
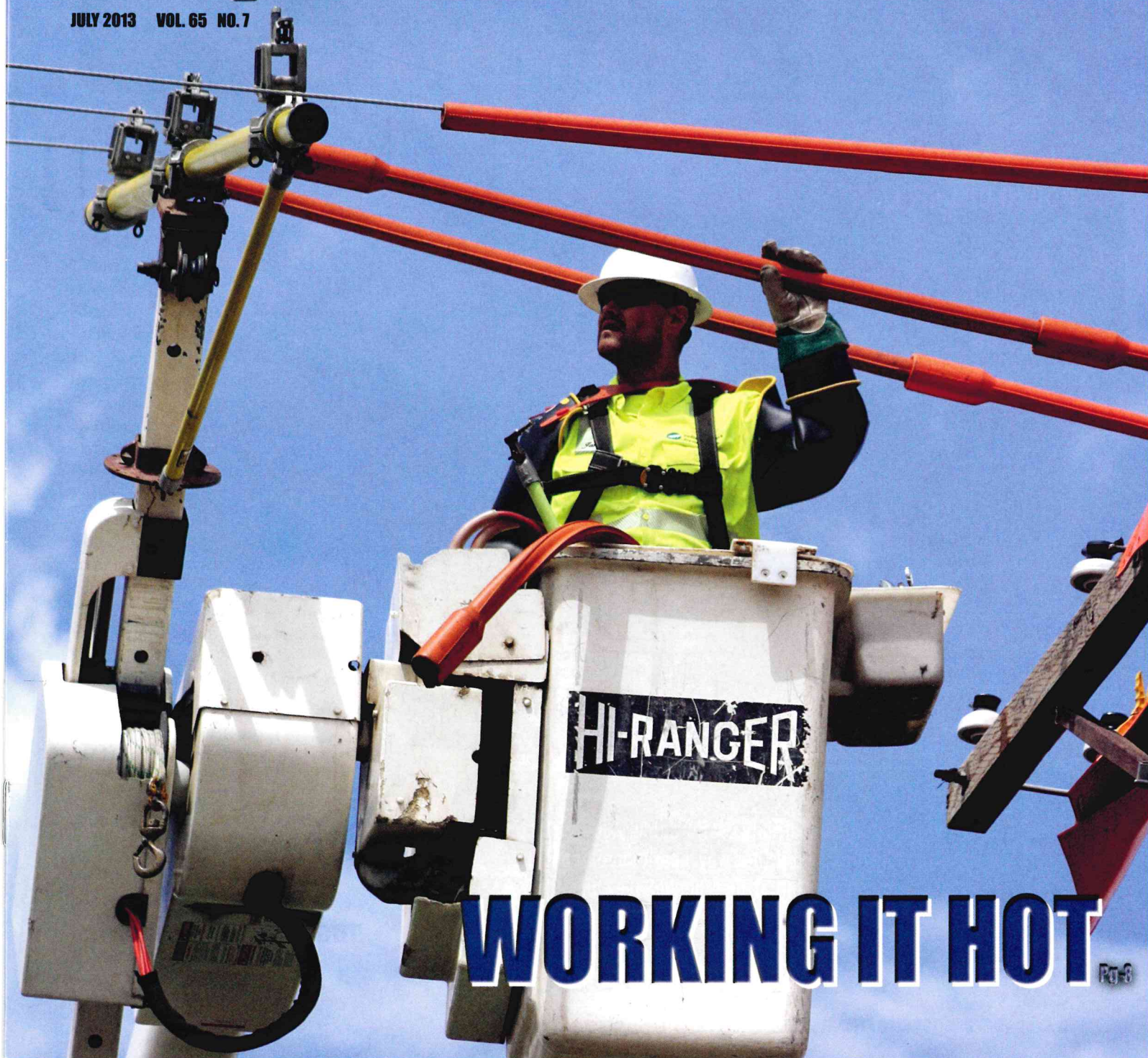


# South Dakota Electric

Your Touchstone Energy® Partner 

## Cooperative Connections

JULY 2013 VOL. 65 NO. 7



# WORKING IT HOT

PG-6

# HERE'S SOMETHING THAT WILL REALLY WAKE YOU UP.



## ELECTRICITY

1936.....	5¢
2013.....	11¢

**INCREASE..... 2X**

BASED ON AVERAGE COST PER KILOWATT HOUR

## POUND OF COFFEE

1936.....	14.5¢
2013.....	\$7.43

**INCREASE..... 51X**

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# South Dakota Electric Cooperative Connections

