



**Cuivre River Electric Cooperative**

A Touchstone Energy® Cooperative 

# **Member Handbook** *and* **Energy Guide**





# Cuivre River Electric Cooperative

A Touchstone Energy® Cooperative 

**800-392-3709**

**cuivre.com**

**For emergencies/outages, call 24 hours a day**

## **PAYMENT REMITTANCE ADDRESS**

**8757 Hwy. N, Lake Saint Louis, MO 63367**

## **LOBBY/DRIVE-UP LOCATIONS/MAILING ADDRESSES AND HOURS**

**8 a.m. — 4:30 p.m., weekdays**

**Headquarters, 1112 E. Cherry St., P.O. Box 160, Troy, MO 63379**

**Branch Office, 8757 Hwy. N, Lake Saint Louis, MO 63367**

*Night deposit available at both locations*

*24-hour payment kiosk available at our Troy location*

## *Our Mission*

*To be a progressive leader in the energy industry, empowering employees to serve our members using innovative energy solutions, while safely providing reliable service at the lowest possible cost.*

**This handbook provides information about your cooperative, your electric services, appliance energy use and other topics. We hope it helps you become an educated energy consumer and member.**

# Member Handbook

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# WELCOME

## When you purchase electricity from Cuivre River Electric Cooperative, you are both an electric consumer and a co-op member.

Cuivre River Electric Cooperative (CREC) exists to serve you and provide safe, reliable, affordable electricity and energy services in an environmentally responsible manner.

CREC is one of more than 800 electric cooperatives across the nation who form the largest utility network in the country. CREC also serves the largest membership base in Missouri — over 75,000 families and businesses who share cooperative ownership with you.

As a member, you have access to Co-op Connections®, a discount program to tap into savings at local businesses, local and national pharmacies, at businesses across the region, across the country and online. You will begin to receive a subscription to a monthly member newsletter, the Current Times, which provides news about cooperative programs and official business. The newsletter is mailed to your billing address and printed in conjunction with the Rural Missouri magazine which offers news and features from around the state. If you provided an email address when you signed up for service, you'll also receive CREC Connections, our e-newsletter that is distributed monthly.

### Why is CREC a cooperative?

People in rural Lincoln, Montgomery, Pike, St. Charles and Warren counties formed Cuivre River Electric Cooperative in 1941 to bring electricity to areas which private utilities thought would be unprofitable. USDA Rural Electrification Administration loans encouraged the expansion of electric service to rural areas. All across the country people formed cooperatives to take on the task to provide their own electricity. Early projects were financed by member fees and USDA loans. CREC no longer receives government loans. Our primary lender is the cooperative-owned National Rural Utilities Cooperative Finance Corporation.

### What does it mean to be a cooperative member?

**You can vote.** Your interests as a consumer are part of every decision made at CREC. An annual meeting/

election gives you the opportunity to elect directors, vote on bylaw proposals and learn more about the cooperative. Information about the director nomination process, election and your official meeting notice will appear in the Current Times. Bylaws are available upon request.

As a member, you share ownership in electric lines, equipment, power plants and substations. With neighboring cooperatives you own Central Electric Power Cooperative, and Associated Electric Cooperative — the third largest energy supplier in Missouri.

But when it comes to cooperatives, that's just a beginning. Members enjoy the benefits of all seven cooperative principles (*see below*).

### Cooperative Principles

- 1. Open membership:** Cooperatives are open to all persons able to use their services and willing to accept the responsibilities of membership.
- 2. Democratic control:** Cooperatives are democratic organizations. Members have equal voting rights (one member, one vote) and participate in decisions which affect the organization.
- 3. Economic participation:** Members contribute equally to the capital of their cooperatives. They allocate surpluses, if any, to (1) develop the cooperative and (2) benefit members in proportion to their transactions.
- 4. Autonomy and independence:** Cooperatives are self-help organizations. They enter into agreements on terms that ensure democratic control and maintain the cooperative's autonomy.
- 5. Education:** Cooperatives should educate members, employees, and the general public, especially youth, about democratic principles and the benefits of cooperation.
- 6. Cooperation among cooperatives:** Cooperatives work together at local, national and international levels to serve their members and strengthen the cooperative movement.
- 7. Concern for community:** While focusing on member needs, cooperatives work for the sustainable development of their communities.

