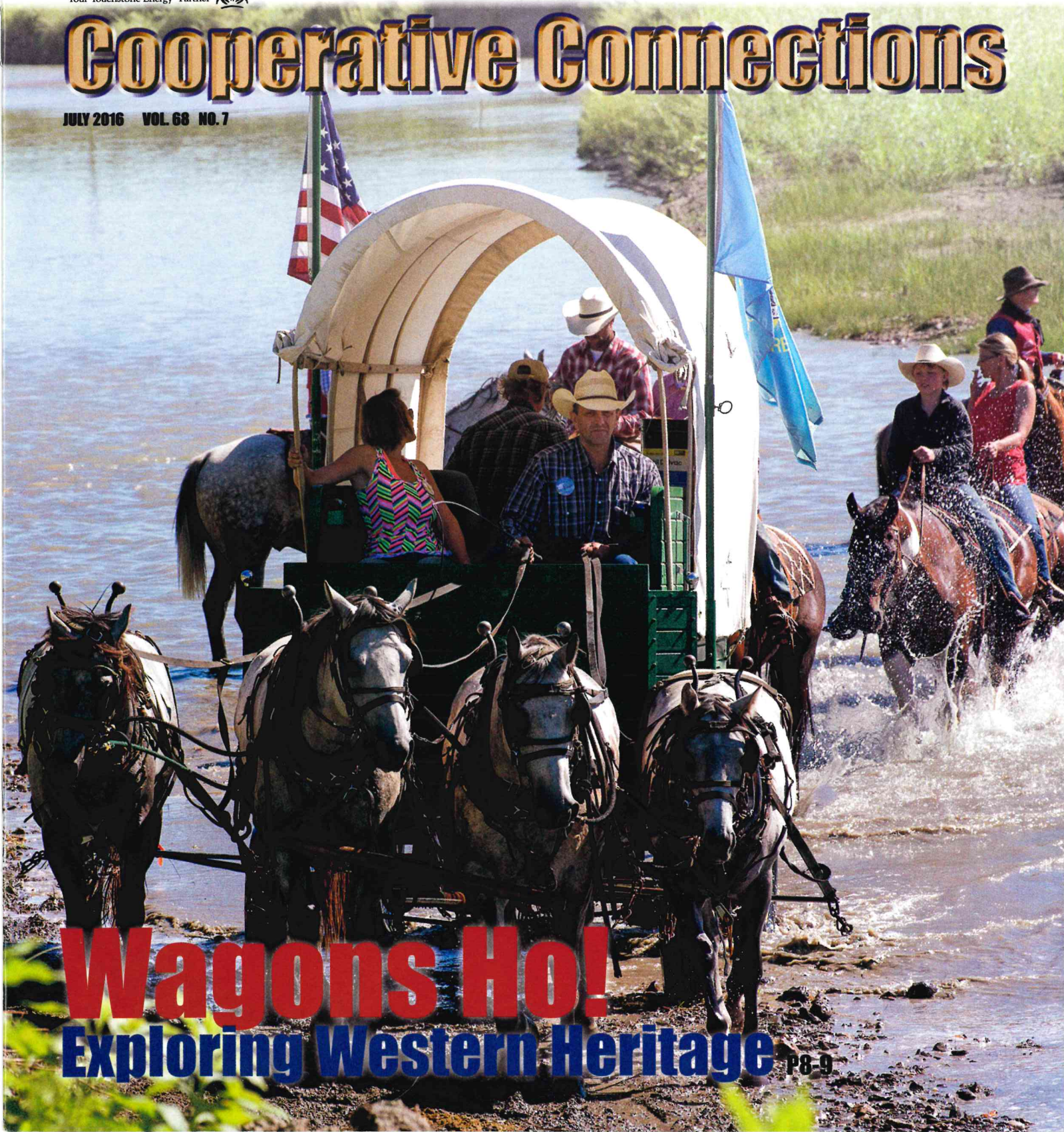


# South Dakota Electric

Your Touchstone Energy® Partner 

## Cooperative Connections

JULY 2016 VOL. 68 NO. 7



**Wagons Ho!**  
**Exploring Western Heritage** P8-9

# Be the light.

No one should go hungry. To help feed those in need in our communities, employees plant a garden each year with the help of local kids, so food pantries can serve fresh vegetables. Our business is providing power and light, but feeding the hungry shines a light brighter than any we can create.



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# South Dakota Electric Cooperative Connections

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Black Hills Electric, Custer, S.D.  
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Brenda Kleinjan, Editor  
Dawn Trapp, Communications Specialist

## Editorial

# Celebrating Independence



**Ed Anderson**  
General Manager, South Dakota  
Rural Electric Association

**Every July**, Americans light up the skies with fireworks celebrating Independence Day.

But the day is about more than just ricocheting aerials and vibrant cascades of sparks.

I share with you these thoughts from a colleague in Arkansas.

When Benjamin Franklin signed the Declaration of Independence, he is credited with saying, "We must, indeed, all hang together, or most assuredly we shall all hang separately." That recognition of the need to work together may also be why Franklin, in 1752, founded the first successful cooperative in the United States, the Philadelphia Con-

tributionship for the Insurance of Houses from Loss by Fire, which still operates today.

The principles behind the Declaration of Independence that form the basis of American democracy also form the basis of cooperatives. A cooperative is owned and democratically controlled by the people who use its services. Each member has one vote regardless of their stake; that is, some members can not buy more control than anyone else. This stands in stark contrast to investor-owned businesses where only shareholders have a vote in how the business is run; and even among shareholders, some have more votes than others depending on their shares of stock.

The Declaration of Independence declared the equality of rights of its citizens and that people had the right to organize to secure their futures when their rights were infringed upon. At the time the Declaration was written, democracy was a pretty untested idea – but the founders of our country were determined to make it work.

So when you celebrate the many liberties and rights we enjoy with our families and friends this year, think about those principles that inspired our Founding Fathers. They also inspired the pioneers who established electric cooperatives – folks who were determined to provide safe, reliable

and affordable power to secure the futures of rural communities.

Your local electric cooperatives have always operated under the principles of democracy and we are dedicated to fulfilling that promise as we serve members today and in the future.



# Air Conditioner and Fan Safety

**Hot weather brings** increased use of air conditioners. Contact with electric current from air conditioners accounts for a significant number of electrocutions and electrical injuries each year.

