

Reliability

Delivering Quality Power, Efficiently and Safely



There are times when Mother Nature suddenly unleashes her fury, and on Aug. 23, 2008, such an event—known as Tropical Storm Fay—occurred on our system. Over this particular weekend, your co-op employees reported in and worked hard to restore power to 7,500 members who suffered damage. Outages started at 4 a.m. with the majority taking place at 3:30 p.m. on Saturday and by 10 p.m. Sunday, all power was restored in a safe and efficient manner.

A restoration effort of this extent (outages involved about one-fifth of the membership) and short duration (42 hours from the first reports back to full operation) does not happen without preparation. In addition to dedicated employees, decisions made in 2006 played a vital role. Because of a commitment to lower our operating cost through technology efficiencies, we began the installation of our advanced metering infrastructure (or smart meters) that year. You may recall during the two-year installation phase, I highlighted many member benefits of this technology. Now completely implemented, we are able to resolve many problems and potential outages without interrupting service. In fact, we are able to generate “blink” reports that tell us where members have experienced those momentary, but pesky, light flickers. This report is then electronically transferred into our mapping system so we can find out what is wrong.

We have also focused on preventative maintenance, which is a crucial component of reliability.

A full-time line inspector, who is equipped with an infrared camera, inspects our system for any impending problems by measuring the heat factor of loose connections at the substations or on the power lines. Nearly every piece of equipment on a utility system gets hot before failure, making infrared technology a valuable diagnostic tool in improving system efficiency, power quality and averting outages. By being proactive, we can correct trouble spots before they affect our members.

Today’s technology does help us move toward a higher standard of service reliability, and tools, like Supervisory Control and Data Acquisition (SCADA), enable us to monitor, coordinate, control and operate distribution components, equipment and devices in a real-time mode from the office. This system directly leads to increased reliability for you and lowers operating costs for us.

One additional project that is helping us gain efficiencies and reliability is the initial installation of Automated Vehicle Locators (AVLs) in our field vehicles. This system permits the co-op to see exactly where all of the crews are working at any given time, even in remote areas, allowing us to dispatch our field crews in the most resourceful and economical way.

Although reliability is a multifaceted challenge, it is key when it comes to our commitment to you: to deliver the highest possible quality power—efficiently, safely and at the lowest possible cost. 

Tom Stackhouse, CAEC President and CEO

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3-Day Gulf Shores Couples Conference

Since 1975, CAEC has sponsored two couples to attend the annual Alabama Cooperative Couples Conference. The Couples Conference is a three-day meeting offering participants the opportunity to learn more about how cooperative businesses are organized; how they differ from other types of organizations and what economic and service benefits they offer to member-owners. In addition, the event gives attendees the opportunity to meet with several

types of cooperative leaders including those from the electric utility industry, farming and poultry industries, banking and lending institutions. Bill and Lisa O'Dell and Bill and Stephanie Dennis



Lisa and Bill O'Dell

(photo not shown) were selected to represent CAEC in 2008 at the 33rd annual conference which was held in Orange Beach, Ala. They were among 27 couples in attendance. "We learned how cooperative businesses work for their customers and give dividends back," said Lisa of the conference. "My husband and I met a lot of self-employed people just like ourselves and we all had so much in common."

"We learned how cooperative businesses work for their customers and give dividends back."

- Lisa O'Dell

The Dennis' also felt the conference was very informative, especially when learning about power production and how power is sold. "We were intrigued learning about clean coal technology because we didn't know there were different grades of coal," stated Bill.

Are you interested in attending the 2009 Alabama Cooperative Conference in Orange Beach in July? To be eligible, you must be a member of CAEC (past Couples Conference attendees are not eligible). For more information about the Alabama Cooperative Couples Conference, or to apply, call 1-800-545-5735 ext. 2213 or visit www.caec.coop.

CAEC Statement of Non-Discrimination

Central Alabama Electric Cooperative is the recipient of federal financial assistance from the Rural Utilities Services (RUS), an agency of the U.S. Department of Agriculture, and is subject to the provisions of Title VI of the Civil Rights Act of 1964, as amended, Section 504 of the Rehabilitation Act of 1973, as amended, the Age Discrimination Act of 1975, as amended, and the rules and regulations of the U.S. Department of Agriculture which provide that no person in the United States on the basis of race, color, national origin, gender, religion, age, disability, political beliefs and marital or family status shall be excluded from participation in, admission or access to, denied the benefits of, or otherwise be subjected to discrimination under any of this organization's programs or activities. The person responsible for coordinating this organization's nondiscrimination compliance efforts is Tom Stackhouse, President/Chief Executive Officer. Any individual, or specific class of individuals, who feels that this organization has subjected them to discrimination may obtain further information about the statutes and regulations listed above from and/or file a written complaint with this organization; or write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice and TDD). Complaints must be filed within 180 days after the alleged discrimination. Confidentiality will be maintained to the extent possible. [CR](#)

Electricity...