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Charles Mix Electric, Lake Andes, S.D.  
Cherry-Todd Electric, Mission, S.D.  
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Codington-Clark Electric, Watertown, S.D.  
Dakota Energy, Huron, S.D.  
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East River Electric, Madison, S.D.  
FEM Electric, Ipswich, S.D.  
Grand Electric, Bison, S.D.  
H-D Electric, Clear Lake, S.D.  
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Rosebud Electric, Gregory, S.D.  
Rushmore Electric, Rapid City, S.D.  
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Traverse Electric, Wheaton, Minn.  
Union County Electric, Elk Point, S.D.  
West Central Electric, Murdo, S.D.  
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## Editorial

# Appliance Standards Save



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

**Every so often**, the U.S. Congress approves a new round of energy efficiency standards for various appliances and equipment – refrigerators, air conditioners, clothes washers and the like. These standards, which began in 1975 and have been revised over the years, will have saved consumers an estimated \$900 billion on their utility bills by 2020, according to the U.S. Department of Energy.

For example, a refrigerator purchased today uses one-third of the energy a 1973 model did – but with 20 percent more storage. Since 1990, new clothes washers use 70 percent less energy and dishwashers 40 percent less.

From microwaves to light bulbs to commercial walk-in freezers, these standards have benefited family budgets – and the environment. Since 1987, 1.9 billion tons of carbon dioxide emissions have been avoided. That's the same as taking 373 million cars off the road for one year.

**These standards, which began in 1975 and have been revised over the years, will have saved consumers an estimated \$900 billion on their utility bills by 2020, according to the U.S. Department of Energy.**

In fact, despite an increase in U.S. population from about 233 million in 1983 to nearly 316 million today, larger homes, rampant personal computer and large-screen TV use and more electronic devices vying for

wall outlets, per-home energy consumption has steadily declined in the past 30 years, thanks to advances in energy efficiency for space heating, air conditioning and major appliances, according to the U.S. Energy Information Administration.

As American homes add more and more electronic gadgets – about 25 on average, according to the Consumer Electronics Association – every little bit helps when it comes to saving energy. You can be sure that the South Dakota Rural Electric Association will continue to work with state and federal lawmakers to ensure standards for appliances and equipment are reasonable and beneficial for electric co-op consumer-members.

Visit [TogetherWeSave.com](http://TogetherWeSave.com) or [EnergySavers.gov](http://EnergySavers.gov) to learn more about saving energy and money.

## Doodle 4 Google



**A Sioux Falls** fifth-grader represented South Dakota in a nationwide contest for doodles of a popular Internet search engine's logo.

Chloe Loving, a fifth-grader at St. Michael School in Sioux Falls, competed nationwide in the Doodle 4 Google contest, an annual program that invites K-12 students in the United States to use their artistic talents to think big and redesign Google's homepage logo for millions to see.

More than 130,000 entries were submitted in the contest. From that, 250 state finalists – one per state in each of five age groups – were selected. Loving had the highest ranked doodle among South Dakota's entries, thus earning her the state finalist title.

South Dakota's K-3 winner was Kade B.'s "Rainforest Discovery."

Loving was the grades 4-5 winner for South Dakota.

The South Dakota grades 6-7 winner was Chelsea B.'s "My best day ever at the beach."

The grades 8-9 winner for South Dakota was Jaymon L.'s "My first goal."

Allison W.'s "Fantabulastic" doodle, featuring hot air balloons and an amusement park, was the grades 10-12 winner.

The national winner was a teenager from Wisconsin who drew her "Best Day Ever" as the day her dad came home from serving in the military overseas.

To see all the entries in the contest, go to <http://www.google.com/doodle4google/index.html>.

Chloe Loving wrote about her doodle, "I love swimming! I also love animals, but you don't see a lot of sea creatures in South Dakota! That's why scuba diving would be the best day ever! I could swim in the ocean anywhere I wanted and witness all kinds of sea creatures all around me!"

