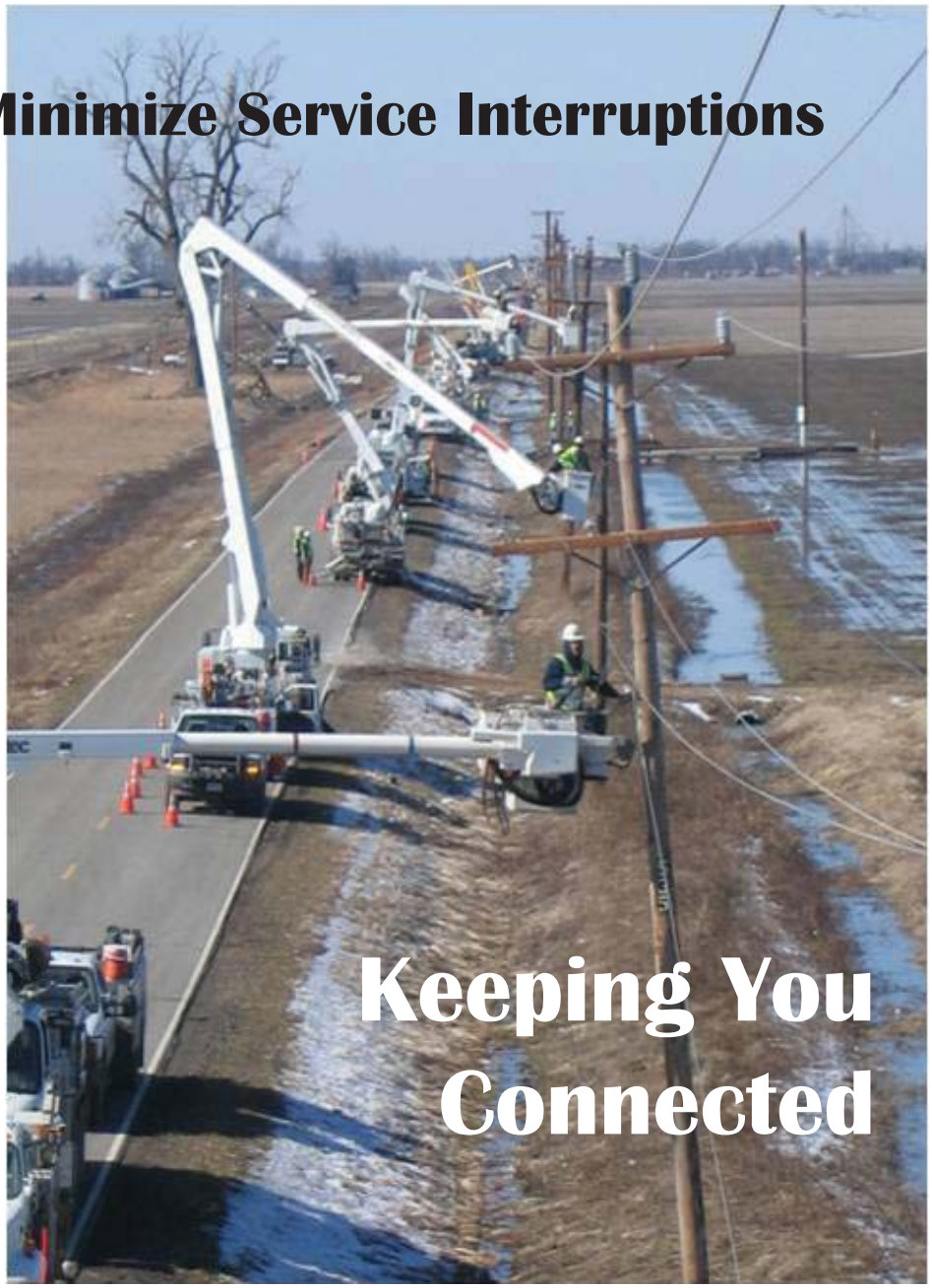
Working To Minimize Service Interruptions



Ameren Missouri photo

By Debbie Bernsen and Lisa Kremer

Imagine arriving home one winter night, in the middle of an ice storm, to a street that is totally dark. You enter your pitch-black home and struggle to find the one flashlight that still has good batteries. You attempt to use your cordless phone to call the power company, but the phone doesn't work because it is powered by the very electricity you are without. You are cold, can barely see, and are unable to contact a neighbor or relative, prepare a meal—or even begin a load of laundry! Initial annoyance begins to turn to concern as you think about what the following evening hours may bring.

