tic, tic...after several painful seconds, we had confirmation. The lights on the server lit up showing connectivity. High fives all around (virtually as well). This was quite an accomplishment with the many data ‘handshakes’ required to get from point A to point B through several firewalls. Success!

Today, I am happy to announce the Belfry substation (serving Clark, Wyoming up through Bridger, Montana) and the 770 meters served by the substation are 100% operational. The Absarokee substation is Continued on page 5.
THE TOP FOUR DIGITAL METER QUESTIONS

1. WHY ARE WE CHANGING TO THE DIGITAL METERS?

Our existing analog meter technology is obsolete—parts were discontinued in 2014, and support will not be available in the near future.

2. WHAT'S THE DIFFERENCE BETWEEN THE NEW METERS AND THE OLD METERS?

The new meters work exactly the same as the existing meters, utilizing the co-op's existing wires with PLC technology, as has been the case since 1995. Beartooth Electric will continue to record your energy use with kilowatt-hours (kWh) and add a new piece of information, your highest demand (KW) put on BEC's system during the billing period. The new meters will continue to display the meter reading, but it will be in a rolling digital LED format. Neither the new meter nor its predecessor gathers information regarding energy usage by appliances within homes.

3. HOW DOES MY NEW METER WORK?

With these new meters, Beartooth Electric can read the meter remotely from the office as we have been doing since 1995. Information from the meter is securely transmitted back to the co-op through the power lines exactly like the current system. The new meter is just faster and provides more energy information to help member-owners manage their use even better than the old meter.

4. WHAT INFORMATION DOES THE NEW METER RECORD?

The new meter records kWh reading, date and time of energy usage, overall peak demand of the electric account and number of times the meter has experienced a loss of power for any reason. The meter also will record the date and time of power blinks and length of a power outage—important information for us to serve you better.
Continued from page 3.

near complete with 700 meters upgraded and by the time you read we should have reached 100% complete. While we work to complete the Absarokee meter installations, we are simultaneously beginning installations for the Luther, Edgar/Fromberg, and Reed Point substations.

As of today, we stand at 22% of our system installed. We feel confident in our established timelines as all required equipment is on order (procuring equipment can have extended lead times) and our warehouse continues to supply linemen for daily meter installs. The sub-zero weather has been less than cooperative which set installs back several weeks, but that will be easily caught up once the temperatures rise.

You may be wondering what happens at your location when we perform a meter upgrade—it is a very simple and fast process. A BEC lineman will knock on your door to announce the BEC crew’s arrival. If you are not available a door hanger will be left at your door announcing your meter has been upgraded. If you are at home, know that your power will only be interrupted for a few minutes. Please note, your digital equipment (you’ll undoubtedly know by a flashing clock) will need to be reset.

I’ve shared a lot about the logistics of the project, but there is so much more including—increased operations efficiency, enhanced system reliability, and the additional electric usage data that will be available to member-owners is staggering. This data is obtainable in

Smarthub—our online and app energy management tool.

If you have not yet signed up for SmartHub just take a look below at the information available at your fingertips. SmartHub is not only an online account management system; it is also a sophisticated energy management tool with key features such as:

1. Analyze and understand usage trends to find ways to cut back.
2. Create and track a monthly budget to avoid unexpected high utility bills.
3. Set a point or range in time to compare differences in usage, and much more.

Smarthub is available as an online application on our website (www.beartoothelectric.com—click on Access My Account at the top of the home page or click the Bill Pay icon) and also as an app for Android and iOS devices. Just visit your app store to download this FREE NISC Smarthub app.

As digital as our world is today—we continue to offer both emailed and mailed monthly billing statements. The statement is a great tool to communicate how much electric you used and how much you owe—the basics.

We wondered why aren’t we making this treasure trove of data available to our members through SmartHub and bill presentment? We think our members deserve a little more value for their investment and this is why we’re moving to this cutting-edge format. You’ll be hearing a lot more about the new billing statement when the launch gets a little closer.

Until then, if you have questions, I am always available by email at kevin@beartoothelectric.com or by phone 406-446-2310.
What’s up for 2019?
Getting Informed and Making Decisions

By Arleen Boyd, Trustee District 5

The BEC Board and its risk management committee have a lot of work in progress to support examination of major issues including rate design, equity management planning, and conservation opportunities for members. We have identified information resources, and we continue to use our financial forecast model to analyze what-if scenarios and calculate the risks and benefits of potential decisions.

No amount of research will get this work done without insight from members. We are looking at how we bill members, how we allocate and pay members’ capital credits, and how we might help members manage their energy use with conservation measures and new metering technology. Plan to join meetings and provide input.

Rates. The 2019 budget and five-year forecast show that BEC revenue requirements can be met without increasing member rates. We are updating the BEC 2016 cost of service analysis (COSA) that examines the rates we apply to each of our member classes (residential, large and small commercial, irrigation and industrial). Call or email the co-op or trustees with questions or comments.

Rate Design. We know the cost of serving each class of BEC members. We began in mid-2018 to look at various approaches to rate design with an expert’s presentation that summarized our practices and outlined emerging rate design alternatives for covering the costs of securing power and delivering it to consumers safely and efficiently. That launched a year to raise questions and gather information while the co-op installs advanced meters that provide detail about our power requirements. Is our current rate and billing structure the best choice? Can we assign costs and bill members more fairly and efficiently? How do we accommodate changes in how members use or even generate, power? Can we add efficiencies and predictability for BEC while giving members more flexibility and control over their power use? We are engaging expertise, locating resources, and seeking input about rate design impacts on members. Call the co-op or trustees for information about reports and scheduled meetings.

Last year the board set a goal for developing a comprehensive equity management strategy by the end of 2019. Equity management is a standard business discipline. The co-op belongs to its members. Decisions about financing investments and managing expenses affect equity as well as margins that are allocated to members as capital credits. Decisions to allocate and pay capital credits, manage debt, and make plant investments all impact members. Check the BEC balance sheet and watch for announcements of presentations and reports.

Ralph Lewis
Appointed to the Board of Trustees

Reed Point
ember-owner Ralph Lewis has been appointed to the board of trustees for Beartooth Electric Cooperative filling the vacant District 7 seat. Lewis was selected on January 24, 2018, following candidate interviews and began serving at the January board meeting. He replaces David Peterson who retired in October 2018.

“The board is very happy to announce that Ralph Lewis will represent BEC’s member-owners in District 7 (Columbus, Rapelje and Reed Point area),” said board president Julie Lindgren. “Ralph brings an extensive knowledge of the cooperative business model and a strong interest in serving the member-owners in District 7 and across all of BEC’s Districts.”

Lewis brings over 15 years of experience in cooperative management. He is a 30 year resident of Reed Point and is the father of four. Daughter Alesha and sons Rory and Ryan of Reed Point, and son Ross of Dickinson, North Dakota. Ralph’s contact information is available on the BEC website www.beartoothelectric.com under the Board tab.

Welcome aboard Ralph!

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