## Fourth of July Pet Safety Tips

**For many people**, nothing beats lounging in the backyard on the Fourth of July with good friends and family – including the four-legged members of the household. While it may seem like a great idea to reward Rover with scraps from the grill and bring him along to watch fireworks, in reality some festive foods and products can be potentially hazardous to your pets. The ASPCA Animal Poison Control Center offers the following tips:

- Never leave alcoholic drinks unattended where pets can reach them. Alcoholic beverages have the potential to poison pets. If ingested, the animal could become very intoxicated and weak, severely depressed or could go into a coma. Death from respiratory failure is also a possibility in severe cases.
- Do not apply any sunscreen or insect repellent product to your pet that is not labeled specifically for use on animals. Ingestion of sunscreen products can result in drooling, vomiting, diarrhea, excessive thirst and lethargy. The misuse of insect repellent that contains DEET can lead to neurological problems.
- Always keep matches and lighter fluid out of your pets' reach.
- Keep your pets on their normal diet. Any change, even for one meal, can give your pets severe indigestion and diarrhea. And keep in mind that foods such as onions, chocolate, coffee, avocado, grapes and raisins, salt and yeast dough can all be potentially toxic to companion animals.
- Do not put glow jewelry on your pets or allow them to play with it. While the luminescent substance contained in these products is not highly toxic, excessive drooling and gastrointestinal irritation could still result from ingestions and intestinal blockage could occur from swallowing large pieces of the plastic containers.
- Keep citronella candles, insect coils and oil products out of reach. Ingestions can produce stomach irritation and possibly even central nervous system depression. If inhaled, the oils could cause aspiration pneumonia in pets.
- Never use fireworks around pets! While exposure to lit fireworks can potentially result in severe burns and/or trauma to the face and paws of curious pets, even unused fireworks can pose a danger. Many types contain potentially toxic substances, including potassium nitrate, arsenic and other heavy metals.
- Loud, crowded fireworks displays are no fun for pets, so please resist the urge to take them to Independence Day festivities. Instead, keep your little guys safe from the noise in a quiet, sheltered and escape-proof area at home.

Source: ASPCA

## Kids' Corner Safety Poster



**"Do not drive your grain auger up by power lines!"**

**Martin Davis,  
9 years old**

*Martin is the son of Tom Davis, Elkton, S.D., and Kalyn Brix, Aurora, S.D. Tom is a member 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.

# Delectable Desserts



## Jane's EZ Summer Dessert

- |   |   |
|---|---|
| 1 (3.4 oz.) box white chocolate instant pudding | 16 oz. Cool Whip                                  |
| 1 (3.4 oz.) box cheesecake instant pudding      | 1 box chocolate graham crackers (3 pkgs. per box) |
| 3 cups milk                                     | 2 Heath candy bars, crushed                       |

Mix puddings, milk and Cool Whip; set aside. Using a 13x9-inch storage container, layer the following: first package of chocolate graham crackers (no need to crush, just place them whole), 1/3 pudding mixture and another layer of graham crackers. Continue until there are three layers of each, ending with pudding on top. Garnish with graham cracker crumbs and/or crushed candy bars. Put in freezer. Take out when needed. Thaw enough to cut easily.

**Julie Rothschild, Scotland**  
**Cooperative Connections**

## Rhubarb Cake

- |                       |                   |
|-----------------------|-------------------|
| 4 cups cut-up rhubarb | 2 cups sugar      |
| 1-1/2 cups water      | 1 yellow cake mix |
| 6 oz. red gelatin     |                   |

Grease a 13x9-inch pan. Spread rhubarb pieces in bottom; sprinkle with red gelatin and sugar. Add water. Prepare yellow cake mix according to package directions; pour over rhubarb. Bake at 350°F. for 40 to 45 minutes.

Note: You may use sugar-free gelatin.

**Laura Reuer, Herrick**  
**Cooperative Connections**

## Peach Delight Pie

- |                                   |                                  |
|-----------------------------------|----------------------------------|
| 1 cup shortening                  | 3 T. butter                      |
| 1/2 cup 7-Up                      | 2-1/2 cups sliced canned peaches |
| 2-1/4 cups flour, divided         | 3/4 cup white sugar              |
| 1/4 tsp. salt                     | 1/4 cup quick cooking tapioca    |
| 1/4 cup firmly packed brown sugar | 1 tsp. lemon juice               |
| 1/4 cup chopped almonds           | 1 tsp. peach flavor brandy       |

For crust, combine 2 cups flour and salt in bowl. Cut in shortening into flour. Blend to form coarse crumbs. Slowly add 7-Up to flour mixture, toss lightly with fork, until dough forms a ball. Divide dough. Rest dough 10 minutes. Roll bottom crust and put in 9-inch pie pan, trim edge even with pan. For crumble mixture, mix together 1/4 cup flour, almonds and butter until crumbly. For filling, combine remaining ingredients; let stand. Layering instructions: Put pie crust in pan, add 1/2 of crumble mixture, add filling, add 1/2 of crumble mixture, add top pie crust. Bake at 425°F. for 10 minutes. Reduce heat to 350°F. and bake an additional 25 minutes.

