



A Touchstone Energy® Cooperative

West Central Electric Cooperative

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ElectricNews

West Central Electric Cooperative, Inc. ~ Serving our members' needs since 1939

Can I run my home electronics from a generator?

Yes, but be careful. Many generators, especially portables, produce power that is lower quality than the power supplied by your electric cooperative.

Electricity from an electric cooperative is produced at a steady voltage and frequency. That's not always true of generator-produced power. Home improvement advisor Bob Vila points out that a characteristic of electricity known as total harmonic distortion or THD can be a potential problem with high-end or sensitive electronics run on generator power. He says to buy a generator with a THD of 5-6 percent or below if you have sensitive electronics that will need to be powered by a generator.

Computers also are sensitive to extreme heat and cold, so beyond power to the computer itself, keep room temperatures in a moderate range.

Size your new generator right

If you decide to buy a generator, the most important question to ask and answer is what appliances and equipment do you need to keep running during an electrical outage. If your critical needs are few and don't use a lot of watts, then a portable generator is likely what you need. But if your critical needs include a home office, refrigerator, well pump, sump pump, furnace, lights, medical devices and farm needs, you'll need a higher capacity, more expensive standby generator.

Generators are measured by their output in kilowatts.

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Generator basics for power outages

Use care when hooking up emergency power source...

Whether it's a winter storm of deep-freeze cold, heavy snow and ice or a spring wind storm, you may want a backup source of power for emergency outages.

You may opt for a portable generator to power only a few appliances. Or you may buy a more expensive standby or whole house generator to power your entire house 24/7. With either type, safe operation comes first.

Here's some basic information about generators from www.popularmechanics.com to help you make the right choice.

First, don't wait for the weather emergency to buy and install a generator. Do your homework ahead of time, including talking with a dealer or manufacturing rep before buying. That can be difficult if scores of people, like you, are looking at generators when the power's already out.

Equally important as the generator is the fuel to power it. Make sure you have reliable access to the fuel — gasoline, diesel, propane or natural gas — you'll need before you buy.

There are two types of generators for home use: standbys and portables. As Popular Mechanics cautions, it's critical to properly size a generator of either type, and it's wise, once you've done your homework, to talk to a manufacturing representative.

The key in sizing is to select a machine with a wattage that is slightly larger than all simultaneous loads. Add up the running watts of the devices you will use at the same time. Add the startup wattage of the largest motor — that's the operated load liable to come on line with the other loads. Motor wattage is three to five times greater at startup than when running normally. Well pumps, furnace fans and water heaters can definitely strain a generator.

STANDBY GENERATORS

Installing a standby generator is not a do-it-yourself project unless you are a master electrician and plumber. Directly connected to the home's electrical panel, the generator is powered by

natural gas, propane or diesel.

An automatic transfer switch disconnects the home's electrical panel from the utility after a

disruption in service. Once off the grid, the generator starts up. When utility power returns, the switch shuts down the



generator and reconnects the house to the grid. The transfer switch also prevents backfeeding electricity into the grid, which can be lethal to utility technicians working on lines.

Standbys typically have an automatic diagnostic feature: once a week they start up on their own for a short period of time to make sure the system is in working order and ready for continuous use.

Like portable generators, standbys can be noisy. They are rated at 62 decibels measured at 25 feet — about the sound of an idling Harley-Davidson motorcycle. Building codes may specify the generator be at least 5 feet from the house and 5 feet from any flammable materials.

According to Popular Mechanics, you can buy a small standby to run essential circuits at 7 kilowatts to 12 kilowatts

For safety purposes, make sure you have a qualified electrician install a mandatory transfer switch.

for \$3,000 to \$5,000; creature comforts at 12 kw to 20 kilowatts for \$3,000 to \$8,000; and whole house at 20 kilowatts to 48 kilowatts for \$5,000 to \$20,000.

Like any kind of engine, a standby generator will need service after 24 to 48 hours of continuous use. After 10 days of use, change the oil and filter.