ESFI recommends that you always contact a qualified, licensed electrician to perform any electrical work in your home, including the installation and services of air conditioning and other cooling equipment.

## Facts and Statistics

- According to the CPSC, 15 percent of consumer-product related electrocutions are attributed to large appliances. These electrocutions occur most commonly while someone is attempting to service or repair the appliance.

- In 2006, an estimated 33,500 injuries were reported to hospital emergency rooms as involving air conditioners, fans, humidifiers, dehumidifiers, air purifiers, and heat pumps. The leading types of injuries were laceration (14,890), contusion or abrasion (6,110) and strain or sprain (4,430).

- In 2006, air conditioning or related equipment was involved in an estimated 7,400 reported U.S. home structure fires, with associated losses of 270 civilian injuries and \$200 million indirect property damage.

- In 2003 to 2006, the 7,000 reported home structure fires per year involving air conditioning and related equipment included 2,400 per year involving central and room air conditioners specifically and 3,700 per year involving fans.

- In 1995 to 2003 (excluding 1999, which was not reported), there were 11.5 electrocution deaths per year involving air conditioners and 4.3 electrocution deaths per year involving fans.

## Cooling Equipment Safety Tips

- Keep safety in mind when selecting cooling equipment for your home.
- Have a qualified, licensed electrician install and service any electrical equipment in your home.
- Have electric-powered equipment inspected and maintained regularly for safety.
- Make sure your equipment has the label showing that it is listed by a recognized testing laboratory.

Source: *esfi.org*

# Tell Congress to Extend the Geothermal Tax Credit Today

Across the nation, electric cooperatives and public power districts help our member-owners save energy and money by promoting the use of geothermal heat pumps. These super-efficient heat pumps can cut home heating and cooling bills by up to 70 percent. Many member-owners install geothermal units with assistance from the geothermal tax credit. The tax credit expires at the end of this year, jeopardizing the continued use of this energy efficient technology.

## COOPERATIVE ACTION NETWORK

Co-ops and their members are asking Congress to extend the credit. Go to the Cooperative Action Network's [action.coop](http://action.coop)

and ask your Member of Congress to extend this credit by supporting H.R. 5167.

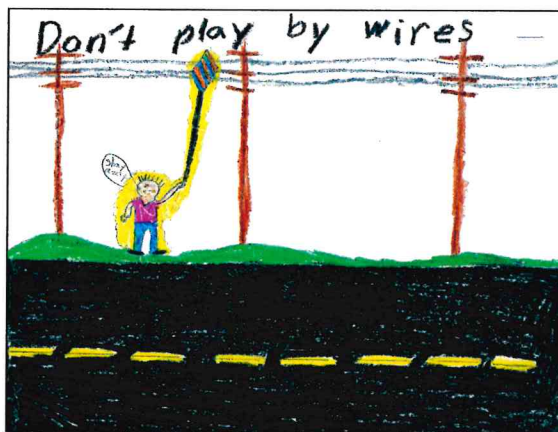
The Cooperative Action Network is the advocacy hub for America's electric cooperatives. It's more important than ever to band together and promote common sense solutions to the problems facing our nation.

Join our growing grassroots army today and become part of our team of more than one million advocates around the nation. By signing up, you'll maximize your voice as you hold elected officials accountable and promote the importance of electric cooperatives across the nation.

The Cooperative Action Network is the grassroots arm of the NRECA — the national service organization for more than 900 not-for-profit rural electric cooperatives that provide electricity to more than 42 million consumers across 47 states. Together, rural electric cooperatives serve 75 percent of the nation's landmass and account for approximately 12 percent of total electricity sales in the United States.

## Kids' Corner Safety Poster

"Don't play by wires."



**Alandra Kontz, 10 years old**  
 Alandra was 10 years old when she submitted this safety poster. She is the daughter of Kelly and Val Kontz, Pipestone, Minn. They are members of Sioux Valley Energy, Colman, S.D.

Kids, send your drawing with an electrical safety tip to your local electric cooperative (address found on Page 3). If your poster is published, you'll receive a prize. All entries must include your name, age, mailing address and the names of your parents. Colored drawings are encouraged.

# Delectable Desserts



## Anzac Biscuits

- 1 cup quick cooking oats
- 3/4 cup flaked coconut
- 1 cup all-purpose flour
- 1 cup sugar
- 1/2 cup butter
- 1 T. golden syrup (honey works)
- 1 tsp. baking soda
- 2 T. boiling water

In a bowl, mix together oats, coconut, flour and sugar. In a small saucepan over low heat, melt butter and syrup. Dissolve soda in boiling water; add to melted butter and syrup. Add butter mixture to dry ingredients. Drop by teaspoonfuls on greased cookie sheets (or baking paper). Bake at 350°F. for 18 to 20 minutes.

**Clarice Roghair, Okaton**

## Apple Dumplings

- 1 apple, cored and cut into 8 pieces
- 1 (8 oz.) can crescent rolls
- Cinnamon
- 2/3 cup sugar
- 8 pats butter
- 1 cup Mountain Dew soft drink

Place 1 apple slice on widest end of crescent roll; roll up starting at wide end. Pinch and seal shut. Place in an 8x8-inch pan. Continue until all slices are used. Sprinkle with cinnamon and sugar. Top with a pat of butter on each. Pour Mountain Dew over all. Bake at 350°F. for 45 minutes.

**Velma Schmitz, Bonesteel**

## Earthquake Cake

- 1 box German chocolate cake mix
- 3 eggs
- 1-1/3 cups water
- 1/2 cup oil
- 1 cup coconut
- 1/2 cup chopped walnuts
- 1 (8 oz.) pkg. cream cheese, softened
- 1 stick butter, softened
- 2 cups powdered sugar
- 1 tsp. vanilla
- 1 pkg. chocolate chips
- Whipped topping

Lightly spray a 9x13-inch pan with cooking spray. Put coconut and nuts in bottom of pan. Mix cake mix according to package directions. Spread batter over nuts and coconut. In a bowl, mix cream cheese, butter, vanilla and powdered sugar until fluffy. Spread over batter. Sprinkle with chocolate chips. Bake at 350°F. for 50 minutes. Cool. Serve with Cool Whip. When this comes out of the oven, it looks like it has exploded (it does not actually explode, so it won't mess up your oven!). That's why it's called an Earthquake Cake. The cream cheese mixture sinks and the nuts and coconut rise.

