Bluebonnet 80th ANNIVERSARY

ALL ABOUT METERS

Where did all the **meter readers** go? A lot of them are **still at Bluebonnet** and happy to share their **many stories**

By Mary Ann Roser and Melissa Segrest

Do you remember the friendly person dressed in a tan shirt who walked up your drive to your house every month? He or she peered at your electric meter, decoding its dials, numbers and circling arrows. The person quickly typed numbers into a curious black device and then left, only to return the next month.

They were Bluebonnet Electric Cooperative's meter readers, the human point of contact for thousands of co-op members every month. They worked from 1985 until 2007, when the cooperative fully converted to automated electric meters that use power lines to transmit power consumption information directly to Bluebonnet's system.

After the conversion, many meter readers stayed on with Bluebonnet. Several dozen still work at the co-op, holding various jobs, from line workers to crew supervisors, control room operators to line construction planners.

"That was the cool thing about it," said Kyle Boer, Bluebonnet's superintendent of engineering services. "All of our meter readers were exceptionally loyal, and we didn't want to lay anybody off."

This year, Bluebonnet is celebrating its 80th anniversary. With auspicious timing, in April the cooperative topped the 100,000 meter mark, which establishes it as one of the largest electric co-ops in the nation. Today's electric meters are state of the art, and new versions are replacing older meters. In 2018, 4,000 of them were installed, and this year, crews plan to replace another 3,000 older meters.

Continued on page 20

At top: one of Bluebonnet's newest meters, a solid state microprocessor. Kyle Boer, above, supervised meter readers in Brenham. Today he is superintendent of engineering services and a 37-year Bluebonnet veteran.

Carla Bates when she was a meter reader, at left, and today, above. She became a Bluebonnet employee in 1999 and recalled a few encounters with wasps, bees and spiders, including one black widow spider that gave her a nasty bite. Now she works to design the location of power lines, poles, equipment and meters for members receiving new service.

Sarah Beal photos

Topping 100,000 meters is a milestone for Bluebonnet

By Will Holford

Bluebonnet Electric Cooperative celebrated a new milestone in April when it exceeded the 100,000-meter mark for the first time in its 80-year history.

"This is a significant achievement for Bluebonnet and our members," said Ben Flencher, Bluebonnet's board chairman. "Exceeding 100,000 meters puts Bluebonnet in elite company and the next tier in terms of size among electric co-ops across the country, something few co-ops have accomplished."

The number of meters on a utility's system is an important metric used to measure utilities.

As of 2018, fewer than 35 of the more than 800 electric cooperatives in the United States have more than 100,000 meters. Five of those co-ops, including Bluebonnet, are in Texas.

Bluebonnet's meter growth has accelerated during the past two years, adding nearly 4,000 meters per year.

"While we have experienced unprecedented growth in recent years, we have and will always remain committed to providing outstanding, reliable service to our members and being an integral part of the communities we serve," said Matt Bentke, Bluebonnet's general manager.

> "Exceeding 100,000 meters puts Bluebonnet in elite company and the next tier in terms of size among electric co-ops across the country."
>
> **— Ben Flencher**
> BOARD CHAIRMAN

Bluebonnet's growth has been the result of a boom in housing on the western side of its service area and significant industrial growth in its central and eastern regions. Large subdivisions and apartment complexes have been built in Travis, Bastrop, Hays and Caldwell counties. Commercial growth is spread across Bluebonnet's entire service area, but large-scale oil and gas production, water wells and pipelines are concentrated more in the cooperative's mostly rural eastern regions. This diversity of growth means the cooperative is not overly reliant on one type of member for revenue.

"We have managed the growth that we have experienced so that it not only has paid for itself, but has benefitted our current members," Bentke said. "We have the financial capacity to build the infrastructure needed to serve our new members without raising rates."

Three lucky new members who helped push the cooperative over the milestone meter count were welcomed with gift baskets. (See videos of them on facebook.com/BluebonnetElectric, in the videos section.)

As Bluebonnet celebrates its 80th anniversary this year, its legacy of member service, community support and safe, reliable electric power continues to grow.

"This is an exciting time in Bluebonnet's history," Bentke said. "Our future is bright due in large part to the members, directors and employees who, during the past 80 years, helped build Bluebonnet into one of the largest cooperatives and best utilities in the nation. Their dedication and legacy pushes us forward."

Bluebonnet

Continued from page 18

BACK IN THE DAY

Before meter readers, Bluebonnet members read their own electric meters and wrote down how much electricity they used on cards that were sent to the cooperative.

"It was an honor system," said James Jordan, who runs the meter distribution shop at the cooperative's Giddings service center. He has worked at Bluebonnet for 23 years. If a member's consumption numbers looked a little suspicious, an employee would stop by and check the meter.

In the early 1970s, Bluebonnet had far fewer meters across its 3,800-square-mile service area and almost all of those were residential, said Donnie Graham of Lockhart, a former supervisor of meter readers who retired in 2005. At that time, the co-op staff was so small that after 5 p.m. and on weekends, Graham said he would just transfer calls about power outages to his home phone.