PORTABLE GENERATORS

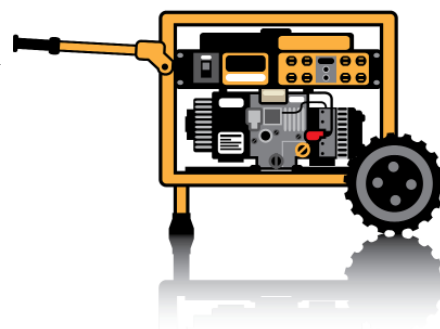
If you're comfortable with running just the basics in your home, and not necessarily all at the same time, then a gasoline- or diesel-powered portable generator may be right for you.

There are two particular risks with portable generators.

One is carbon monoxide poisoning. Locate the generator at least 10 feet from the house to minimize this risk. The second risk is electrical. Don't operate a portable generator with an extension cord with two pronged ends, one for the generator and the other for a wall outlet. This can create a fire and shock hazard. The potential for backfeeding into the grid also exists for portables.

Always test run your portable by wheeling it out to where you intend to run it and starting it up. If you're going to run appliances using generator extension cords, test them with the cords hooked up.

Maintain your generator by starting it up regularly. Add gasoline stabilizer to its fuel to prevent the fuel from chemically deteriorating.



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*This institution is an equal
opportunity provider and employer.*

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Stan Rhodes, Asst. Sect.
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Richard Strobel, Director
Sandra Streit, Director
Jeremy Ahmann, Director

Size your new generator right

From page 1

A kilowatt equals 1,000 watts, which is enough power to light 10 100-watt light bulbs. To find out how many watts an appliance uses, check the generator manual, or better yet the appliance manual, or the bottom of the appliance.

The U.S. Department of Energy at www.doe.gov and its EERE Consumer Guide for Estimating Appliance and Home Electrical Energy Use includes a list of estimated appliance wattages.

To determine what size generator you need, add up the wattages of the various appliances and items you need to power. Count the startup wattage or surge wattage, not the running wattage, which should be listed in the appliance manual or on the device itself. For example, go to www.emergencyelectricalpowersystems.com/wawo.html for wattage comparisons: an 800-watt refrigerator/freezer uses 1,600 watts to start up; a ½-horsepower, 800-watt furnace fan blower requires 1,300 watts to start; and a ½-horsepower, 1,000-watt water well pump uses 2,000 watts to start. Always look for a generator with at least 20 percent more capacity than the total watts needed.

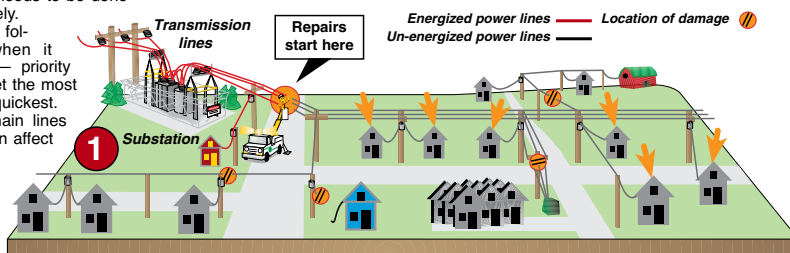
Home improvement advisor Bob Vila points out that top generator manufacturers like GE, Generac and Kohler all have sizing tools on their websites.

Getting back on line

We have come to expect that if we lose electric service it will be restored within a few hours at most. But when a devastating event, like a tornado, ice or snow storm causes major damage to a co-op's system, longer outages cannot be helped. Crews work long, hard hours restoring service, but it's a task that needs to be done methodically to be done safely.

Every electric cooperative follows a basic principle when it comes to restoring power — priority goes to the lines that will get the most people back in service the quickest. This usually begins with main lines from the substations that can affect 200-600 members, and continues out to tap lines, which may affect 30-200 members, and then to individual service lines affecting just 1-5 members.

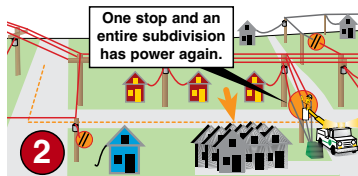
A major storm has just hit this electric cooperative system. Here's a simplified look at how your co-op typically goes about the task of restoring electric service.