Dangerous winter storms in December 2007 brought similar circumstances to tens of thousands of citizens in the Show-Me-State.

Many things can cause electrical outages, including ice and wind storms, lightning, equipment failures, car accidents, unchecked growth of trees and plants near power lines, and even wandering animals can disrupt the electrical power we all depend upon. Outages caused by weather are the most common, and they can place utility service of all kinds in jeopardy—natural gas, water, sewer and telecommunications operations as well as electric.

Missourians are dependent upon electricity in ways commonly thought of and in more subtle ways not often thought about. With the flip of a switch on a thermostat, we heat our homes with electricity or power our natural gas or propane gas furnace. By placing a plug in an outlet, we run necessary appliances such as refrigerators, clothes dryers and washing machines. We keep abreast of current events through our televisions and computers. What was in the past once thought of as a luxury for a few is now a necessity.

Working to Minimize Electric Interruptions

The Missouri Public Service Commission (PSC) has taken steps in recent years to reduce the number of outages – both the duration and impact – experienced by consumers of Missouri's regulated electric utility companies. PSC rulemakings that set utility standards have provided the most visible benefits in the effort to reduce electric outages.

Storm preparation is key to keeping the power on

The Commission adopted several rules, effective in June of 2008, that are designed to increase service reliability for customers of Missouri's investor-owned electric utilities. These rules were developed following weather-related outages during the summer of 2006 and winter of 2007 and are in direct response to customer concerns regarding the reliability of electric service.

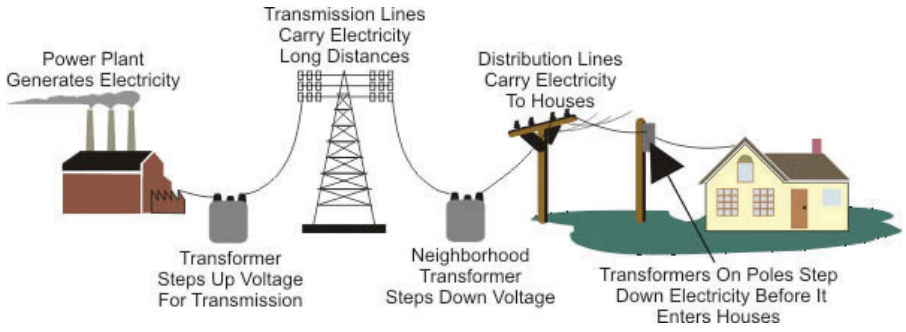
A new rule regarding vegetation management requires companies to adhere to industry wide tree-trimming standards. Companies must conduct trimming and other methods of vegetation management on a regularly scheduled basis to ensure that defined clearances are maintained around power lines. This rule also directs companies to perform visual inspections of all of their facilities between the scheduled trimmings. This work is performed according to standards of the American National Standards Institute (ANSI) and the National Electric Safety Code. Annual reports are then filed with the Commission and reviewed by the Commission's Staff to ensure utility company compliance.

Detailed Inspections

Another new rule focuses on the condition of the electric facilities and requires companies to perform visual, detailed and intensive inspections on their utility poles, wires, transformers and underground equipment based upon a specific

A worker repairs a powerline following a 2010 ice storm in Joplin.

Empire District Electric Co. photo



How electricty gets to your house

Source: National Energy Education Development Project

schedule. This rule helps to ensure that every company has a program in place to inspect, and if need be, perform necessary maintenance or replacement of facilities.

Tracking Outages

An additional rule that became effective in July of 2008 requires electric companies to compile and file customer-specific and system-wide information on outages annually with the PSC. This rule was designed to further increase electric service reliability by identifying and prioritizing the areas that have encountered repeated outages in the past. The rule then requires companies to take actions to improve the performance of their electric facilities.

Other ongoing PSC activities in this area include the performance of comprehensive investigations of Missouri regulated utilities' storm preparation and service restoration activities. These investigations, conducted by the Commission's Staff, include a detailed review and analysis of both utility preparation prior to an outage and the company's outage restoration activities. These investigation reports provide recommendations to utilities when appropriate.