**Rowena Wipf, Doland**

## Spiced Triple Berry Shortcakes

- Berry Filling:**
- 2 cups sliced strawberries
  - 1 cup blueberries
  - 1 cup raspberries
  - 2 tsp. pure vanilla extract
  - 1/3 cup sugar
  - 1/2 tsp. ground cinnamon
  - 1/4 tsp. ground ginger

**Spiced Shortcakes:**

- 1-1/2 cups reduced fat baking mix
- 3 T. sugar
- 3/4 tsp. ground cinnamon
- 1/2 tsp. ground ginger
- 6 T. fat free milk
- 2 cups thawed fat free whipped topping

For filling, mix berries and vanilla in large bowl. Mix sugar, cinnamon and ginger in small bowl. Sprinkle over berries; toss to coat well. Let stand 30 minutes to allow berries to release their juices, stirring occasionally. For the spiced shortcakes, mix baking mix, sugar, cinnamon and ginger in large bowl. Add milk; stir to form a soft dough. (If necessary, knead dough in bowl to incorporate dry ingredients.) Drop dough by 6 spoonfuls onto sprayed baking sheet. Bake at 425°F. for 10 to 12 minutes or until golden brown. Cool slightly on wire rack. To serve, split warm shortcakes. Place 1 shortcake bottom on each plate. Top each with 2/3 cup berry filling and 1/3 cup whipped topping. Cover with shortcake tops. Makes 6 servings.

*Nutritional Facts Per Serving: Calories 266, Total Fat 2g, Cholesterol 0mg, Sodium 280mg, Carbohydrates 58g, Dietary Fiber 4g, Protein 4g*

**Pictured, Cooperative Connections**

## Rhubarb Cobbler

- 4 to 5 cups diced rhubarb
- 1-3/4 cups sugar, divided
- 1/8 tsp. plus pinch salt, divided
- 1 cup flour
- 1 tsp. baking powder
- 1/2 cup butter
- 1/2 cup milk
- 1 T. cornstarch
- Pinch of salt
- 1 cup boiling water

Spread rhubarb in a 9x13-inch glass pan. Combine 1/2 cup sugar, 1/8 tsp. salt, flour, baking powder, butter and milk. Place over rhubarb. Mix together remaining sugar, cornstarch and pinch of salt. Sprinkle mixture over batter. Pour boiling water over all. Bake at 375°F. for 1 hour.

**Darlene Meyer, Florence**

## Cookies and Cream Pie

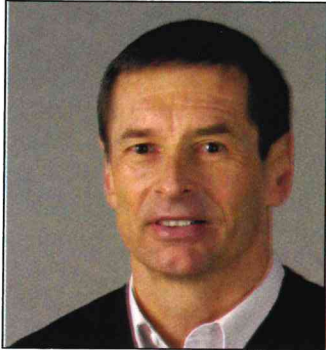
- 1 pkg. white chocolate pudding
- 1-1/2 cups milk
- 8 oz. Cool Whip
- 1 cup chopped regular or Mint Oreos
- 1 graham cracker crust

Beat pudding with milk for 1 minute; let set 5 minutes. Fold in Cool Whip and cookies. Spoon into crust; freeze.

**Debbie Hinman, Carter**

Please send your favorite dessert, salad and garden produce recipes to your local electric cooperative (address found on Page 3). Each recipe printed will be entered into a drawing for a prize in December 2016. All entries must include your name, mailing address, telephone number and cooperative name.

# Select, Size, Locate and Use Ceiling Paddle Fans for Year-Round Comfort, Savings



**Jim Dulley**  
www.dulley.com

**Dear Jim:** I want to install ceiling fans in several rooms. With so many models and prices, what factors should I consider when selecting them? Can I also run them in the winter to lower my heating costs? – Carol B.

**Dear Carol:** People typically think of fans only for summertime comfort and lower air-conditioning costs. Ceiling fans are unique in that they can also reduce your wintertime heating bills with proper use.

Before installing a ceiling fan, it is important to understand how one functions. A ceiling fan does not cool a room like an air conditioner. It actually heats the room whenever it is running. All of the electricity it uses ends up as heat. Always turn the fan off when no one is in a room.

## Ceiling fans are unique in that they can also reduce your wintertime heating bills with proper use.

You feel cooler under a ceiling fan because it creates a downward breeze over your skin. If you feel cooler, you can run your air conditioner less or set its thermostat a few degrees higher without sacrificing comfort. If you do not do this, running the ceiling fan will increase your electric bills.

During winter, reverse the rotation of the fan blades so the air flows up toward the ceiling. Run it on low speed. This gently moves the hotter air, which collects up near the ceiling, throughout the room without creating a chilly breeze. This allows you to set the heating thermostat a few degrees lower for savings.

The simplest way to select an efficient ceiling fan is to pick one which is ENERGY STAR® certified (www.energystar.gov). To be certified, a ceiling fan must meet certain air flow rates per watt used at various speeds. This is similar to miles-per-gallon efficiency ratings for cars.

When selecting a typical lower-cost four- or five-

blade fan, a rule-of-thumb for sizing is (room size vs. diameter of blades): up to 75 sq. ft. – 36 in., 75 to 144 sq. ft. – 36 to 42 in., 144 to 225 sq. ft. – 44 to 50 in., and 225 to 400 sq. ft. – 50 to 54 in.

The ideal height for the fan blades is about eight feet above the floor. A three-inch downrod is included with most fans to provide the proper height. For high ceilings, downrods up to six feet long are used to get the fan low enough. For safety reasons, never have the blades closer than seven feet from the floor.

Many new stylish fans have from only one to six blades with three being common. Pay attention to the pitch angle of the blades to get an idea of how strong a breeze it creates. A steeper pitch moves more air at a slower speed. This often indicates a more powerful and quiet motor.

The newest and most efficient motors are DC (direct current) motors. These are similar in design concept to the variable speed motors in new heat pumps. Some offer up to six speeds and use only 33 watts of electricity.

Most people install a lighting kit under the ceiling fan. Select one with LED lighting. It is not only efficient, but it lasts for many years and most are dimmable.

A model with a hand-held remote control is most convenient to adjust the speed and switch it off when leaving a room. Some new high-tech fans can be controlled by a cell phone with a special fan app.