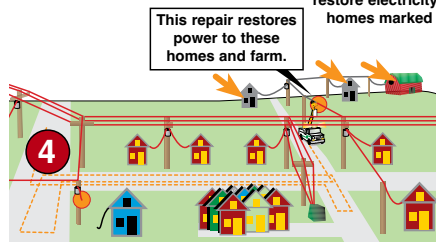
Step 1: The substation is energized but a main distribution line is damaged near the substation, leaving most members without power. All repairs start with the main line. A large number

of members (shown with orange arrows) will have power returned once the main line is fixed. All other repairs would be pointless until this line is restored as it feeds all the other lines.

Step 2: With the main line restored (now shown in red), the line crew can isolate other damage and prioritize repairs. Though a couple of repairs were closer, fixing the line that serves this subdivision down the road will get a larger number of consumers on more quickly.



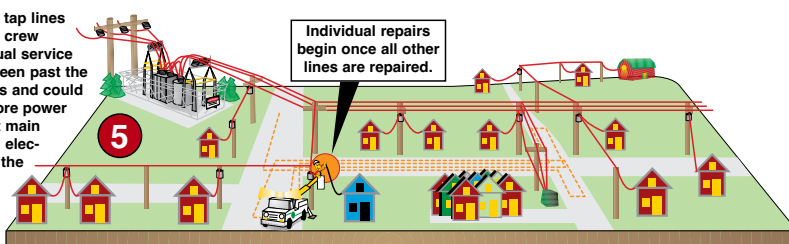
Step 3: Moving back down the road to fix this tap line will restore electricity to the three homes marked with arrows.



Step 4: A smaller tap line serving a number of homes and the farm on the hill is next on the list for the line crew. The move probably doesn't make the folks in the blue house too happy. They've seen the crew driving by their home and working right across the road. They see lights in homes of all their neighbors but they don't have power!

That's because even though electricity is coming to their pole (that happened with the first repair in Step 1), the service line from their pole to their meter is damaged. Individual repairs come after all distribution and tap lines are restored.

Step 5: Only after the tap lines are repaired does the crew start work on individual service lines. The crew has been past the blue home three times and could have stopped to restore power anytime after the first main line was repaired and electricity was flowing to the pole nearby. But it's not fair to other members for a crew to spend hours fixing one outage, when the crew can move down the road and restore power to dozens of homes in the same amount of time.



Electric Consumer graphic by Richard G. Biever

Planting trees or putting up a fence this spring?

Make sure to call 1-800-DIG-RITE before you dig.



Building an energy-efficient home?

Now is the time to invest in savings

With the improving economy, we're seeing more cooperative members move forward in building new homes. There's a lot to research! One priority: look for ways to build the most energy-efficient home you can afford because the investment you make will save you money in

issues? If you have to install a septic system, will the soil accommodate an absorption field or sewage lagoon?

LOCAL CLIMATE — This is a huge factor in the comfort and energy efficiency of any building. Visit the Energy Star website to determine the



WCE currently offers several different rebates to members installing energy-efficient equipment. Check our website at www.westcentralelectric.coop for current rebate program details and rebate forms.

the long run. Even with our affordable utility rates — compared to many other states — energy costs are bound to increase, so an energy-efficient home is a smart investment.

You'll find all kinds of planning tools and energy-efficient house designs online. One tool that will help you in the design process (or with an existing house) is the home energy scorecard at www.doe.gov. Search for home energy score. It's a national rating system developed by DOE that reflects the energy efficiency of the home's structure and heating, cooling and hot water systems.

Planning an energy-efficient home requires a whole-house approach. As DOE points out, your house is an energy system, with interdependent parts that can affect the performance of the entire system.

Your best bet is to hire an experienced designer who considers the whole-house approach from the get-go. This designer can apply computer models to plans as they are developed to arrive at the most cost-effective and efficient solutions.

Some variables to consider:

SITE CONDITIONS — The West Virginia University Extension Service poses these critical questions: Is the soil suitable for lawns and gardens without a lot of amendments? Is there a flood hazard? What's the potential for erosion? Are there potential slope, drainage, high water table and stability

proper amount of insulation levels for the zone where you are building your new home. Find this information at https://www.energystar.gov/index.cfm?c=home_sealing.hm_improvement_insulation_table.