Powers Conveniences

Have you ever considered how handy it is to flip a switch or push a button and have instant conveniences? It seems so simple; you get a little cold or hot, you bump your thermostat up or down; your family gets hungry, you grab food from your refrigerator and heat it up in the microwave, or cook a meal on your flat top stove; stressful day at work, you jump into a hot tub of water; need to know what's going on in the world, you grab the remote and turn on the TV.

Now, consider this question: How valuable is electricity to you?

Last month in *Alabama Living* magazine we featured an article entitled, "Electricity Us-

age in Your Home," which discussed how to calculate the amount of energy your electronics, appliances and other conveniences use, over a period of time. We told you that the average home uses 1,200 kilowatt hours (kWh) a month, which allows you the enjoyment of the conveniences listed above.

Regardless of the kWhs you consume, how did they get to you? Was it as easy as flipping a switch or pushing a button?

The following explanation may give you some insight about the operations side of your distribution co-op, CAEC.

Let's start at the substation:

Substation

CAEC purchases energy from our generation and transmission co-op, PowerSouth, which generates or purchases the electricity and transmits it over long distances on transmission lines to distribution utilities, like CAEC. Our substations are the point at which power grid infrastructure becomes distribution.

Distribution substations step down the voltage coming in from the transmission lines in order to begin the process of sending power to your home. A lot of work goes into planning new substations or even substation upgrades. CAEC uses long-term forecasting to plan for new substations, which has a direct impact on reliability.

When you sign up for service, no matter what your intentions are for that meter, we have to factor in your current and future needs for power into these forecasts. Siting and building a substation is no simple process; in fact, from the planning phase to implementation, it takes two to three years to complete just one, at a cost of approximately \$1.5 million. CAEC has 22 substations and has plans to upgrade three in the next five years in the Wetumpka, Statesville, and Kingston areas.



Power Transformer

The voltage coming to the substation, at 115,000 or 46,000 volts, is too high to go directly into your neighborhoods. Power transformers are used to step the voltage down to an acceptable level to bring into your neighborhoods.



Distribution Transformer



We're not ready to get the power to your house just yet; the voltage coming from the power transformer, at 25,000 or 13,200 volts, is still too high to go directly into your home. From there, power is distributed across miles (depending on how far your home is from the substation) of power lines to reach a distribution transformer, which steps the power down again to the voltage level required by your home, which is 120/240 Volts. In the last five years the cost of transformers has risen 50 percent, partly due to escalating material costs and also to federal regulations requiring higher efficiencies.

Service Drop and Meter

From the distribution transformer, a service wire is connected to your house, which is called the service drop. If your service is overhead, CAEC connects the service wire to your weatherhead, which is the point of connection between CAEC's facilities and the homeowner's. If your service wire is underground, CAEC connects the service wire to your underground meter box. The tie that is made on the source side of the meter is the point of connection between CAEC and the member. The meter box in both cases allows CAEC to measure the amount of energy used.



From the meter box, a wire usually connects to the home's breaker box, which functions as a safety mechanism for your home. At this point your home wiring comes into play and enables energy to be sent to your plug outlets and light switches at the touch of a button or flip of a switch.

This only covers a few major pieces of equipment we use to keep your power on more than 99.9 percent of the time. Some other vital equipment we use includes highside and lowside breakers, voltage regulators and lightning arrestors.

This process also does not cover the maintenance we must perform and personnel it takes to ensure the infrastructure we have put in place stays in top condition. This includes our

vegetation management program, line and substation inspections and other critical programs.

The next time you're sitting in front of the TV watching your favorite show with a bag of freshly popped popcorn from the microwave, think about the long distance the energy traveled to give you that moment.

We understand the importance of electricity for our members. It's not just being able to use the microwave; it's providing a warm meal for your family. It's not just the ability to have a cold glass of milk; it's being able to keep food at a temperature that preserves it over a period of time. It's not heating a room; it's keeping your family warm.

We are at work every day looking out for you, making sure you have power available whenever you need it. 

Electrical Safety:

Before, During and After a Storm

History teaches that a lack of storm awareness and preparation are common threads among all severe weather related disasters. By knowing your vulnerability and what actions you should take, you can reduce the effects of a disastrous storm.

Here are some reminders as to what to do before, during and after a storm:

Before the Storm:

- Have a supply of flashlights, a battery-powered radio and fresh batteries, medicine, first aid supplies, bottled water, non-perishable food and baby items (if applicable).
- Homeowners with wells should draw an emergency water supply.
- Pet shelters may require proof of vaccines, a collar with identification and medications if needed.
- If you evacuate, shut off your electricity at the breaker box.