**Ruth Overby, Melleto**  
**Cooperative Connections**

## Cherry Berry Cheesecake Pie

- |   |  |
|---|--|
| <b>Crust:</b>   | 2 large eggs   |
| 1-1/2 cups ground gingersnap cookie crumbs (about 30, 2-inch cookies) | 3/4 cup granulated sugar   |
| 2 T. granulated sugar   | 1/4 cup all-purpose flour  |
| 1/3 cup melted butter   | 1 T. grated lemon peel   |
| <b>Filling:</b>   | 2 cups pitted fresh cherries and mixed berries (such as blueberries, raspberries and/or sliced strawberries) |
| 1 (12 fl. oz.) can NESTLÉ® CARNATION® Evaporated Milk                 | 3 T. cherry, raspberry or strawberry jam, warmed   |
| 1-1/2 (12 oz.) pkgs. cream cheese, at room temperature                |  |

For crust, combine crumbs and sugar in pie plate. Stir in butter. Press crumb mixture onto bottom and up sides of prepared 9-inch deep-dish pie plate. Bake at 350°F. for 8 minutes. Cool completely on wire rack. For filling, place evaporated milk, cream cheese, eggs, sugar, flour and lemon peel in blender; cover. Blend until smooth. Pour into prepared pie crust. Bake for 30 to 35 minutes or until center is set. Cool completely on wire rack. Refrigerate for at least 3 hours. Arrange cherries and berries on top of pie; drizzle with warmed jam. Tip: 1 (15 oz.) can pitted, dark sweet Bing cherries, drained (about 1 cup), can be used instead of fresh cherries. Yield: 8 servings

*Nutritional information per serving: Calories: 540; Calories from Fat: 260; Fat: 30g; Saturated Fat: 17g; Cholesterol: 135mg; Sodium: 410mg; Carbohydrates: 61g; Protein: 10g; Fiber: 1g; Sugars: 41g*

**Pictured, Cooperative Connections**

## Chocolate Dessert

- |                                   |   |
|-----------------------------------|---|
| 1-1/2 cups flour                  | 4-1/2 cups Cool Whip, divided               |
| 1/2 cup butter or margarine       | 1-1/4 cups powdered sugar                   |
| 1/2 cup chopped nuts              | 2 (3.9 oz.) boxes chocolate instant pudding |
| 8 oz. pkg. cream cheese, softened | 3 cups milk                                 |

Combine flour, butter and nuts. Press into a prepared 13x9-inch pan. Bake at 325°F. for 12 to 15 minutes; cool. Beat together cream cheese, 1-1/2 cups Cool Whip and powdered sugar; spread over crust. Stir together pudding and milk; pour over cream cheese layer. Spread remaining Cool Whip over all. Sprinkle with nuts if desired. Refrigerate. Note: You may use different flavored puddings.

**Lois Hanson, Howard**  
**Cooperative Connections**

## Low Cal Cupcakes

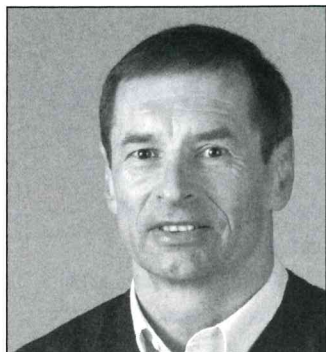
- |   |                                |
|---|--------------------------------|
| 1 box vanilla cake mix or 1 box angel food cake mix | 1 can diet soda (must be diet) |
|---|--------------------------------|

Combine cake mix and soda. Bake as directed on box.

**Lois Sears-Ahrendt, Sioux Falls**  
**Cooperative Connections**

**Please send your favorite 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 2013. All entries must include your name, mailing address, telephone number and cooperative name.**

# How to Insulate Attic Access Cover



**Jim Dulley**  
www.dulley.com

**Dear Jim:** I just had a house built and discovered no insulation on the attic opening cover. Shouldn't the cover be insulated and sealed? If I add folding stairs, how can I insulate them? – Mike M.