# YOUR ELECTRIC BILL

**Your bill** will be sent about the same time each month, within 28-32 days. Occasionally your energy use may be estimated. Your bill may contain the following items:

1. **Service availability charge:** 90¢ a day. This covers the expense of bringing electricity to your home. It does not include energy.
  2. **Residential energy charges:\***  
\$0.1030 per kwh for the First 800 kwhs per billing period  
\$0.0855 per kwh for Over 800 kwhs per billing period
- Dusk-to-dawn light rental:**  
Existing transformer — \$11/month  
Dedicated transformer — \$15/month
3. **Green Power:** You can choose to purchase part of your monthly energy from renewable sources. If you purchase Green Power, a separate monthly

charge will appear on your bill. A 100 kwh block is \$1.00 per block, with a purchase minimum of 1 block = \$1.00 per month (*See page 4 for more*)

4. **Local and state taxes:** Taxes vary by city, county, and predominant use of electricity (*residential, commercial, etc.*).
5. **Power Quality Plus:** Lightning and surge protection equipment is available for you to lease or purchase. When applicable, monthly lease charges appear on your bill.
6. **Operation Round Up:** Your bill is rounded up to an even dollar. Extra pennies are itemized on your bill, and fund the Cuivre River Electric Cooperative Community Trust. Enrollment is automatic, but your participation is voluntary. Your tax-deductible donation is reported to you each January. (*See page 10.*)

## Payment Options

- **Pay online.** Pay with a check or credit/debit card\*\* securely online at **cuivre.com**.
- **Pay using the MyCuivre app.** Pay using the MyCuivre app on your phone or tablet. Learn more at [cuivre.com/app](https://cuivre.com/app).
- **Pay by phone.** Debit/credit card\*\* payments are accepted by phone 24/7.
- **Pay cash nationwide.** Checkout by PayGo allows our members to make cash payments at over 50,000 retail locations including Dollar General, CVS Pharmacy, Walmart and Walgreens.
- **Pay by mail.** Courtesy envelopes are mailed with bills.
- **Pay at either office.** Our lobbies and drive-up windows are open at both locations, 8 a.m. — 4:30 p.m. weekdays.
- **Pay at kiosk.** A payment kiosk is located in the Troy drive-up lane for 24/7 cash/check/credit card\*\* payments.
- **Pay after hours.** Secure night deposit boxes are available 24/7 at both CREC locations.
- **Go automated.** Enroll in AutoPay for hands-free monthly payments.
- **Use Budget Billing.** Avoid seasonal highs and lows with an even monthly payment plan.

**\*\*MasterCard, Visa or Discover cards are accepted at CREC**

# YOUR POWER

**Cooperative-owned power suppliers** are committed to providing reliable, affordable energy while making certain that power production facilities maintain important environmental air and water quality standards. Suppliers include Central Electric Power Cooperative (CEPC) and Associated Electric Cooperative, Inc. (AECI).

- **CEPC** in Jefferson City, Mo., is an electric generation and transmission cooperative and is an independent, locally-owned business. Central is owned by and delivers power to eight distribution cooperatives covering a 22,000 square mile area in central Missouri. To learn more visit [cepc.net](http://cepc.net).
- **AECI**, based in Springfield, Mo., uses a diverse mix of resources to serve member systems in three states, including two coal plants in Missouri; three combined-cycle and three simple-cycle natural gas plants in Missouri and Oklahoma; and 750 megawatts of contracted wind energy from six facilities in Missouri, Kansas and Oklahoma.

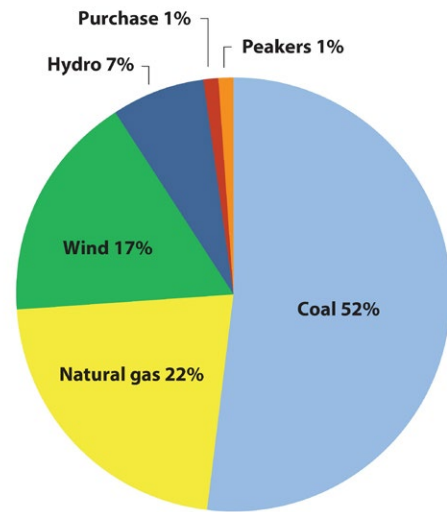
AECI and its six-owner generation and transmission cooperatives, including CEPC, own and operate an integrated, resilient high-voltage transmission system that ensures reliable, affordable energy for members. It also enables AECI to transact business with investor-owned and municipal utilities, electric cooperatives, power marketing firms and regional transmission organizations for the benefit of members.

AECI economically dispatches its resources to serve members, using the lowest-cost first to serve members.

To learn more visit [aeci.org](http://aeci.org).

**Green Power** from renewable resources, such as wind, is also available to members who wish to support renewable energy alternatives. Under the Green Power program, when one megawatt-hour of electricity is generated at the Bluegrass Ridge Wind Farm in northwest Missouri, one renewable energy credit (REC) is created and can be purchased through the program. It represents the environmental benefits of wind energy and is recorded by AECI according to nationally accepted standards. Once purchased by the member, that wind REC is retired. Green Power is more expensive to produce, but can be acquired for you at an additional cost of \$1 per 100 kwh block. A small, monthly charge is added to your bill to cover added generation cost. Green Power is available in blocks of 100 kwhs, and requires a purchase minimum of 1 block and a 12-month commitment.

