



fixing faults faster

Bluebonnet tests new technology that reduces outage duration

By Will Holford

No one likes a power outage. Not the families and businesses who have to endure them. And not the utility workers who are called out in all types of weather and at all hours of the day and night to fix them.

So any opportunity to reduce the time that power is out and improve safety and reliability is a win for everyone.

That is why Bluebonnet Electric Cooperative is deploying new equipment and technology called “distribution automation” that can do in just a few minutes what used to take an hour or two, sometimes longer. When the distribution automation system is fully functional, most places affected by an outage in the newly automated area will lose power for only a few seconds.

Bluebonnet began installing its electric distribution automation system near Manor in eastern Travis County in 2014 and finished in late 2015. The co-op is now testing the equipment and software, and training field personnel and control room operators to use it.

The electric distribution automation system in Manor covers 4,313 meters along 340 miles of line.

“We chose Manor as the first area for distribution automation because of the number of homes and businesses in the area and their close proximity to three electric



substations from which we can reliably serve our members,” said Eric Kocian, Bluebonnet’s chief engineer and system operations officer. “We are looking at other locations in our service area that would be the next logical places to deploy this technology and equipment.”

Here’s how distribution automation works: When an electrical fault causes an outage on Bluebonnet’s electric power grid, highly skilled control room operators see it on their monitors and locate it on the grid. They then communicate through a cellular network with a series of switches that open and close to isolate

TOP LEFT: The Intelligent Electronic Device panel controls the distribution automation system. Once the system is in place, power outages in the area will last for only a few seconds in most cases. **LEFT:** Bluebonnet field operations employees Michael Gholson, front, and Brad Moerbe use long fiberglass poles called hot sticks to open circuits to make it safe to test the system.

the troubled section of power line. Electricity is then rerouted to homes and businesses through power lines not affected by the fault.

Once it is fully functional in Manor, the new system will automatically recognize a power outage, locate the fault and determine which switches can isolate that section of line. The system will open or close the correct switches to route power to all but the few members whose homes or businesses are on the section of line where the fault is located.

Think of it like this: Bluebonnet’s electric grid is basically like the streets in your town or neighborhood. When city or county officials



LEFT: Gholson, left, and Moerbe use the same hot sticks to close the circuit after a successful test of the new system. **BELOW:** Bluebonnet field operations employee Chad Siegmund monitors the distribution automation equipment to ensure the equipment is functioning properly.



Sarah Beal photos

need to repair a section of street, they close only the section where the work is to be done, inconveniencing as few people as possible. You can still get to where you need to go by driving around the closed section using other streets. But the city or county has to go out and put up barricades and signs directing drivers around the hazard.

During a power outage, Bluebonnet’s crews are dispatched to the area to locate the fault. Once it’s located, linemen work with control room operators to determine how to restore power to as many members as possible by isolating the fault until repairs can be completed and power is fully restored.

Basically, the power, like traffic in the city street analogy, is detoured around the fault to everyone but the few homes or businesses on that isolated section of line.

Throughout most of Bluebonnet’s electric grid, this time-consuming process is done manually. However, when an outage occurs within the distribution automation system in Manor, Bluebonnet’s control room operators quickly and remotely isolate the outage. And when the Manor system is fully functional, the automated system will significantly reduce the duration of outages for Bluebonnet members and improve safety and reliability. ■