**Dear Mike:** Builders don't always insulate and seal the attic access opening cover, but it certainly should be added for energy savings. Most often, just a scrap piece of plywood or drywall is cut somewhat close to the correct size and placed in the opening, resting on a strip of molding. That type of cover's insulation value is less than R-1 and it leaks air like a sieve.

Because the attic access is often in the ceiling of a bedroom closet or a hallway, the air leakage and heat loss/gain are seldom noticeable.

During summer, attic temperatures can get extremely high and the air is humid, so you don't want it in your living space. During winter, the heated air in the house, because it is less dense, tends to leak up and out.

The simplest fix is to attach insulation to the top of the cover and weatherstripping underneath where it rests on the lip of the opening. Measure the cover to make sure it fits the opening, with the cover overlapping the molding lip so the weatherstripping seals well. If you have to make a new one, a piece of 1/2-inch drywall works well and is fire resistant.

The insulation on the top of the cover should be up to the recommended code ceiling R-value for your area – find out what that is at [www.ornl.gov/~roofs/Zip/ZipHome.html](http://www.ornl.gov/~roofs/Zip/ZipHome.html). (Adding more insulation above this level will not help appreciably.) In a well-insulated house, even just several square feet of uninsulated floor can lose a considerable amount of heat.

Before you add weatherstripping to the molding lip, place the cover over it and check whether it's even. The lip often consists of pieces nailed to the sides of the opening and aren't level. You may have to pry a side or two loose and reattach it. If it's very uneven, it will be difficult to get a good seal under the cover no matter how compliant the weatherstripping is.

In my own house, I first nailed a piece of 1/2-inch drywall to the plywood cover to give it some additional weight. Next, I glued a few layers of 3/4-inch polyurethane foam sheets on top

of it. I added four layers to get three inches of foam insulation. I used foil-faced insulation so it would reflect the heat from the hot roof back up during the summer.

The next step is to attach adhesive-backed foam weatherstripping to the top edge of the lip around the opening. Use as thick a foam as you can find to accommodate any out-of-level edges. The weight of the plywood and drywall should be adequate to compress the foam weatherstripping.

If you plan to go up into your attic often and want to install pull-down stairs or a ladder or your attic currently has one, buy a special insulated cover for the attic access opening. You could attempt to make one yourself, but its weight may be hazardous to open and manage when you are on the stairs.

One of the least expensive options is basically a three-sided heavy duty cardboard box. It's easy to open and assemble and then you can attach your own insulation to the top and sides. It's very lightweight and easy to lift and handle when you enter the attic on the stairs.

An efficient option is a lightweight large rigid-foam domed device that covers the folded stairs or ladder from above. It's strong and the foam provides adequate insulation. Another design uses a flexible zippered insulated cover that is permanently attached to the attic floor for a good airtight seal. The zipper provides a large opening for easy access to the attic.

**In a well-insulated house, even just several square feet of uninsulated floor can lose a considerable amount of heat.**

TogetherWeSave.com, an energy efficiency website from the nation's electric cooperatives, has two videos on this subject as part of its Watch & Learn series; visit <http://energysavings.togetherwesave.com/watch-and-learn> and click on the Sealing & Insulation tab, then scroll down to find how-to videos on insulating attic hatches and attic pull-down stairs.

The following companies offer attic entrance products: Atticap, 781-259-9099, [www.draftcap.com](http://www.draftcap.com); Attic Tent, 877-660-5640, [www.attictent.com](http://www.attictent.com); Battic Door, 508-320-9082, [www.batticdoor.com](http://www.batticdoor.com); Calvert Stairs, 866-477-8455, [www.calvertusa.com](http://www.calvertusa.com); and Rainbow Attic Stairs, 203-322-0009, [www.rainbowatticstairs.com](http://www.rainbowatticstairs.com).

Have a question for Jim? Send inquiries to: James Dulley, *Cooperative Connections*, 6906 Royalgreen Dr., Cincinnati, OH 45244 or visit [www.dulley.com](http://www.dulley.com).

## Improving Internet in South Dakota

**A group set up** to improve broadband Internet service in South Dakota is asking for the public's help.

The South Dakota Bureau of Information and Telecommunications (BIT) administers the South Dakota Broadband Initiative (SDBI) in an effort to enhance and increase the usage and adoption of broadband service across the state as well as increase its availability.

SDBI has developed a short survey that they are asking South Dakotans to complete to learn more about personal Internet capabilities online at [broadband.sd.gov/Surveys.aspx](http://broadband.sd.gov/Surveys.aspx). A paper copy of the survey can be requested at 605-773-4165 or via e-mail at [broadband@state.sd.us](mailto:broadband@state.sd.us).