## 2025 AECI power generation\*



\*YTD July 2025



*Bluegrass Ridge Wind Farm in northwest Missouri*

To enroll in CREC's Green Power Program, contact a billing or member services representative.

# YOUR MONEY

**Cuivre River Electric Cooperative is your business.** In a cooperative, money which remains after satisfying all expenses for furnishing your energy is called “margins.” As a member you have a share in the margins, called **capital credits**. These are divided among all members based on the amount and cost of the electricity each member purchased during the year.

**Capital credits** become the cooperative’s equity and make it possible to secure loans and maintain facilities. When the equity level is high and the cooperative’s financial position is strong, the board of directors may authorize that credits be paid to you. When this happens, you will receive a portion of your credits.

Margins fluctuate from year to year; some years there are none. However, since 1976, capital credits totaling more than **\$145 million** have been paid in cash to members and former members.

Your capital credits are held for you even if you close your account and move from the area. If you are eligible to receive a check we will mail it to you at your last known address. **Please make sure to keep a current address on file to help us send future checks.** If you return to the area and have CREC electric ser-

vice again, or if you have previously been a member, please tell us. This will help keep your entire capital credits file updated.

## Taxes

In 2024, CREC paid nearly \$3.5 million in taxes, primarily to counties and cities. Cooperatives pay many kinds of taxes (real estate, personal property, sales, etc.) to schools, fire, ambulance, law enforcement, and other tax districts. However, a cooperative does not pay income taxes.

The largest tax bills are for real estate, which is defined to include taxes on land, power lines and poles, substation sites, stationary radio, and telephone equipment.

Personal property taxes are paid on line trucks, trailers, trenchers, backhoes, small trucks, service trucks, and cars.

Sales taxes are paid on every purchase from pencils to bucket trucks. CREC also pays state and federal fuel and use taxes, payroll taxes, and others.

Most tax dollars stay in your community for schools, roads, libraries, emergency services, and law enforcement.

*At left, Kristen Turgeon, capital credits coordinator, and Roman Schuette, member support representative, with capital credit checks that are distributed to members in late July each year. Some members have their capital credit refund provided as a bill credit.*



# YOUR ENERGY USE

**Electricity is measured in kilowatt-hours (kwhs).** One kwh represents the amount of energy or work equal to 1,000 watts per hour. A 100-watt light bulb which burns for 10 hours also uses one kwh.

**Your electric meter** is finely calibrated to measure kwhs as they pass through the meter on the way to your heating and cooling systems, home electronics and appliances.

Meter readings are recorded with the help of radio frequency (RF) technology to measure your energy use as efficiently and accurately as possible. More than 75,000 meters transmit readings daily using an RF Mesh system called Gridstream. The meters record in 15-minute intervals, and transmit data to CREC every four hours. This data is used to generate your electric bill.

**Appliance energy use** can vary widely from one family to another. A chart printed in the appendix shows average wattage and operating costs for common home and office appliances.

Heating, cooling, water heating and refrigeration account for most home energy use. Energy labels can help you learn how to save future energy when you purchase a new appliance.



For more information about home energy use, contact our Member Services Department.

## *How much does it cost?*

An appliance serial plate should specify power requirements in watts or amps, and volts. To determine the operating cost for a specific appliance, you can use this information to determine the potential hourly energy consumption in kwhs. Use the average cost of electricity to determine the potential cost.

Calculate cost with this four-step formula:

1. Amps x Volts = Watts
2. Watts x Hours = Watt-hours
3. Watt-hours ÷ 1,000 = Kilowatt-hours (kwh)
4. Kwh x 10¢ = Estimated cost

# YOUR SAFETY

## Emergency Calls

When calling to report an electrical emergency, **give your name, address, telephone number or member account number** to help us find you as quickly as possible. Register up to three phone numbers with your account to help our interactive voice response system automatically identify your incoming call.

To determine if a problem is isolated at your residence, check your fuses and circuit breakers. **After a storm or accident, do not approach downed power lines or trees in power lines.** Call for assistance.

**Reporting a power outage:** All phone lines accept emergency calls 24 hours a day. If phones are busy, it's likely that other members are also out of power. Public safety and health are top priorities, and crews will work to restore electric service as quickly and safely as possible.

Please inform us if life support equipment is in use at your home. You may qualify for our **Medic Alert Registry** (*physician's statement required*).