APPLIANCES AND HOME ELECTRONICS

— Chances are you'll start fresh with new appliances and even some electronics in your new home. Since a home's appliances and electronics account for about 20 percent of its energy bill, you'll want to buy Energy Star products where possible: They use 10-15 percent less energy and water than other models. Also plan so that electronics that can be turned off when not in use are grouped together so that you can plug them into power strips. That way you can turn off the power strip and save time and energy.

INSULATION AND AIR

SEALING — The more insulation the better. This is one area where you don't want to skimp. For Iowa and northern Missouri, insulate your attic to R-49; for areas farther south, including Oklahoma, Energy Star recommends R-38 or 12 to 15 inches of insulation. The University of Missouri Extension recommends R-49 for ceilings, R-18 for walls, R-25 for floors over crawl spaces, R-19 for crawl space walls, R-8 for slab edges and R-11 for basement walls. These are minimum values.

When it comes to wall insulation in particular, remember, it will be a whole

lot easier to install at the time of construction than later. You can choose between insulating panels, insulating masonry and foam.

As for type of insulation, go to <http://energy.gov/energysaver/articles/types-insulation> for an overview of what's available. Doug Rye, energy advisor to many cooperatives, recommends cellulose for attics. For information from the North American Insulation Manufacturers Association on how much insulation you'll need for your climate zone, go to www.naima.org/insulation-knowledge-base/residential-home-insulation/how-much-insulation-should-be-installed.html.

LIGHTING AND DAYLIGHTING

— About 10 percent of a home's energy goes for lighting. Design so that natural light on the east, south and west are utilized. Plan on light-emitting diodes (LEDs) and compact fluorescents lighting (CFLs) to save 75 percent and more in energy costs.

SPACE HEATING AND COOLING

— Probably nothing's more critical to the comfort in your home as its heating and cooling systems. The most efficient heating and cooling option is likely a ground-source heat pump. Though pricey, you can take advantage of tax credits and Take Control & Save rebates to lower the cost. For links to resources covering heat pumps, fans, boilers, furnaces, air conditioners and other equipment, go to <http://energy.gov/energysaver/articles/space-heating-and-cooling-products-and-services>.

WATER HEATING — Heating water accounts for up to 18 percent of your utility bill. For certain, purchase the most efficient water heater you can afford, and look at alternatives to conventional heaters, such as heat pump water heaters.

WINDOWS, DOORS AND SKYLIGHTS

— You can spend a small fortune on these features, which deserve thorough research for best buys. Beyond the actual windows themselves, you can build design features into your new home that will save energy. For example, avoid as many windows on the north as possible. Incorporate passive solar features such as window overhangs, awnings, shutters, shades (www.heatsavershades.com), insulated panels, high-reflective films and landscape plantings that can block summer rays but channel warming winter sunshine into your house. Thoroughly caulk and seal or even the most expensive windows will leak air like a sieve.

You'll also want to factor in lifestyle, family size, comfort zones, even age of the occupants. Preference for building materials — energy efficiency doesn't mean you have to live in a straw-bale or underground house — can be another variable.

Ten features for an energy-efficient home

Advanced house framing — This is a framing technique that uses less lumber and has less waste. The U.S. Department of Energy says advanced framing can lower material costs up to \$1,000 for a 1,200-2,400 square-foot house and can cut labor costs up to 5 percent and annual heating and cooling costs by up to 5 percent.

Cool roofs — Such roofs have reflective material within tiles, shingles, paint, metal and other substances used on roofs. It might be an option for new homes in the warmer climate zones of southern counties of Missouri and Oklahoma.

Exterior doors — When buying a door, look at its energy-performance rating, which tells you how well the door keeps conditioned air inside your home.

Skylights — Skylights can improve a home's heating, lighting and ventilation. DOE recommends they be no larger than 5 percent of the floor area in rooms with several windows and 15 percent of the floor area in rooms with minimal windows.