## Replacement Windows

**Dear Jim:** I do a lot of indoor gardening and I plan to install new efficient replacement windows. I wonder if the low-emissivity coating on the glass will interfere with my indoor plant growth? – Todd K.

**Dear Todd:** Efficient low-emissivity (low-e) glass has become the standard for replacement windows. Although it looks clear, it blocks heat transfer and some ultraviolet (UV) rays both summer and winter.

Since it allows nearly the entire visible spectrum of light through, low-e glass should not adversely affect plants. Some plants actually prefer reduced UV rays, the same rays that fade your furniture.

Send inquiries to James Dulley, Publication Name, 6906 Royalgreen Dr., Cincinnati, OH 45244 or visit www.dulley.com.

## South Dakota PUC Considers Motions on Territory Case

During a June 7 Public Utilities Commission meeting in Pierre, S.D., commissioners considered a series of motions in Docket EL16-013, a petition by Dakota Plains Ag Center, LLC, to have electrical services provided by Northwestern Energy in the service area of Bon Homme Yankton Electric Association, Inc., (BY) headquartered in Tabor, S.D. Dakota Plains wishes to receive electrical services through Northwestern Energy under a provision in South Dakota law that allows electric utilities to serve large loads in the territory of another electric utility if approved by the Commission.

In separate motions, BY asked the commissioners to compel Northwestern to release information BY considers important to a Commission decision in the case and Northwestern asked the Commission to quash a BY subpoena for that information.

Brett Koenecke, representing Dakota Plains, argued that Dakota Plains has the right to use its electricity as it chooses and gain its electric services through the business of its choice. Koenecke also maintained that only information relevant to the case should be considered and BY is requesting the inclusion of information that does not meet the test of relevancy.

Nick Moser, an attorney for BY, argued that BY Electric has the right to motion to compel Dakota Plains to provide any and all information that may play a factor in this case. Moser maintained that every fact needs to be known in order for a decision to be made if the information is relevant. This information would pertain to the services provided by Northwestern to Dakota Plains.

The Public Utilities Commission meeting minutes and recording for the June 7 session are available on the Public Utilities Commission Meeting Archives' webpage at <https://puc.sd.gov/Archives/2016/default.aspx>.

A hearing on this docket will take place on Wednesday, July 13.

## Jaspers Named S.D. Secretary of Agriculture

**South Dakota Gov.** Dennis Daugaard has appointed Mike Jaspers of rural Minnehaha County to serve as South Dakota's Secretary of Agriculture. Jaspers will begin July 5.

"I am very excited to have Mike serve as ag secretary," Daugaard said. "His background in agriculture production, policy and administration makes him a great fit to lead the department."

"I am honored that Gov. Daugaard has given me this opportunity," Jaspers said. "I look forward to working with the men and women who make agriculture our state's No. 1 industry."

A native of northeast South Dakota, Jaspers operates a diversified crop and livestock farm in McCook, Hutchinson and Marshall counties. He received his bachelor's degree in mechanized agriculture from South Dakota State University in 1993.

In addition to operating his farm and holding management positions in several agricultural businesses, Jaspers served in the South Dakota State Legislature from 1997-2005. In 2007, President George W. Bush appointed him state director of USDA-Rural Development, where he served until June 2008.

Jaspers currently serves as vice chairman of the board for Sioux Falls Catholic Schools and is a graduate of the South Dakota Agriculture and Rural Leadership (SDARL) program. He and his wife, Robin, have two children.



**Mike Jaspers**  
South Dakota  
Agriculture Secretary

¢ 50¢ to Protect a Child

### What are Tamper Resistant Receptacles (TRRs)?

Though they look like standard outlets, only TRRs include a built-in shutter system that prevents foreign objects from being inserted. Only a plug that applies simultaneous, equal pressure to both slots will disengage the cover plates, allowing access to the contact points. Without this synchronized pressure, the cover plates remain closed, preventing the insertion of foreign objects.

The cost of installing a TRR in a newly constructed home is only about 50¢ more than a traditional receptacle.

TRRs should only be installed by a licensed electrician.

Existing homes can be retrofitted with TRRs for as little as \$2.00 per outlet.

Be sure to purchase TRRs that have been certified by a nationally recognized, independent testing lab (i.e. UL, ETL, or CSA).

The curiosity of kids knows no boundaries and sometimes leads to dangerous behaviors. Located in practically every room in every house throughout the United States, electrical receptacles present a constant and real danger to these little explorers.

# On the Trail, Time Slows Down and History Comes **Alive**

**F**OR A FEW DAYS EACH SUMMER, PARTICIPANTS IN area wagon trains slow it down a notch as they roll across the prairie, often times retracing portions of the state's history.

Large wagon trains have been organized for the past several years, one in 2014 commemorated South Dakota's 125th year of statehood, tracing a route from the former Territorial Capitol of Yankton, S.D., to the State Capitol in Pierre, S.D., during a 17-day ride.

Others have wound through the state connecting communities via horse- and oxen-drawn conveyances.

"It's our heritage; if we don't pass it on down, it will get lost," said Willie Cowan of Pierre who has participated in several wagon trains and is an organizer of the upcoming one-day event planned for the Dakota Western Heritage Festival Sept. 16 in Fort Pierre.

When Cowan and his wife, Loretta, started participating in wagon trains about 10 years ago, it took him a bit to recall all the steps involved in relying on horsepower.

"The skills I had learned as a boy took a while to remember," said Cowan.