**Emergency Supplies:** Electricity is more reliable today than ever, but emergencies and power disruptions do occur. It makes sense to have supplies ready for any emergency that can interrupt your daily life. Check the *Appendix* for supplies recommended by

the Missouri State Emergency Management Agency to help you during a prolonged power outage, and for portable generator safety tips.

## Electric Safety

Play it safe. **Remember Missouri's 10-ft. rule** that requires you to notify your electric service provider before working within 10 ft. in any direction from any power line. Call CREC before you work near overhead power lines. Call **8-1-1 three days before digging/excavating** to mark underground lines.

Electric safety programs are available for school and community groups and emergency service providers. Contact the Safety Coordinator or a Member Services Representative to schedule a program or obtain safety information.

## Meter Safety

Your electric meter connects energized power lines to your home. Electric meters are covered with a protective case for safety and sealed for security.

**Any unauthorized person who attempts to remove or tamper with a meter risks personal injury and violates the law.** If your meter requires service or disconnection, trained CREC employees are available to assist. Call to request assistance.

## Remember Missouri's 10-ft. Rule

To help assure your personal safety, Missouri law requires you to notify your electric utility when you work within 10 ft. of a power line.

- Look up for overhead power lines, Stay at least 10 ft. away. Call CREC if you need assistance.
- Do not plant or build on the power line right of way.
- Call 8-1-1 to mark underground utilities before you dig. Stay safe and prevent disruption of your electric, water, sewer, telephone and cable services.

### Should you have an electrical emergency:

- Call our main phone number – **800-392-3709**, then select Option 1 to report an outage or other emergency.

# TREES AND POWER LINES

**Trees are important in our community.** But a tree growing in the wrong place can be a hazard. This is one of many reasons the cooperative trims or removes trees that are close to power lines. When you work with tree or landscape projects, you can prevent electrical safety hazards and power interruptions if you plant trees with these safety measures in mind.



*Contract crews work on removing trees that took down power lines after a summer storm.*

- **Trees and power lines don't mix.** Together trees and power lines create safety hazards and cause frustrating power disruptions. Trees can conduct electricity when they contact power lines. If a child climbs the tree or an animal rubs the trunk, the result can be serious injury. When trees grow near power lines, limbs that blow in the wind also become the main cause of blinking lights and power interruptions.
- **Power lines need a clear path.** Many tree species grow three feet or more each year. CREC strives to remove or prune trees near power lines to maintain a clear 30-ft. wide path on the right of way beneath more than 3,000 miles of overhead power lines.
- **To learn more** about safe tree planting practices near power lines call CREC or visit our web page on vegetation management at [cuivre.com/rightofway](http://cuivre.com/rightofway). Learn about trees that grow well in our area at the Arbor Day Foundation website, [arborday.org](http://arborday.org).

# ENERGY SERVICES

## Power Quality Plus

Storms, unexpected weather events and traffic accidents can send unwanted power surges across electric, telephone and cable lines. To help consumers prevent damage to home appliances and office equipment, CREC offers the option to lease or purchase **Power Quality Plus** equipment.

**Power Quality Plus** can provide two types of protection:

1. Service entrance adapters for your electric meter provide primary protection. External meter base adapters can be easily installed and leased for \$5.95 per month, billed with your monthly energy use. Adapters can also be purchased.
2. Plug strips with up to nine electrical outlets as well as coax cable and telephone line connectors provide added protection for sensitive electronics.

Plug strips and single outlet cubes are available for purchase.

**Power Quality Plus** equipment is backed by an excellent warranty program to help you avoid filing insurance claims if protected devices are damaged when caused by a voltage issue from the power source.

Contact the Member Services Department for product, price, warranty and installation information.



*200 amp meter base adapter*



*Plug strip with coax and telephone connectors*



*1 outlet cube*

# YOUR COMMUNITY

**CREC is committed to your community** and works to improve the standard of living in all the communities it serves. In addition to supporting many community-based events and organizations, the cooperative also sponsors unique outreach programs and activities.

**Educational Programs** about electric safety, energy use and cooperatives are available to school and community groups to help improve public safety, enhance school curriculum and increase energy awareness.

**Operation Round Up** is a community outreach program cooperative members support by contributing the Operation Round Up amount on your monthly electric bill. Enrollment is automatic, but your participation is voluntary. Tax deductible monthly donations range from 1¢ to 99¢ per member, or about \$6 per year. Donations fund the Cuivre River Electric Community Trust, a 501(c)3 organization.

Since the program's inception in 1997 members have provided over \$8 million, just pennies at a time, to help neighbors in need. Volunteers meet each month to award grants specifically for health, youth, education, home weatherization, emergency services and community services. Grant applications for families, individuals, organizations, schools and semi-annual scholarships are available at all CREC offices and at [cuivre.com/operationroundup](http://cuivre.com/operationroundup).