By the end of the meter-reading era, the cooperative had dozens of meter readers, each trying to read at least 100 meters a day. Although meter readers had radios to communicate with supervisors, they relied on paper maps in large bound volumes, looking for dots that pinpointed meter locations.

Reaching a meter wasn't just a stroll up a driveway. Sometimes, a meter reader had to drive a mile, go through multiple locked gates and make a long trek on foot just to reach a single meter. They carried heavy rings of 50 or more keys to unlock gates on members' property to access meters.

Marti Wright, superintendent of contractor operations, was a meter reader for about a year. She always made her rounds with a big bag of treats to appease angry dogs but occasionally had to fend off attacks with her heavy hand-held data recorder.

Philip Grimm

Philip Grimm recalled how rain and mud could make roads impassable for their two-wheel drive trucks. Many meter readers carried long lengths of chain for the inevitable stuck-in-a-rut moment. Driving through oil fields and muddy roads with only AM radio and no air conditioning was a challenge. Grimm gets to be pickier about Bluebonnet's vehicles today: He is the cooperative's fleet supervisor.

"We were very rough on trucks," said Carla Bates, a former meter reader still working with Bluebonnet.

Bates first read meters for a contractor, then as a Bluebonnet employee starting in 1999. Today she helps plot the locations of poles, lines, equipment and meters for new homes of new cooperative members. That job is important, but "when we were the meter readers, we were the most important people at Bluebonnet," she said with a grin.

THE HUMAN TOUCH

Some Bluebonnet members loved to see the meter readers. Others made it clear they didn't want them on their property.

"Almost all of our members – 99.9 percent – were, and are, really great people," said Boer, who has worked more than three decades.

Doug Schlemmer was a Bluebonnet meter reader for years. Today he is a crew supervisor out of the Giddings service center. He remembers receiving holiday cookies from members and having long conversations with members who rarely had visitors. One older man always offered a Dr Pepper. Another man refused to pay his monthly bill until someone came to his house, when he would gladly pay a late fee for the chance to chat.

Doug Schlemmer

It was no surprise that many Bluebonnet members, especially the seniors, were sad to learn meter readers would no longer be dropping by.

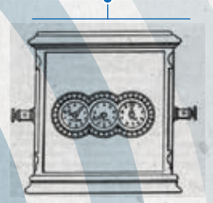
Sometimes meter readers noticed problems: a gate that had been cut, a house that had been broken into, a big water leak. They fixed the occasional flat tire for a member or helped an older couple move furniture.

But the job was not all cookies and compliments. Some ornery members

Continued on page 23

AN ELECTRIC METER TIMELINE

Timeline continued on next page



1872

Samuel Gardiner Jr. of New York City takes out first known patent for an electric meter. It uses a clock mechanism to indicate on a dial when the electric current is active.

1879

Thomas Edison develops a meter with two rods of copper submerged in a jar containing a zinc-sulfate electrolyte solution. As electricity flows through the jar, it dissolves zinc off the positive plate and deposits it onto the negative one, which can then be weighed.

1882

Hermann Aron of Germany constructs a meter with two pendulums wrapped in coils. One pendulum accelerates and the other slows in proportion to the current. A gear measures the difference in speed between the two clocks.

1883

Edison Electric Light Co. earns first payment. A dollar from Ansonia Brass Co. to pay part of its $50.40 electric bill is endorsed with a commemorative note by Edison engineer Charles L. Clarke. In 2014, it sells at auption for $15,000.

1886

Edward Weston develops a moving-coil galvanometer that becomes the standard for amp, volt and watt meters for more than 100 years.

1888

A laboratory accident leads Oliver Shallenberger at Westinghouse to develop the first alternating-current-measuring meter.

1890

Future MIT President Elihu Thomson invents the first watt-hour meter to measure and record electric power as it flows through a circuit. A counter displays kilowatt-hours on dials.

1889

Hungarian Otto Titusz Bláthy develops a device containing a rotating metallic disk or cylinder, which is acted upon by two magnetic fields displaced in phase from each other. Bláthy's design became the first commonly used electric meter. Many of the kilowatt-hour meters used today operate on the same principle.

1890s

The International Electrical Congress creates standards for measurement of electricity.

1898

Association of Edison Illuminating Co. creates Committee on Meters. The trade association is a leader in the electric energy industry, with a Meter and Service Committee.

1899

General Electric introduces a new concept in electric meters: a prepayment device that allows collection in advance for electricity service.

1918

During World War I, more than 23 percent of American women work, many holding jobs traditionally awarded to men, including these four meter readers for Minneapolis General Electric Co. in Minnesota.

1920s

Electric meters get redesign to maintain accuracy in a range of temperatures. Seasonal fluctuations no longer throw off meter precision, a glitch that had required meter readjustments.

In with the new: Bluebonnet meters

There are two types of meters on Bluebonnet's system, older electromechanical meters and new solid state microprocessor meters.

THE MODERN METER

The newest residential meters, right, are made by Landis+Gyr or GE and feature a digital display and no visible moving parts.