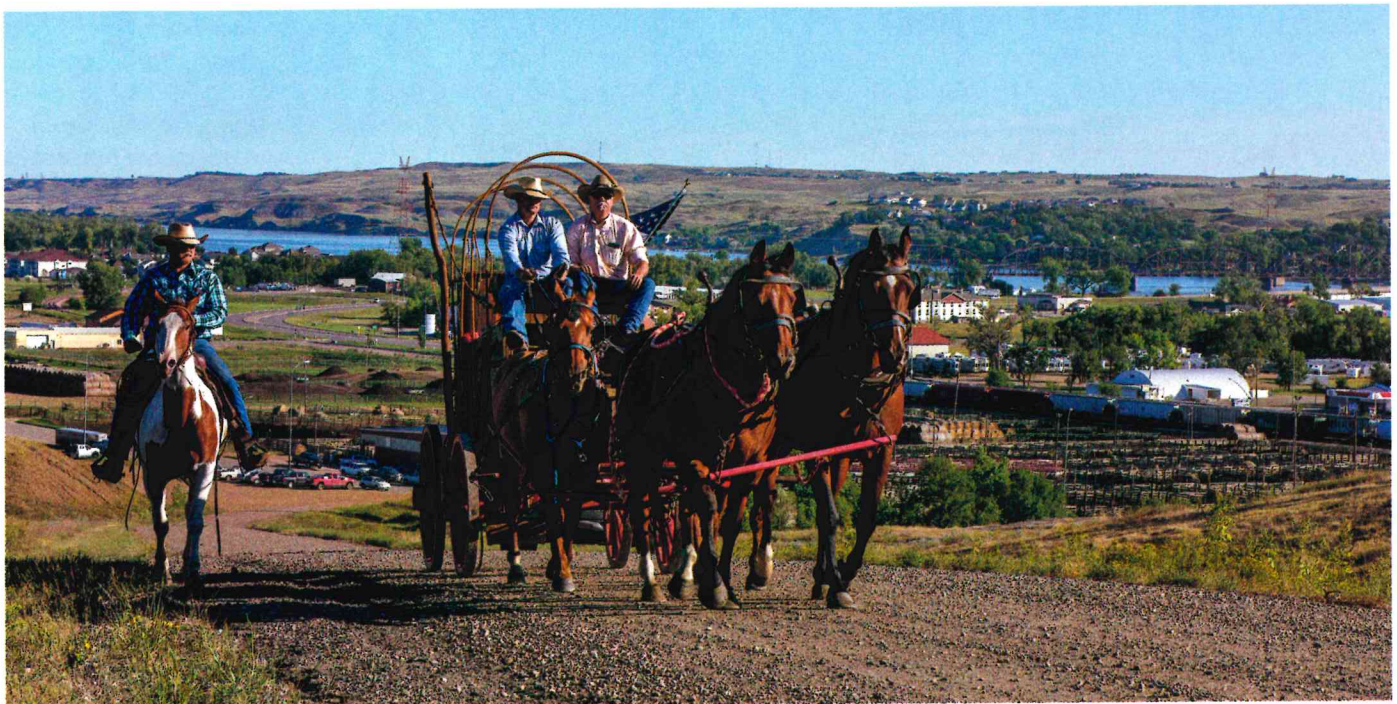
But those skills came back as did the realization that when on the ride, one is focused on the task at hand – caring for the horses, looking for obstacles and moving toward one's destination at a speed that allows one to really observe and enjoy the surroundings.

For the Cowans, who are no strangers to rodeo and western life (Willie himself was a state high school saddle bronc champion in the mid-1950s), the wagon trains are a family affair. Their children and grandchildren also participate, either with one of the family's various wagons or as outriders with the train.

By  
Brenda  
Kleinjan







“The most enjoyable part is the kids and observing what they get out of the experience,” said Willie.

As one rolls along the prairie behind the team of horses, Cowan says one ponders things.

“The first thing you wonder is how they got across the prairies with water. They had to follow creeks and rivers,” noted Cowan.

“It gives you a greater appreciation for what those people went through,” said Loretta.

Willie says he has nothing to prove with his wagons and favors modern improvements over authenticity on his wagons.

“The ride on our big wagon is like a Cadillac, not bone jarring,” said Willie. Nylon ropes rather than leather are less likely to break and cause problems, rubber tires smooth out the ride compared to the jarring of wooden wheels.

For the Cowans’ daughter, Colleen McCurrin, the entire process of the wagon train builds a better understanding of western history.

“It’s part of the heritage; it’s how we got here. The people who settled the area arrived in wagons of many shapes and doctor buggies – everyone hitched up a team to do their jobs,” said McCurrin.

The variety of wagons that show up for a wagon train ride bring that heritage to life, and help participants envision days gone by.

For Loretta, the wagon trains helped realize a

life-long dream.

“It was always a dream of mine to stand in the wagon ruts of the freight trains that ran from Fort Pierre to Deadwood,” said Loretta. In the Fort Pierre to Deadwood ride a few years back, she achieved that dream.

**“It’s a tangible thing –  
you can touch the  
history.”**

Her daughter is quick to expand on the comment.

“It’s a tangible thing – you can touch the history,” said Colleen.

And one connects.

“It takes a bit of getting away from needing to get from point A to point B in

three hours; on the rides, you might have 10 days,” said McCurrin. “You have to gear down and change mentality.”

The Cowans note that another feature of wagon trains is the camaraderie amongst the participants.

“Everyone helps everybody. If your outfit breaks down, they’re all there to help,” said Willie.

In 2015, the Dakota Western Heritage Festival took participants through a buffalo farm near Fort Pierre and over to the Scotty Phillips Cemetery, named for the Scottish-born rancher and state politician who is credited as “the man who saved the buffalo.”

The 2016 train will take a different trek exploring history to the southwest of town.

The public is welcomed to attend the Dakota Western Heritage Festival. There are limited opportunities for individuals to ride with a wagon.

**Above:** The Fort Pierre Livestock cattle yard is visible in the background of this photo taken during the wagon train at the Dakota Western Heritage Festival. **Opposite page:** Willie Cowan of Pierre drives a wagon in a train in western South Dakota. **Cover:** A wagon and outriders make a crossing of a waterway during a wagon train in western South Dakota.

# Cyber Counter-Attack

## How Co-ops Keep Hackers Away from the Electric Grid

By Paul Wesslund

**A**BOUT 3:30 IN THE AFTERNOON LAST DEC. 23, operators at three electric utilities halfway around the world in western Ukraine found themselves not to be solely in control of their computer terminals. Someone from outside the utilities had taken over the controls and started opening circuit breakers at more than 27 substations, cutting power to more than 200,000 customers. Thousands of fake calls clogged utility switchboards, preventing people from phoning in to get information about the outage. Utility workers switched to manual operations and it took three hours to restore power.

That's not a movie plot. And if you missed or

forgot about that news report from last year, people who run electric utilities have not. Attention to cyber security at electric utilities has been growing fast in the past few years and the Ukraine attack pushed that trend into overdrive.

"It's garnered a lot of attention from the federal government and throughout the industry," says Barry Lawson, associate director of power delivery and reliability for the National Rural Electric Cooperative Association (NRECA).