**The Youth Leadership Program** provides opportunities for high school students to learn about democracy, cooperatives and leadership. Through local contests, Juniors can win a trip to our nation's capitol or college scholarships with the **Youth Tour** and Sophomores can participate in the **Cooperative Youth Conference and Leadership Experience** in Jefferson City.

**Economic Development** can have a permanent impact on a community's quality of life. Cuivre River is a powerful business and industry partner, and works to (1) help secure affordable energy rates for business, industry, agriculture and residential consumers and (2) support local economic development efforts.

**Cuivre Cares** is a program in which CREC employees volunteer their time and talents to assist those in need. Cuivre Cares participates in various service projects around the communities we serve throughout the year, such as volunteering with the Salvation Army Bell Ringing, Habitat for Humanity, TREE-House Equine Therapy, raising money for Veterans Coffee Talk, St. Louis Society for the Blind, Five Acres Animal Shelter, hosting blood drives, plus much more.

**To learn more** about community programs contact the Member Services or Communications Department.



*The 2025 Cuivre River Electric Cooperative Community Trust Board, from left, are Rich Barton, Tammy Kneib, vice chair; Blanche Kelly, treasurer; Tammy Miller; Mike Dicken, Tamika Cole, secretary; and Kyle Shell, chairman.*

# APPENDIX

## Electric Appliance Energy Use Guide

Source: TakeControlAndSave.coop

This chart reflects typical wattage (w) and the average cost of electricity in mid-Missouri, 10¢ per kilowatt-hour (kWh).

### Refrigeration

|                                           |       |               |
|-------------------------------------------|-------|---------------|
| Refrigerator/Freezer, 18 cu. ft. ....     | 630 w | ..... 6¢/hour |
| Refrigerator/Freezer, 24 cu. ft. ....     | 720 w | ..... 7¢/hour |
| Refrigerator/Freezer, S/S, 26 cu. ft. ... | 840 w | ..... 8¢/hour |
| Food Freezer, 12 cu. ft. ....             | 650 w | ..... 7¢/hour |
| Food Freezer, 24 cu. ft. ....             | 845 w | ..... 8¢/hour |

### Kitchen Appliances

|                                             |          |                |
|---------------------------------------------|----------|----------------|
| Coffee Maker .....                          | 894 w    | ..... 1¢/hr.   |
| Keurig (2 cups/day, left idle all day)..... |          | \$6.40/month   |
| Deep Fryer .....                            | 1450 w   | ..... 15¢/hr.  |
| Dishwasher.....                             | 1,800 w  | ..... 18¢/hr.  |
| Microwave Oven.....                         | 1,450 w  | ..... 15¢/hr.  |
| Range w/Self-Cleaning Oven .....            | 13,700 w | ... \$1.37/hr. |
| Roaster .....                               | 1,333 w  | ..... 13¢/hr.  |
| Electric Smoker.....                        | 1,500 w  | ..... 15¢/hr.  |

### Home Entertainment

|                                  |       |                    |
|----------------------------------|-------|--------------------|
| DVR (24hrs./day) .....           | 32 w  | ..... \$2.30/month |
| Xbox 360 (4hrs./day) .....       | 180 w | ..... \$2.16/month |
| Playstation 4 (4hrs./day) .....  | 120 w | ..... \$1.44/month |
| Nintendo Wii (4hrs./day) .....   | 19 w  | ..... 23¢/month    |
| 55" LED TV* (4hrs./day) .....    | 67 w  | ..... 80¢/month    |
| 60" LED TV (4hrs./day) .....     | 75 w  | ..... 90¢/month    |
| 65" LED TV (4hrs./day) .....     | 83 w  | ..... \$1.00/month |
| 70" LED TV (4hrs./day) .....     | 92 w  | ..... \$1.10/month |
| BlueRay Player (4hrs./day) ..... | 14 w  | ..... 17¢/month    |

\*TVs consume 75% of total wattage when not in use.

### Heating, Cooling and Water Heating

#### Central Electric Furnace and Blower

|             |          |                |
|-------------|----------|----------------|
| 15 kW ..... | 15,350 w | ... \$1.54/hr. |
| 20 kW ..... | 20,490 w | ... \$2.05/hr. |
| 25 kW ..... | 25,670 w | ... \$2.57/hr. |

#### Air Source Heat Pump (with back-up electric furnace)

|                     |  |            |
|---------------------|--|------------|
| 3 Ton + 15 kW ..... |  | \$2.06/hr. |
| 4 Ton + 15 kW ..... |  | \$2.35/hr. |
| 5 Ton + 15 kW ..... |  | \$2.56/hr. |

#### Ground Source Heat Pump (without back-up electric furnace)\*

|            |         |            |         |            |         |
|------------|---------|------------|---------|------------|---------|
| 3 Ton..... | 46¢/hr. | 4 Ton..... | 67¢/hr. | 5 Ton..... | 81¢/hr. |
|------------|---------|------------|---------|------------|---------|

\*With optional emergency electric back-up heat, add the appropriate kw electric furnace from above.