During The Storm:

- Get inside a building and stay away from windows.
- Do not use the phone or run water during lightning storms.
- Avoid standing in water or taking a bath or shower.
- Don't open freezers and refrigerators any more than necessary. Food will stay frozen in a fully loaded freezer for 36 to 48 hours if the door remains closed. If the freezer is half full, the food will generally keep 24 hours. Food in the refrigerator will remain cold for four to six hours if the door isn't opened.
- Listen to local radio stations for news about outages.
- Turn off your heating and air conditioning systems and unplug sensitive electronic appliances such as TVs, VCRs, microwave ovens and computers.
- Turn off your electric range to prevent

possible damage if you're away when the power is restored.

After the Storm:

- Wait five to 10 minutes before turning on appliances and heating systems after power is restored.
- Never touch downed or hanging power lines in your yard or in the street. Call your electric co-op to report the location.
- If your electric service is out, check with your neighbors to see if they have power. If they do, you could have a blown fuse or a tripped breaker. Never replace a fuse or reset a circuit breaker with wet hands or while standing on a wet (or even damp) surface.
 - If you're without electricity and want to use a portable generator, make sure you use it in a well-ventilated area. Don't connect the generator to your home's electrical panel or fuse boxes. It may cause electricity to feed back into the power lines, which can endanger linemen and damage electric service facilities.
- If your power is out following a storm and you must cook food with Sterno or charcoal, remember to do so outside in a well-ventilated area. Cooking indoors with Sterno or charcoal will produce deadly carbon monoxide fumes. Replenish your supplies of batteries, bottled water and non-perishable food items in preparation for future storms. 



Lightning Protection From CAEC

Start protecting your appliances today.

Prevent lightning from damaging your appliances and electronics with Central Alabama Electric Cooperative's Lightning Protection program.

Lightning can enter your home through electric lines, but a meter base device from CAEC can provide a protective barrier against this high voltage. What makes our product different from those found in retail stores?



- Our meter base unit, used in conjunction with our point-of-use devices (electronics plug right into these strips) can prevent whole house damage.
- Meter base devices suppress lightning faster than products offered at retail stores.
- The warranty and insurance of our devices exceed that of retail.

Each home and business is evaluated individually so you buy or lease only what you need. Call us (800) 545-5735 ext. 2178 for a consultation; we can recommend the right solution for you, or visit our Web site (www.caec.coop) to see the many products available.



Central Alabama
Electric Cooperative

A Touchstone Energy® Cooperative 

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Recipe for *Efficiency* from CAEC

Treescaping

One of your greatest opportunities to conserve energy is by properly selecting and planting trees around your home. Referred to as “treescaping,” the art of selecting and maintaining trees for a specific purpose or area, you can save up to 25 percent of your household energy

consumption for heating and cooling.

Tree species and proper placement are critical to energy-savings effectiveness. Below are instructions to help you in this decision-making process and steps on how to appropriately plant a tree:

Ingredients (supplies):

- Tree
- Potting Soil or Compost
- Mulch (organic materials)

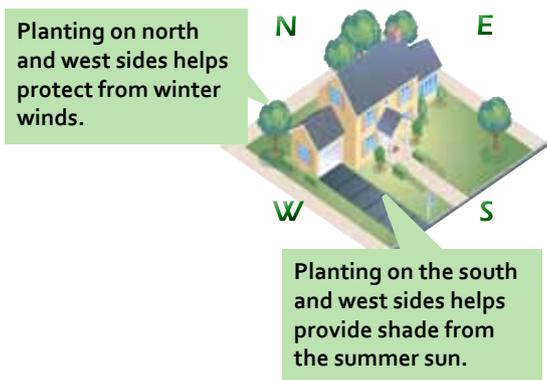
Utensils (tools):

- Shovel
- Water hose
- Tape measure
- Bolt cutters or metal snips
- Compass (optional)

Directions:

Treescaping

1. For maximum energy savings, plant deciduous trees (those with seasonal leaves) to provide shade and block heat in the summertime but does not block sunlight from your home during the winter. Plant these trees on the west and south side of your home for best results.



2. For energy efficiency in the winter, plant evergreens on the north and west sides of your home. A well placed windbreak can reduce wind velocity by 80 percent.

3. Utilize the sun (rises in the east and sets in the north) or a compass for determining the correct direction to place your trees.

How to Plant Your Tree

1. Dig a hole in the soil as deep as the root ball and twice as wide.



2. Mix compost or potting soil with the soil removed from the hole if your soil is very heavy or sandy.
3. Remove the tree from its container, gently freeing its roots.

4. If the root ball is surrounded by burlap or wire, remove this before planting.



5. Place the tree in the hole so that it sits at its original soil line.

6. Firmly, but gently fill the hole half full of the removed soil.
7. Water well, then fill to the top with soil.
8. Form a shallow basin around the tree and fill it at least three times with water.

9. Cover the ground around the new tree with four inches of mulch, keeping mulch away from the trunk.

10. Take care of your tree — keep it well watered for the first year; twice a week is sufficient.

Be sure to make safety your top priority and don't plant near power lines. Before you dig, call 811.