A big part of Lawson's job is helping the nearly 1,000 electric co-ops in the country understand digital-age dangers and ensuring that they know



how to protect and secure the power supply, electric grid and co-op members and employees from Internet mischief.

Electric co-ops are showing they do understand the importance of cyber security, says Cynthia Hsu, cyber security program manager for business and technology strategies at NRECA.

“Electric co-ops were the first utilities to test and use the U.S. Department of Energy’s cyber security self-assessment tool,” says Hsu. “They are often on the cutting edge of implementing best practices to improve their cyber security capabilities.”

While the Ukraine cyber attack has been studied in-depth by U.S. utilities and the Federal Department of Homeland Security, most analysts see a large-scale attack by hackers as unlikely to succeed in this country. The reports characterize the Ukraine attack as extremely well planned and coordinated, but not technically sophisticated.

The Ukraine incident actually started as early as March of last year, when utility workers received e-mails with Microsoft Office documents, such as an Excel spreadsheet, from the Ukrainian parliament. But the emails were not from the Ukrainian parliament. When workers followed the email instructions asking them to click on a link to “enable macros,” malicious malware embedded in the documents – called BlackEnergy 3 – secretly infected the system. Among other capabilities, BlackEnergy 3 can enable an adversary to observe and copy all the keystrokes made on the infected computers, giving hackers passwords and other login information needed to access the utility’s operations control systems.

Defenses against that kind of attack are pretty basic and you’ve probably even heard the warnings yourself – don’t click on any links or attachments unless you were expecting the message to be sent to you. Utilities are increasing their efforts to enhance and formalize their security plans, processes and controls. New cyber security standards require upgraded levels of training for utility operators, multiple layers of security to shield operational and control systems from the Internet and even stricter procedures for visitor access (physical and electronic) to control rooms. These utilities are regularly audited for cyber security compliance and regulators, such as the Federal Energy Regulatory Commission (FERC) and the North American Electric Reliability Corporation (NERC), can levy strict penalties for not following standards.



NRECA’s Lawson describes an example of one type of security technology, a security token – a physical device an operator would carry with them that changes their password every 30 seconds.

NRECA has also worked with the Department of Energy to develop software called Essence, which constantly monitors a utility’s system for even a microsecond of irregularity that might indicate some kind of hacking attempt or malware is interfering with the system.

With all that attention to keeping the electricity flowing, Lawson says there’s another major cyber-threat receiving high-priority attention from electric co-ops – protecting data and critical utility information to avoid identity theft of members’ information. He says some co-ops hire firms to periodically try to hack into their computer systems, so the co-op can identify and fix the holes in their security.

Lawson describes a scary world of cyber terrorists, organized crime, issue-oriented groups or just kids in their basement seeing what kind of trouble they can cause on the Internet. At the same time, he compares those high-tech threats to risks posed by hurricanes or the everyday need for paying attention to safety at the electric cooperative. Co-ops regularly use risk assessment and management practices to balance a wide range of threats to their systems.

“Physical security and cyber security are becoming just another cost of doing business,” says Lawson. “You’ll never be 100 percent secure and all you can do is try your best to keep up with the bad guys. It’s a fact of life in these days and times we’re living in.”

*Paul Wesslund writes on cooperative issues for the National Rural Electric Cooperative Association, the Arlington, Va.-based service arm of the nation’s 900-plus consumer-owned, not-for-profit electric cooperatives.*

# Innovation

## Could Put Coal Use in a Whole New Light

By  
Paul Wesslund

**S**INCE COAL GENERATED MORE THAN HALF THE nation's electricity as recently as 10 years ago, that share has fallen to one-third as of last year. The decline of coal generation will continue as new environmental rules are set in place and prices for natural gas remain relatively low.

So it's curtains for coal, right? Not so fast.

The Environmental Protection Agency's Clean Power Plan still calls for more than one-fifth of our electricity to come from coal by its 2030 target date.

Even President Obama's Energy Secretary sees a future for coal.

"We are talking about a progressively lower-carbon future, but we have not abandoned coal as part of that future," Secretary Ernest Moniz told the Lexington (Kentucky) Herald-Leader in April. "Coal can play a major role in a low-carbon economy."

A role for coal is important, says Daniel Walsh, senior program manager for generation, environment and carbon at the National Rural Electric Cooperative Association (NRECA). Citing the huge coal supply in the U.S., Walsh sees coal as a key

to energy security. "We need to use this valuable resource we have in this country."

Achieving that brighter future for coal could depend on huge improvements to a technology called carbon capture.

Carbon capture seeks to solve a top environmental complaint about coal, which is that burning it releases carbon dioxide, a greenhouse gas that has been linked to climate change. Grabbing the carbon dioxide before it leaves the power plant would keep it out of the atmosphere.

Carbon capture is still a developing technology, with 15 test plants in the world and seven more coming online by 2017, according to an international industry group. One of the main holdups to that development is that the technology is expensive to build and operate. Really expensive.

Running carbon capture equipment at a power plant uses about one-third of the electricity produced by that power plant.

As daunting and inefficient as that sounds, Moniz cites \$6 billion spent on carbon capture research by the Department of Energy as proof of his



optimism. NRECA's Walsh believes in the power of researchers to make carbon capture costs competitive.

"We will continue to see innovation," says Walsh. "We're going to be successful."

One reason for that sunny outlook comes from a 35-year trend of finding cleaner and more efficient ways to burn coal. Since 1970, electric utilities in the U.S. have reduced pollution regulated by the federal Clean Air Act by more than 60 percent. Techniques have ranged from washing coal with water, to burning it at lower temperatures to release less harmful chemicals, to large and expensive flue gas desulfurization equipment, also called scrubbers.

Over the decades, those technologies improved, says Kirk Johnson, NRECA senior vice president for government relations. He says those improvements can be a model for carbon capture.

"We didn't start out with scrubbers that achieved a better-than 90 percent reduction in sulfur dioxide removal, but we ultimately got there," says Johnson. "The future has got to be in continued research."