Window treatments — There are many types of treatments to choose from, but all can reduce energy loss. Insulated drapes can block cold air from seeping inside or air-conditioned air from leaking out. Shutters, awnings, shades and blinds are other treatments worth considering. Here's a source for insulated window shades: www.heatsavershades.com/.

Fans — Fans throughout your home will keep it cool and save money on air conditioning.

Bathroom and kitchen fixtures — Buy appliances and fixtures for these rooms with Energy Star ratings and save money on energy each year.

Exterior colors — A light exterior will keep your home cooler, while a darker color will better maintain heat — your choice, depending on your climate zone.

Insulation — Insulation is a key to keeping conditioned air inside your home. Cellulose, foam, plastic, fiberglass and other materials are available as insulation, with different R-values and applications.

Flooring — Flooring in a new house can save energy, depending on whether you choose hardwood, tile, vinyl or carpet. For example, in colder climates, carpet and rugs can trap heat and keep your home warmer during winter.

From the Boardroom...

Regular meeting of the Board of Directors held December 30, 2014

The meeting was called to order by President Densil Allen. Robert Simmons, Secretary of the Cooperative, caused the minutes of the meeting to be kept. The following Directors were present: Max Swisegood, Clark Bredehoeft, Dale Jarman, Richard Strobel, Densil Allen, Sandra Streit, Jeremy Ahmann and Robert Simmons. Also present were General Manager Mike Gray and general counsel Shawn Battagler. Director Stan Rhodes was absent.

APPROVAL OF AGENDA

After discussion, the agenda was approved.

APPROVAL OF MINUTES

The unapproved minutes of the regular meeting of the board of directors held Nov. 25, 2014, were approved.

REVIEW OF EXPENDITURES FOR NOVEMBER

An itemized list of expenditures for November was presented to the board, and the payment of the bills was ratified.

APPROVAL OF REPORTS

The following November 2014 reports were approved: Operating Report (RUS Form 7) and Comparative Operating Statement including the Financial Statistical Report with month and budget comparisons and statistical data pertaining to operating revenue, expenses, margins, assets, liabilities, and KWH sales; Treasurer's Report and the written monthly Construction, Retirement, Maintenance and Operations Report.

SAFETY REPORT

Gray reported no lost time accidents during the month. He also discussed suggestions regarding modifications to facilities at Oak Grove.

MEMBERSHIPS

The applications submitted for membership in the cooperative were accepted and approved. Directors reviewed a list of requests for termination of membership in the cooperative which, along with their requests that their billings be deducted from their deposits and the remainder, if any, be refunded to them, were accepted and approved.

AMEC REPORT

Gray and Bredehoeft reported on their attendance and reported highlights including discussions regarding election results, the Thomas Hill Power Plant tour with legislators, legislative initiatives, regulatory issues and a Rural Missouri update.

N.W. ELECTRIC POWER COOPERATIVE, INC. REPORT

Gray and Swisegood reported their attendance at the NW board meeting and reported highlights including operations and financials of N.W. and AECL, discussions regarding extension of all requirements contracts, the status of the Chamois Power Plant and the manager's report.

NRECA, CFC AND NRTC VOTING DELEGATES

Voting delegates appointed included: NRECA: Bredehoeft -- delegate, Simmons -- alternate; CFC: Simmons -- delegate, Allen -- alternate; NRTC: Allen -- delegate, Strobel -- alternate.

AMECPAC CORPORATE DONATION

Directors approved a \$500 donation to AMECPAC.

RUS LOANS

Gray presented information on options for refinancing some of the cooperative's RUS loans. After discussion, the board voted to refinance RUS loans through CFC consistent with the terms package recommended by management.

MANAGER'S REPORT

Gray provided his Manager's Report for the month. He reported on the following: The agenda for the Board Retreat, holiday activities, employee recognition banquet planning, phone issues at the headquarters office and the NRECA annual meeting. Directors approved permitting four directors to attend the NRECA annual meeting.

UNFINISHED BUSINESS

None.

NEW BUSINESS

None.

EXECUTIVE SESSION

Directors adjourned into executive session, followed by reconvening to the regular meeting.

