

# NORTH PLAINS ELECTRIC COOPERATIVE

P.O. Box 1008 • Perryton, TX 79070 • Phone (806) 435-5482

## Storm Brings Damage to Briscoe Substation

Summer thunderstorms are a welcome sight in the North Plains service area. But when these storms become severe, it is often a mixed blessing. Forces within a storm can pose challenges for the electric system that delivers power to your homes and businesses. High winds can snap power poles, and tornadoes are especially destructive. The most common form of storm damage to the NPEC distribution system is caused by lightning. Lightning is electrical energy that contains one million times the power used in a 100-watt light bulb. There are several measures we take to protect against lightning damage, even though it is very unpredictable and powerful. Sometimes, however, NPEC's protection is not enough and Mother Nature gets the upper hand.

Such was the case on the morning of July 23 when a strong storm passed through the southern portion of the North Plains service area. NPEC members in Roberts, Wheeler, Hemphill and Lipscomb counties awoke without power. NPEC linemen knew that the



Briscoe Substation, the Urschel Substation near Canadian, and the Glazier Substation were all without power. The breaker that delivers power to these substations through the transmission line from a delivery point in Roberts County had tripped. This breaker is very similar to a circuit

breaker in a house except it operates on a much larger scale. The breaker senses problems or faults and automatically switches the power off. But instead of protecting an air conditioner and several feet of wire operating at 220 volts, this breaker is designed to protect three substations and 46 miles of wire operating at 69,000 volts.

Substations are protected independently with fuses that should be blown if a problem is isolated within the substation. When fuses are blown, power continues to move down the line to other substations but stops flowing into the damaged substation, thus limiting the members without service. Because no fuses were blown, troubleshooting line personnel quickly eliminated problems within the three substations. That fact and the breaker operation led them to suspect the problem may have been with transmission line between Miami and Glazier.

Again, the information pointed to a transmission line problem and crews switched the 46 miles of line to auxil-





inary lines that feed power from a different direction and a different source to isolate the location of the problem. This operation requires crews to drive several miles to get to the multiple locations and effectively has to happen in concert, coordinated by the supervisory staff in Perryton. This is a time-consuming process, but it is ultimately faster than checking the lines by driving through muddy pastures in the dark.

By process of elimination, it was determined that the trouble was in the Briscoe Substation despite the fact that the protection fuses designed to isolate and localize the problem had yet to blow. And as luck would have it, Briscoe is the largest substation in the NPEC service territory in terms of the number of meters it serves. Meanwhile, members in northern Lipscomb and northern Hemphill counties served by the Urschel and Glazier substations had power restored at around 8 a.m.

Numerous other troubleshooting steps were initiated to isolate the problem inside the Briscoe station. After all other possibilities were eliminated, it was determined that the main distribution transformer was damaged. This discovery created a complex set of logistics that had to be solved before power could be restored. NPEC had a power transformer in the Perryton yard but it was needed at the Briscoe Substation. After several calls, the closest crane and low-platform tractor-trailer was found in Amarillo. They were dispatched at

approximately 9 that morning

While the vehicles were in transit, NPEC crews were backfeeding distribution lines in and around Canadian to energize as many homes and meters as the lines could handle. Voltage drop is a major concern during this process and had to be checked with each addition. When voltage dropped to a critically low level the crews had to stop at that meter and leave some line de-energized. All of you who were without power all day were a part of this group, and we apologize.

Office employees tried to keep those affected informed throughout the day, and we appreciate the patience and graciousness of our members.

The transformer was transported to Briscoe by 1:30 p.m., and crews spent

the next five and half hours getting the failed transformer out and the replacement energized. As you can see from the accompanying pictures, this was no small task. The transformer weighs 19 tons and must be handled carefully. Despite muddy conditions and the difficulty of getting the replacement into place, the crews were able to change out the transformer and restore power at 7 p.m.

“Crews handled this outage as best they could, and we hope every effort was made to inform our members of the situation,” said NPEC General Manager Randy Mahannah. He added, “We have very understanding members.”

The Transformer Division of Texas Electric Cooperatives, our statewide organization, received the failed transformer in Georgetown for repair.



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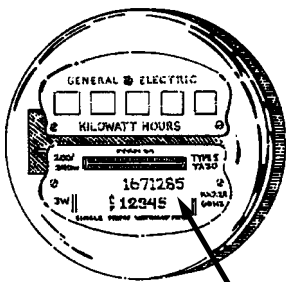


## Meet Colby Brown

**E**quipment Operator Colby Brown can usually be found at the wheel or at the controls of NPEC's Texhoma digger derrick truck. Brown joined NPEC in 1985. As a two-year member of the construction crew, Colby operates the digger truck during line construction. Before joining the construction crew, he spent two years as a groundman and digger operator in Canadian. Colby also became very familiar with the system and our members during his 11 years as a meter reader/collector.



## When Reporting an Outage:



Giving us the meter number helps us locate you faster and better than directions.

**For service call:  
(806) 435-5482  
or 1-800-272-5482**

## Make Web Surfing a Family Affair

**P**arents who don't let their kids roam the streets alone likewise should supervise them while they're surfing the Internet.

To protect curious youngsters from cyber-harm, make online exploration a family affair. Specifically:

- Allow your child to log on only with your approval.
- Talk about these guidelines with your child. Agree which ones apply to you and your child, and then craft your family's own Internet safety plan.
- Locate the computer in a room where there is adult supervision rather than in your child's bedroom.
- Children should use the family's e-mail address rather than a personal e-mail address. There parents can briefly scan their kids' incoming mail.
- Watch the content of the mail if your child subscribes to mailing lists. If you have concerns about mail

coming from a list, contact the list owner.

As children get used to exploring the Web with their parents, they learn to deal with various online situations. Eventually, they'll know enough to go it alone.