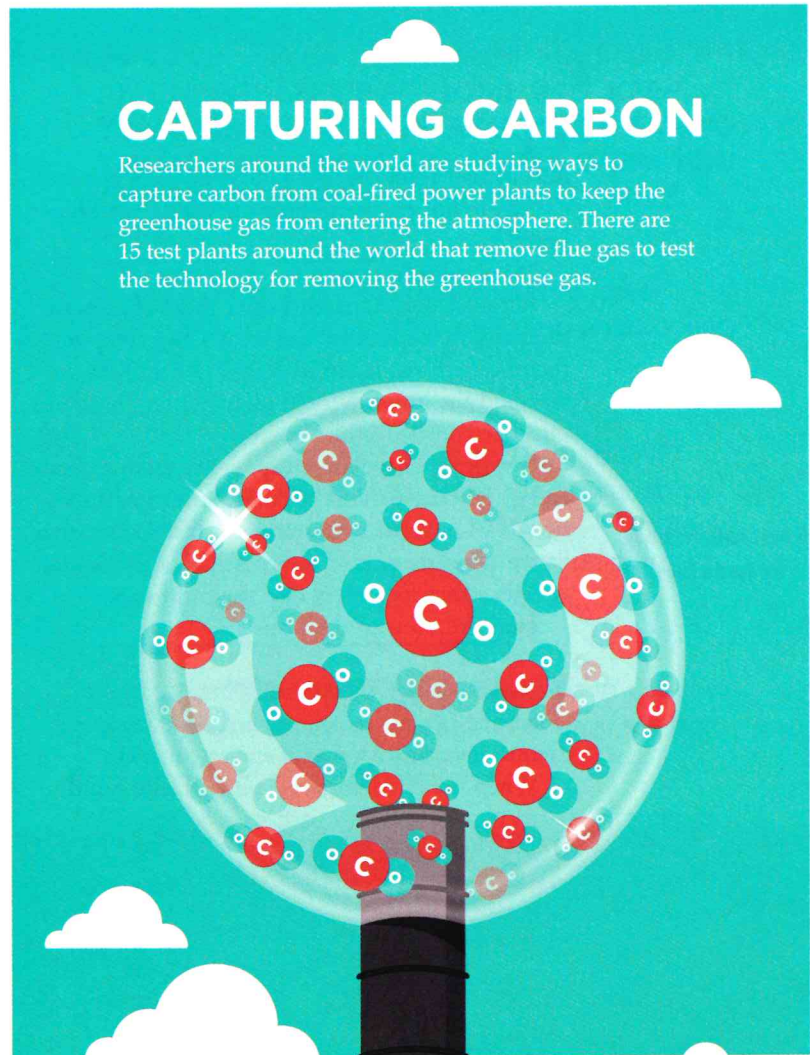
Electric co-ops launched a drive to that success with the April ground breaking for the Integrated Test Center in Wyoming. Operation is scheduled for summer 2017. The state of Wyoming is funding \$15 million of the center, which will be built at the site of the existing Dry Fork Station, a coal plant owned by Basin Electric Cooperative, a regional co-op based in North Dakota. Another \$5 million of support will come from another regional co-op, Denver-based Tri-State Generation and Transmission Association, and \$1 million from NRECA.

The test center aims to advance carbon capture research by focusing on a looming question about the technology – once you capture the carbon dioxide, what do you do with it? The test center focus will be on a new area of carbon capture work that is even changing the name of the technology.

For years the process has been referred to as CCS – for Carbon Capture and Storage (or Sequestration). Geologists looked for underground formations where the carbon dioxide could be stored safely and permanently. An evolving terminology refers to CCU, for Carbon Capture and Utilization, or CCR, for Carbon Capture and Recycling.

The idea is that one way to make carbon capture more cost-effective would be to find commercial or other uses for the carbon dioxide that produces a better return on investment than burying it underground. Researchers at the test center will be able to use carbon dioxide from the Dry Fork Station to run tests. Among the first researchers, the test center will host teams competing for part of \$20 million

in XPRIZEs on ways to use carbon dioxide (CO<sub>2</sub>) at power plants. The XPRIZE Foundation supports innovation in several areas, and its recent call for entries reads, "Do you have what it takes to turn CO<sub>2</sub> emissions into valuable products?"



There's reason to believe that lofty challenge might succeed at the test center, says NRECA Communications Manager John Pulley. He describes the plans as bringing researchers in to develop their ideas in the "real-world" setting of a power plant.

"Once you have a facility like this in place that will allow people to test their great ideas, the sky's the limit," he says. "People might look at coal in an entirely new light."

*Paul Wesslund writes on cooperative issues for the National Rural Electric Cooperative Association, the Arlington, Va.-based service arm of the nation's 900-plus consumer-owned, not-for-profit electric cooperatives.*

# Electrifying Ways

## to Help Kids be Smart Energy Users

**D** ID YOU TURN OFF THE LIGHTS IN YOUR ROOM?"  
"We're not paying to heat the whole neighborhood!"

"Save some hot water for the rest of us!"

Across America, parents utter these phrases to their children countless times each day. Despite their best efforts, it can be tough to help kids understand the importance of saving energy – and to put that knowledge into action.

Few people have more experience talking about energy efficiency than the communication professionals who work at America's electric cooperatives. So we asked them how they persuaded the toughest audience they face every day: their kids.

Here are a few of their tips.

### Deputize an "energy enforcer"

Several parents recommended deputizing children to investigate wasteful energy practices.

When her children were young, Heidi Smith

of Tideland Electric Membership Corporation in North Carolina let them take turns playing the role of energy deputy.

Each week, the appointed child was given a badge and empowered to seek out energy waste and hold the offending party accountable.

"My youngest son took it so seriously that he once cracked open the bathroom door and reached in to turn off the light on his dad after he decided daddy had been in there long enough," Smith said. "All five of my children are now grown, but they continue to practice energy efficiency in their own lives."

Diana Hersch of Hancock-Wood Electric Cooperative in Ohio offered a slightly different twist on the same idea. She suggests offering your little energy deputies a bounty for finding leaks, drafts and other wasteful energy practices around the house.

Their progress can be tracked with stickers on a calendar and when the kids reach their goal, they

By Justin LaBerge



can be rewarded with a sheriff's badge or another small toy of their choice.

### Penalty stroke

In addition to teaching her patience and discipline, the rounds of golf Jim Nimmo plays with his 11-year-old-daughter have turned into valuable lessons in energy conservation.

Nimmo, of Farmers Electric Cooperative in Texas, has started adding a penalty stroke to his daughter's score for each time he's had to turn off her bedroom light and fan since their last round.