MEETING ADJOURNED

FINANCIAL REPORT • Statement of Operations • November 2014

	This month	YTD 2014	YTD 2013
Revenue	2,120,946	23,937,709	23,373,372
Power Bill Expense	1,377,777	14,474,835	14,019,893
Operation & Maint. Expense	191,366	2,305,766	244,302
Depreciation Expense	154,928	1,680,687	1,629,395
Interest Expense	107,634	1,231,345	1,251,857
Total cost of Srv. (Total Expense)	1,831,705	19,692,633	17,145,447
Operating Margins (Revenue less Expenses)	26,678	1,326,103	1,144,133
Other Margins	3,599	117,485	190,283
TOTAL MARGINS	30,277	1,443,588	1,334,416

Potential for outside dangers increases as the weather warms

Warmer weather means heading outside to clean up after winter and enjoy the spring temperatures. With warmer weather, however, the potential for outside dangers increases. Remember to look up and be alert for power lines and other electrical hazards before getting involved in work or play.

"Here at West Central Electric, using proper procedures and safety measures is a matter of life and death," said General Manager Mike Gray. "We take safety seriously at home, too. Accidents happen, but if we educate ourselves and our children, we can keep them to a minimum."

KEEPING KIDS SAFE OUTDOORS

- Never fly a kite on a rainy day or anywhere but an open space. A high point in the sky makes a kite a grounding point for lightning, and kites could easily become tangled in power lines.

- Don't climb trees that are near power lines and poles—evergreens can disguise dangers this time of year.

- Stay far away from power lines lying on the ground. You can't tell if electricity is still flowing through them. If there's water nearby, don't go in it. Water is the best conductor of electricity.

- Obey signs that say "danger" and "keep out" around large electrical equipment, like substations. These signs aren't warnings; they're commands to keep you safe.

- Never climb a power pole.

REMINDERS FOR ADULTS

- If power lines run through your trees, contact West Central's Right-of-Way Coordinator Steve Long at 800-491-3803. Professional tree trimmers with proper protective equipment can trim branches safely.

- Remember that power lines and other utilities run underground, too. Call 811 to have utility lines marked before you start digging.

- Starting that winter cleanup yard work? Sweep dried leaves and debris from outdoor receptacles.

- If they're not already, consider upgrading your outdoor receptacles—or any outlets that could come in contact with water—to ground fault circuit interrupters (GFCIs). GFCIs immediately interrupt power flow when a plugged-in device comes in contact with water. Regardless, keep your outlets and cords dry and covered outside.

- Use only weather-resistant, heavy-duty extension cords marked for outdoor use.

- Don't leave outdoor power tools unattended for curious children or animals to find.

For more safety tips and information, visit SafeElectricity.org.

Sources: *Electrical Safety Foundation International, Safe Electricity*

Net Metering & Interconnection Act

Missouri's net metering act requires retail electric suppliers to make net metering available to customers who have their own electric generation units that meet certain criteria, one of which is that the unit is powered by renewable energy resources.

Net metering is where the customer gets credit for the electricity he/she generates in lieu of electricity supplied by the electric utility. Net metering provides the best of both worlds for consumers who choose to invest in renewable energy technology: they have the security of grid connection, but are also compensated for the excess power they produce that's fed into the grid.

West Central Electric Cooperative, Inc. has a net-metering agreement for interconnection of a distributed generation source. Our policy, agreement and application reflect the standards set by the Net-Metering and Easy Connect Act (ECA).

Net metering is available to customers on a first-come, first-served basis until the total rated generating capacity of the net-metering systems equals 5 percent of the utility's single-hour peak load during the previous year.

Simple interconnection procedures that standardize interconnection for all Missourians are necessary to promote the use of renewable energy in Missouri. The ECA makes it easier and more cost-effective for Missourians to connect small renewable energy systems to the grid.

West Central Electric Cooperative, Inc. supports sound renewable energy. We just ask that our members do their homework before spending thousands of dollars to add solar, wind or any type of renewable energy source to their home.

For more information, contact our Higginsville office at 800-491-3803 or 816-565-4942.