Staff investigations include analysis of the utility's planning, storm impacts, restoration actions, actions to prevent future outages, call center and communication operations during an outage. Subsequent to the issuance of its findings and recommendations, Staff follows up with the utilities to determine whether they are implementing the recommendations. Investigation activities have included formal proceedings before the Commission, workshops to share successful practices and processes to prevent or minimize future outage durations and severity, and local public hearings to allow the Commission to hear live testimony from customers who experienced service disruptions. Reports are public and accessible on the PSC's website: www.psc.mo.gov.

The PSC tracks and monitors customer outage complaints and comments it receives, identifying feedback by category to monitor trends and using the information customers provide to shape utility actions and improvement, where needed. Categories of customer concern can include any number of areas such as safety, tree trimming, repeat outages, utility communication methods such as websites, call centers, and use of the news media. Public communication by the Commission's Public Information and Consumer Services departments is designed to timely inform the public of utility and Commission activities during outages and to support 'outreach' efforts through the release of educational information about what consumers can do to ensure their safety and comfort.

Adding Up The Damage...

The following major material items were replaced in Ameren Missouri's service territory as a result of an ice storm in 2007.

Wire and Cable - 39 miles
Poles - 218
Cross Arms - 575
Switches - 721
Transformers - 94

Actions, Priorities and Plans for Outages and Service Restoration

Missouri's regulated utilities have formal, detailed plans in place that provide direction for responding to outages when they occur. Each company's plans have been provided to and reviewed by the Missouri Public Service Commission. Having such plans and identified organizational resources and responsibilities is critical to restoring power as safely and as quickly as possible for the greatest number of customers. Such plans may include: planning for shelter and food for lineman coming from outside the area; preparing trailers stocked with necessary materials to be transported to outage areas; developing critical contact information; developing activity checklists; and ensuring customer communication.

Utility infrastructure used to transmit electric power is categorized into two primary systems: Transmission and Distribution. Transmission lines, substations, distribution feeder circuits, sub-feeder circuits and individual consumer services are all evaluated for priority of restoration during an outage. During extended or widespread outages, utilities may call upon the manpower of utilities from nearby communities, states and regions across the country if necessary.

-- Debbie Bernsen and Lisa Kremer work in the PSC's Engineering and Management Services Department

Like a Good Scout – Always Be Prepared

Having an emergency plan in place, like the utilities themselves, is a big first step and can provide you and your family some reassurance if an outage does occur. There are several things customers can do and should know so they can be prepared in case of an electrical outage. They include:

-- Posting emergency telephone numbers in an accessible place. Telephone numbers should include utility phone numbers, family, friends or neighbors that may need to be contacted during an outage, as well as law enforcement and medical personnel.

-- Preparing a 'storm kit'. Such kits could include flashlights and batteries, a battery powered radio, a non-electric powered alarm clock, a supply of bottled water, non-perishable foods that do not require heating, blankets or bedding, first aid supplies and medications, a hand operated can opener, special items for specific family needs such as infants or elderly, hand tools such as a screwdriver, scissors, duct tape, plastic, paper, waterproof matches and bleach. Identification and copies of important documents should also be maintained.

-- Developing a plan for shelter and ensure that all family members are familiar with the plan.

-- Determining if anyone in your household may need to be on the utility company's Medical Registry. Many regulated utilities maintain a medical equipment registry for those customers with significant medical conditions. These registries are typically for customers who are homebound and rely on medical or life support equipment. Upon the customer and physician providing verification of the medical condition, the information will be maintained in the Company's records. In some cases, these customers may be provided with a specific dedicated phone number to report an outage they may experience. While being placed on a utility's medical registry may not guarantee a priority of restoration, it does provide information to the utility regarding unique needs in its service territory that can be used for additional Company outreach efforts.

-- Notifying your electric company if you have installed or plan to install back-up generation of any kind. Portable generators can be dangerous to utility workers and customers if they are not installed properly. The National Electric Code (NEC) requires that the installation of portable generators include a safety disconnection switch that prevents the generator from "back-feeding" power into the utility lines. Such back-feeding could result in damage to the customers or neighbors property or present a safety hazard to a utility working on power lines.