STILL WORKING

Older meters still on the system have dials and a rotating dial. The flow of electricity through the meter turns the dial and registers consumption. They are no longer manufactured and are being phased out.

DATA ON POWER LINES

Both types of meters send data through a powerline communication system to a Bluebonnet substation, and from there data travels through microwave or fiber optic networks to Bluebonnet's control center.

TRANSITIONS

Thousands of the older meters on Bluebonnet's system, like the one at far left, have been or will be replaced with the solid state digital meters, which can provide information about the quality of power being served. With these 'smart' meters, members can see their own energy use and costs online.

SAFE DEVICES

Bluebonnet's meters do not communicate via a radio frequency and they have a small electromagnetic field. A microwave or hair dryer in use has a stronger field than a meter.

James Jordan, a 23-year employee at Bluebonnet, today runs the 'meter shop' at the co-op's Giddings service center. There, he distributes and track hundreds of meters that move through that department.

Continued from page 21

locked out the meter readers or refused to provide gate lock combinations. No one recalls being hurt by an annoyed member, despite the occasional threat and drawn gun.

A few members went to great lengths attempting to tamper with their meters to try and avoid paying bills – which was, and still is, illegal.

LIONS, TIGERS AND DOGS

Animals and insects posed the biggest problems for meter readers. Most agreed their scariest encounters were with dogs. Even with dog treats, distraction tactics, sprays, "bad dog" warnings, requests for help from dog owners and the occasional stick as a defensive weapon, there were a few dog bites but mostly near misses.

Marti Wright, now superintendent of contractor operations, kept a large bag of dog treats in her truck and always had some handy in her pocket. She said that if a dog was chasing her, one of her strategies was to toss a few treats as a distraction to allow her to jump back into the truck.

Bees, wasps and spiders caused problems, too. Bates once reached over a fence and was bitten by a black widow spider. Occasionally, meter readers were chased by surly geese and turkeys, too.

And yes, there really was a lion, a tiger and a panther, according to Schlemmer. They lived on property near Birch Creek. Schlemmer will never forget one big cat that tried to sneak up on him. He heard the unmistakable hiss of a cougar hot on his heels and barely escaped an attack, even though the big cat was chained.

On that day, the promise of high-tech automated meters never seemed so good. ▯

AN ELECTRIC METER TIMELINE

Continued from previous page

1930s

New design in meters allows electric utilities to move meters outdoors so they can be read without entering customer premises.

1920-1950

Uniformed meter readers are a regular part of the American landscape for decades as they visit homes and businesses to look at meters to determine the previous month's consumption for billing purposes. Meter readers from Potomac Electric in Washington, D.C., above.

1934

Meter makers improve designs to prevent outdoor meters in rural areas from running too fast after power surges from lightning storms. At right, employees of the meter manufacturer Sangamo Electric Co. of Springfield, Ill., in 1932.

1934

Landis & Gyr develops the Trivector meter, which can be configured to measure various types of energy.

1939

Bluebonnet Electric Cooperative is created (originally as Lower Colorado River Electric Cooperative). An honor system lets members read their own electric meters and submit cards showing their electric use for the month.

1960s

Meter readers in Cincinnati — following a tradition that began in the 1800s — carry up to 10 rings of house keys on their belts to enter homes to read meters. By 1970, more than 60,000 customers entrust house keys to Cincinnati Gas & Electric (CG&E).

1973

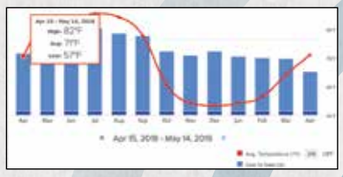
U.S. Marine officer Jim Sovaiko finds old electric meters in a scrapyard while home on leave. After pizza and handshakes, he and two friends invest in the future Arcman Corp. in Throop, Penn. The company makes unique lamps from 1920s residential electric meters that still work.

1980s-2000s

Bluebonnet meter readers, including Marti Wright, above, shown in 2005, drive routes by relying on volumes of maps with hand-drawn dots designating the location of each electric meter.

2001

Hand-held Kill A Watt device is offered by P3 International of New York to allow consumers to measure amount of electricity used by home appliances. Plug an appliance into today's model of the meter to see how much electricity an appliance uses. Some public libraries loan out Kill A Watts.



2010

Bluebonnet Electric Cooperative introduces its Energy Tracker, a digital portal where members can see information about their electric bill and energy use, tracked by week, month or year.

2017

Almost half of U.S. electricity customers have smart meters. The meters measure and record electricity use at least every hour and provide data to residents and utilities at least once a day. Some meters show real-time electric use.

2018

Texas residents pay average of 11.69 cents per kilowatt-hour for electricity, compared with 32.46 cents in Hawaii (highest in U.S.) and 9.11 cents in Louisiana (lowest in U.S.).

Timeline researched and written by Denise Gamino and Gretchen Heber; designed by Joe Stafford and Gretchen Heber.
For photo credits, see this story on bluebonnet.coop, under the News tab.