#### Central Air Conditioner

|            |         |            |         |            |            |
|------------|---------|------------|---------|------------|------------|
| 3 Ton..... | 59¢/hr. | 4 Ton..... | 92¢/hr. | 5 Ton..... | \$1.14/hr. |
|------------|---------|------------|---------|------------|------------|

#### Room Air Conditioner

|                              |           |                       |
|------------------------------|-----------|-----------------------|
| 6,000 Btu/hr .....           | 706 w     | ..... 7¢/hr.          |
| 12,000 Btu/hr. ....          | 1,412 w   | ..... 14¢/hr.         |
| 24,000 Btu/hr. ....          | 2,824 w   | ..... 28¢/hr.         |
| Fan (Ceiling) .....          | 150 w     | ..... 2¢/hr.          |
| Fan (Box) .....              | 200 w     | ..... 2¢/hr.          |
| Fan (Attic) .....            | 370 w     | ..... 4¢/hr.          |
| Fan (Furnace, 1/2 hp).....   | 500 w     | ..... 5¢/hr.          |
| Water Heater .....           | 4,500     | ..... \$1.80/4 hrs.   |
| Heat Pump Water Heater ..... | 550/4,500 | ... 22¢/\$1.80/4 hrs. |

### Laundry

|                      |         |               |
|----------------------|---------|---------------|
| Washing Machine..... | 512 w   | ..... 5¢/hr.  |
| Clothes Dryer .....  | 5,500 w | ..... 55¢/hr. |
| Iron .....           | 1,008 w | ..... 10¢/hr. |

### Home Office

|                                  |       |                    |
|----------------------------------|-------|--------------------|
| Laptop/Desktop (4hrs./day) ..... | 650 w | ..... \$7.80/month |
| Laser Printer.....               | 400 w | ..... 4¢/hr.       |

### Medical Equipment

|                           |        |               |
|---------------------------|--------|---------------|
| Nebulizer.....            | 1000 w | ..... 10¢/hr. |
| Oxygen Concentrator.....  | 460 w  | ..... 5¢/hr.  |
| Sleep Apnea Machine ..... | 200 w  | ..... 2¢/hr.  |

### Miscellaneous

|                                         |         |               |
|-----------------------------------------|---------|---------------|
| Air Purifier .....                      | 250 w   | ..... 3¢/hr.  |
| Table-top humidifier.....               | 177 w   | ..... 2¢/hr.  |
| Dehumidifier .....                      | 390 w   | ..... 4¢/hr.  |
| Electric Blanket.....                   | 177 w   | ..... 2¢/hr.  |
| Hot Tub Heater.....                     | 6,000 w | ..... 60¢/hr. |
| Hot Tub or Pool Filter Pump (1hp) ..... | 1,800 w | ..... 18¢/hr. |

## Emergency Supplies

Source: Missouri State Emergency Management Agency

These supplies can support you following a prolonged power outage, tornado, winter storm, flood or earthquake. The list can be adjusted to meet your personal needs, but chances are you'll find most of these items useful.

- Canned, dried or freeze-dried food, two-week supply
- Powdered milk, especially for young children
- Plenty of drinking water; seven gallons/person will last about two weeks for drinking purposes
- Battery powered radio with fresh batteries
- Flashlights with fresh batteries
- Can opener
- Toilet tissue
- Pick, shovel, crowbar
- First aid supplies and important medications

### Food Storage Tips

Rotate canned foods, using older supplies for your family meals and replacing them with new cans. Don't store canned foods for longer than one year.

Store water in a cool, dark place. Periodically empty the supply, clean the containers, and refill. Store some halazone or iodine tablets for water purification. Liquid laundry bleach (chlorine) may also be used; follow instructions carefully.

# APPENDIX

## Food Safety Tips

Source: USDA Food Safety and Inspection Service

- Keep freezers cold as long as possible by leaving doors closed. Check the freezer thermometer when power comes back on. If the freezer temperature is 40°F or below, or if food contains ice crystals, the food is safe to refreeze. If there is no thermometer, check each package.
- Keep the refrigerator door closed as long as possible. Food should be safe as long as power is out no more than four hours. Discard perishable foods that have been above 40°F for two hours.
- Never taste food to determine its safety.
- Discard items that contact raw meat juices.
- Partial thawing and refreezing may reduce the quality of some food, but it will remain safe to eat.