"It gives new meaning to the term penalty stroke," Nimmo said. "We don't have much of a problem anymore." No word on whether his daughter is allowed to return the favor.

### The invisible hand

If your child's hand never seems to find its way to the light switch, perhaps the invisible hand of the free market can help them out.

Katie Kothmann Haby of Medina Electric Cooperative in Texas said her dad used to fine her 25 cents for every light bulb she and her siblings left on in their rooms. For her ceiling fan with four bulbs, that was a costly mistake.

"It taught us that electricity really did cost money since we had to pay when we didn't conserve it," Haby said. Though her daughter is only 2 years old, Haby says she plans to use the same approach when she's older.

### Game Theory

Other creative strategies to inspire kids to do their chores and keep peace in the home can be found in *The Game Theorist's Guide to Parenting*. The recently published book, written by Paul Raeburn and Kevin Zollman, shows how Game Theory can be applied to many of daily transactions of parenting, such as sharing, dividing, collaborating and compromising.

No matter what the approach, talking to kids about energy use is sure to pay dividends. They might not always follow through, but they'll be learning important lessons about the value of energy and the importance of conservation that can last a lifetime.

*Justin LaBerge writes on consumer and cooperative affairs for the National Rural Electric Cooperative Association, the Arlington, Va.-based service arm of the nation's 900-plus consumer-owned, not-for-profit electric cooperatives.*

## FIVE QUICK TIPS TO SAVE ENERGY

**AN ENERGY-EFFICIENT HOME WILL KEEP YOUR FAMILY COMFORTABLE WHILE SAVING YOU MONEY. THERE ARE SIMPLE STEPS YOU CAN TAKE TO SEE LOWER ENERGY BILLS.**

Install a programmable thermostat to lower utility bills and manage your heating and cooling systems efficiently.

Plug home electronics, such as TVs and DVD players, into power strips; turn the power strips off when the equipment is not in use -- TVs and DVDs in standby mode still use several watts of power.

Take short showers instead of baths and use low-flow showerheads for additional energy savings.

Check to see that windows and doors are closed when heating or cooling your home.

When washing clothes, a simple switch from hot water to cold water can save a great deal of energy. Consider air drying or even line drying to save even more household energy.

Source: [energy.gov](http://energy.gov)

## Regional Dateline

**June 26-September 4**  
 Sunday Services at Oahe  
 Chapel, 8 a.m. CDT, Pierre, SD  
 605-773-3458

**July 1-3**  
 Supermoto, Sturgis, SD  
 605-720-0800

**July 1-3**  
 Wahpeton Oyate 149th Annual  
 Wacipi, Agency Village, SD  
 605-698-8217

**July 1-4**  
 97th Annual Black Hills Round-  
 up, Belle Fourche, SD  
 605-723-2010

**July 4**  
 Street Bandits Car Show  
 City Park, Gregory, SD  
 605-654-2017

**July 7**  
 Naja Shrine Circus  
 Fairgrounds, 6 p.m.  
 Faith, SD, 605-342-3402

**July 7-10**  
 Hot Harley Nights  
 Sioux Falls, SD, 605-334-2721

**July 8**  
 Naja Shrine Circus  
 Fairgrounds, 6 p.m.  
 Hettinger, ND, 605-342-3402

**July 8-10**  
 Badlands Astronomy Festival  
 Interior, SD, 605-433-5243

**July 8-10, 15-17, 22-24**  
 Laura Ingalls Wilder Pageant  
 De Smet, SD, 800-776-3594  
 or 800-880-3383



PHOTO COURTESY OF HOWARD BICH

To have your event listed on this page, send complete information, including date, event, place and contact to your local electric cooperative. Include your name, address and daytime telephone number. Information must be submitted at least eight weeks prior to your event. Please call ahead to confirm date, time and location of event.

## Events of Special Note

**June 24-25**  
 South Dakota Senior Games,  
 Mitchell, SD, Barb Pierkowski  
 at 605-995-8048

**July 8-9**  
 South Dakota Senior Games  
 Madison, SD, Bernie  
 Schuurmans at 605-270-3327

**July 9**  
 Naja Shrine Circus, Rodeo  
 Grounds, 2 and 7 p.m.  
 Deadwood, SD, 605-342-3402

**July 9**  
 Dare to Dream Conference  
 Convention Center  
 Watertown, SD, 605-361-3171  
 www.sdparent.org

**July 10**  
 Naja Shrine Circus, Rodeo  
 Grounds, 2 p.m., Philip, SD  
 605-342-3402

**July 12-17**  
 Corn Palace Stampede Rodeo  
 Mitchell, SD, 605-770-4919

**July 12-17**  
 Deadwood Three Wheeler  
 Rally/Brothers of the Third  
 Wheel National Trike-In  
 Deadwood, SD, 605-717-7174

**July 14-16**  
 JazzFest, Sioux Falls, SD  
 605-335-6101

**July 14-16**  
 Black Hills Corvette Classic  
 Spearfish, SD, 605-759-4530

**July 15-17**  
 Stampede Rodeo, Burke, SD  
 605-830-0304

**July 15-17**  
 Horse and Buggy Days  
 Sisseton, SD, 605-698-7261  
 sissetonchamber@  
 venturecomm.net

**July 16-17**  
 39th Annual Festival in the  
 Park, Spearfish, SD  
 605-642-7973

**July 22-23**  
 South Dakota Senior Games  
 Brookings, SD, Traci Saugstad  
 at 605-692-4492

**July 22-23**  
 2016 Rock-N-Rumble  
 Motorcycle Rally, Yankton, SD  
 605-665-3636

**July 22-23**  
 Storybook Land Festival  
 Aberdeen, SD, 605-626-7015

**July 29-31**  
 25th Annual Honey Days  
 Bruce, SD, 605-627-5671

**July 30**  
 RSVP Outdoor Vendor and  
 Craft Show, 9 a.m. to 5 p.m.  
 In conjunction with Crazy Days  
 Mitchell, SD, 605-995-8440

**July 30**  
 Black Hills Music & Food  
 Festival, Rapid City, SD  
 605-645-1880

**August 5-6**  
 South Dakota Senior Games  
 Yankton, SD, Kristi Hauer  
 at 605-665-4685 or Tracy  
 Grotenhuis at 605-668-5238

**August 13**  
 South Dakota Senior Games  
 Huron, SD, LaRon Klock at  
 605-353-8533