**General Rule for Refrigerated Food:** As long as the power is out for less than two hours, foods will be safe.

|                          |                                            |
|--------------------------|--------------------------------------------|
| <b>Refrigerated Food</b> | <b>Held above 40°<br/>more than 2 hrs.</b> |
|--------------------------|--------------------------------------------|

**Fresh, thawed or cooked** ..... Discard  
meat, poultry, seafood, egg  
products, lunchmeat, soup,  
casserole, stew, pizza

**Soft cheese** ..... Discard  
Hard cheese ..... Safe  
Processed cheese ..... Safe  
Grated cheese ..... Safe  
Shredded or low-fat cheese ..... Discard

**Milk, cream** ..... Discard  
Sour cream, yogurt ..... Discard  
Baby formula (opened) ..... Discard  
Butter, margarine ..... Safe

**Fresh fruits, cut** ..... Discard  
Fresh fruits (uncut), dried fruits ..... Safe  
Canned fruits, juice ..... Safe

**Peanut butter** ..... Safe  
Jelly ..... Safe  
Relish, olives, catsup, mustard ..... Safe  
Taco, barbecue and soy sauce ..... Safe  
Mayonnaise products ..... Discard if above 50°  
for over 8 hrs.  
Worcestershire sauce ..... Discard  
Vinegar-based salad dressing ..... Safe  
Creamy-based dressings (open) ..... Discard  
Spaghetti sauce (open) ..... Discard

|                          |                                            |
|--------------------------|--------------------------------------------|
| <b>Refrigerated Food</b> | <b>Held above 40°<br/>more than 2 hrs.</b> |
|--------------------------|--------------------------------------------|

**Bread, rolls, muffins** ..... Safe  
Waffles, pancakes, bagels ..... Safe  
Pies (fruit) ..... Safe  
Refrigerator biscuits, rolls, dough... Discard  
Fresh or cooked pasta ..... Discard  
Cream filled pastries and pies ..... Discard

**Vegetables, raw** ..... Safe  
Vegetables, cooked ..... Discard  
Vegetable juice (opened) ..... Discard  
Greens, pre-cut ..... Discard  
Baked potatoes, salad ..... Discard  
Fresh mushrooms, herbs, spices ..... Safe

**General Rule for Frozen Food:** Food that contains ice crystals and feels refrigerator-cold is safe to refreeze, but taste or quality may degrade. Food that thaws and stays above 40° F more than two hours may need to be discarded.

|                    |                     |                                       |
|--------------------|---------------------|---------------------------------------|
| <b>Frozen Food</b> | <b>Ice crystals</b> | <b>Held above<br/>40°F for 2 hrs.</b> |
|--------------------|---------------------|---------------------------------------|

Beef, lamb, pork, poultry ..Refreeze .....Discard  
Fish, shellfish .....Refreeze .....Discard  
Casseroles, stew, soup .....Refreeze .....Discard  
Milk .....Refreeze .....Discard  
Eggs, egg products .....Refreeze .....Discard  
Ice cream, frozen yogurt ...Discard  
Cheese, hard .....Refreeze .....Refreeze  
Cheese, other types .....Refreeze .....Discard  
Fruit, fruit juice .....Refreeze .....Refreeze\*  
Vegetables, veg. juice .....Refreeze .....Refreeze\*\*  
Breads, rolls .....Refreeze .....Refreeze  
Muffins, bagels .....Refreeze .....Refreeze  
Custard or cheese filled .....Refreeze .....Discard  
pastries and pies  
Pie crust, bread dough .....Refreeze .....Refreeze  
Flour, cornmeal, nuts .....Refreeze .....Refreeze  
Waffles, pancakes .....Refreeze .....Refreeze  
Frozen meals, pizza, etc. ...Refreeze .....Discard

\*Discard if mold, yeasty smell develops

\*\*Discard after 6 hrs.

# APPENDIX

## Generator Use and Safety

Before acquiring a generator consider how you will use it, the kW capacity required to meet your needs, maintenance requirements, and safe installation and operation.

Generators can be a convenient source of power during construction projects and after severe storms that could disrupt power for an extended period. There are two primary types of generators: portable and standby.

**Portable generators** are small, more affordable models available at many hardware stores. These units will not usually supply enough energy to run an entire home, but may allow key appliances (refrigerator, space heater) to function. They can help meet emergency needs for people who rely on a steady power supply for life support equipment or critical business functions.

All appliances and electrical equipment used with a portable generator must be plugged directly into the unit. The generator must be placed outdoors in an open area to prevent carbon monoxide exposure hazards.

Portable generators commonly range in size from 5.5 to 8 kW, with models up to 17.5 kW available. (*Capacity may also be stated in watts: 1,000 Watts = 1 kW.*) Large models may be capable of running the most necessary appliances, but rely on a fuel tank you must refill. They have a limited run time unless you have more fuel on hand. Fuel storage, handling and stability are safety concerns.

**Standby generators** are larger units available from electrical supply stores. They may be able to turn on automatically when a loss of power is detected through an Automatic Transfer Switch. They range in size from 10 kW to 45 kW or larger. Many use natural gas or propane and require no short term refueling by the homeowner. This reduces concerns about fuel supply and storage.

Standby generators should ideally be installed by licensed electricians. In all cases, Cuivre River must insist that installations meet the National Electrical Code to provide safe operation for both the homeowner and linemen.

**Electrical Safety:** The primary electrical safety concern with either type of generator is “backfeed.” An improperly connected generator can feed electricity backwards from the home to the transformer. A transformer that normally reduces voltage to a safe level for home use (120/240 volts) can increase voltage from a

generator to 7,200 volts or greater, and send it to the power lines. This can be fatal for linemen working to repair power lines. Linemen take great precautions to determine if power lines are de-energized at a work site, but have no way to learn where or when a portable home generator could send deadly voltage into their path.

To prevent potentially fatal injuries and appliance damage, use generators with great care.

### Generator maintenance tips

1. Start the generator each month to check operability.
2. Monitor fuel and oil levels during monthly checks.
3. Store fuel safely, keeping in mind that gasoline loses energy potential over time, making it less effective.

### Generator use tips

1. Check with your electrician and/or the manufacturer of the equipment you will power with the generator to ensure you have the appropriate capacity.
2. Stagger the start-up of items on the generator, beginning with the largest items first.
3. If powering sensitive electronics (computers, TVs) make sure the generator has automatic voltage regulation of at least +/- 10%. Sensitive electronics can fail quickly if low or high engine RPMs result in poor voltage.

### Portable generator safety tips

1. **Plug appliances directly into the generator.** Note the generator wattage capacity to avoid a dangerous overload. Using too many appliances increases the risk of an electrical fire and may damage home appliances connected to the generator.
2. **Have the generator running at full speed before plugging in appliances.** Appliances plugged in prior to starting the generator may be damaged while the generator starts and reaches full power.
3. **Never wire a generator directly to your home’s electric service entrance panel or connect it to a circuit through a receptacle.** A certified electrician should help you obtain proper switches and connections. Portable generators allow you to plug individual items, such as small appliances and power tools, directly into the generator. It is not connected to your home’s electrical wiring and powers only those items.
4. **If the generator is a standby model which requires direct wiring, install a double-throw switch or auxiliary generator panel.** The switch allows

*Continued on page 14*

connection to either the main power source or the generator, but will not allow connection to both at the same time. This switch protects linemen, protects the generator and protects connected appliances from damage that could occur if the generator is running when utility power is restored. If you loan your generator to someone else, they must also have this double throw switch or generator panel and know how to use the generator safely.

5. **Store gasoline safely.** Portable home generators are usually powered by gasoline, which must be handled carefully.
6. **Never operate a generator indoors.** To avoid carbon monoxide poisoning, always place the generator outdoors, and vent generator exhaust to the outdoors.
7. **Always follow** manufacturer's guidelines.

For more information contact CREC's Safety Coordinator.

### Generator Sizing Guide

This load chart can give you an idea of the kW capacity various residential appliances require to start and to run.

| Appliance                                   | Load (kW)     |          | Voltage |
|---------------------------------------------|---------------|----------|---------|
|                                             | Running       | Starting |         |
| 3 Ton AC/Heat Pump                          | 3 kW – 3.6 kW | 14 kW    | 240V    |
| 5 Ton AC/Heat Pump                          | 5 kW – 6 kW   | 20 kW    | 240V    |
| Furnace Fan (1/3 hp)                        | 600 Watts     | 1.8 kW   | 120V    |
| Electric Space Heater                       | 1.5 kW        | 1.5 kW   | 120V    |
| Refrigerator                                | 400 Watts     | 1.2 kW   | 120V    |
| Water Heater                                | 4.5 kW        | 4.5 kW   | 240V    |
| Clothes Dryer                               | 5.5 kW        | 5.5 kW   | 240V    |
| Microwave                                   | 1 kW          | 1 kW     | 120V    |
| Oven                                        | 7.2 kW        | 7.2 kW   | 240V    |
| General Lighting<br>(1,000ft <sup>2</sup> ) | 3 kW          | 3 kW     | 120V    |



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