Active participation from South Dakota residents will continue to help improve high-speed Internet capabilities for everyone in South Dakota, organizers at SDBI said.

The initiative also seeks to learn of areas in the state where broadband is not available. Visit [broadband.sd.gov/UnservedArea.aspx](http://broadband.sd.gov/UnservedArea.aspx) to tell SDBI more. You can also call 605-773-4165 or e-mail [broadband@state.sd.us](mailto:broadband@state.sd.us) to report your situation.

"The most important aspect of the SDBI is how we can improve the lives of residents and businesses across South Dakota through increased availability of broadband services and choices. By taking the time to fill out this brief online survey, you will help move us closer to making that a reality," said Mike Waldner, state broadband capacity manager.

*About SDBI: South Dakota's participation in the State Broadband Initiative is funded by a grant from the U.S. Department of Commerce, through the National Telecommunications and Information Administration.*

Expanding high speed Internet for all South Dakotans.

**SOUTH DAKOTA BROADBAND**  
[broadband.sd.gov](http://broadband.sd.gov)

TAKE THE SURVEY

TELL YOUR STORY

## Attorney General Warns of Scam

**In May, South Dakota** Attorney General Marty Jackley warned consumers to watch for e-mails that claim to be from the Walmart Corporation, but are actually scams designed to obtain personal identifying information. The Attorney General's Consumer Protection Division has received many examples of these e-mail messages from across the state. The e-mail claims that a recent purchase from [walmart.com](http://walmart.com) was being processed and shipped to another address.

"Consumers using online shopping should be on the lookout for scam artists trying to obtain their personal information for identity theft," said Jackley. "Avoid unsolicited e-mails and the links that are attached and take the extra step to contact the retailer directly with any questions."

The true Walmart website is [www.walmart.com](http://www.walmart.com), but the look-alike sites which use a few different keystrokes,



such as "wallmart," are set up to redirect consumers to bogus websites. Once redirected to the fraudulent site, the consumer will be asked to disclose personal information such as social security or bank account numbers.

If you have been a victim of one of these scams or need any additional information, contact the Attorney General's Consumer Protection Division at 1-800-300-1986 or [consumerhelp@state.sd.us](mailto:consumerhelp@state.sd.us).

For tips on staying safe online, please visit <http://atg.sd.gov/Consumers/IdentityTheft.aspx> or for Minnesotans, visit <http://www.ag.state.mn.us/Consumer/Miscellaneous/InternetSafety.asp>

## New Book Explores Electric Co-ops, Presidency Connection

**A new book** from author Ted Case explores the defining moments in the relationship between electric cooperatives and the U.S. Presidency.

"Electric co-ops have had a fascinating history with our nation's president," said Case. "Many of these stories have never been fully revealed until now."

Case's book, *Power Plays: the U.S. Presidency, Electric Cooperatives and the Transformation of Rural America*, highlights the role of electric co-ops in some of the most significant events of the past 75 years, including the Cuban Missile Crisis, the Vietnam War and Watergate.

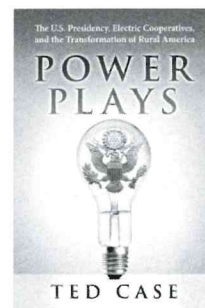
The history, Case said, "makes it clear electric co-ops occupy a place in history far beyond stringing wire down a lonely country road."

Case conducted scores of interviews and visited presidential libraries to reconstruct the history of 12 different presidents and how they interacted with

electric co-op leaders. He also extensively interviewed two National Rural Electric Cooperative Association (NRECA) general managers who were political leaders of the electric co-op program: Bob Bergland and Glenn English. Bergland called *Power Plays* a "must read for electric co-op leaders."

To purchase the book, go to [www.tedcaseauthor.com](http://www.tedcaseauthor.com)

*About the author: Ted Case is the executive director of the Oregon Rural Electric Cooperative Association in Salem, Ore. He is a former National Rural Electric Cooperative Association legislative director and holds a Master of Arts degree in writing from Johns Hopkins University.*



# Baby It's Hot

**“We do  
hotline  
work so we  
don't have  
to disrupt  
power for  
consumers.”**

**by Brenda Kleinjan**

**O**N A THURSDAY AFTERNOON IN LATE MAY, ABOUT 200 co-op members near Lake Pelican southwest of Watertown, S.D., had electricity.

Nothing new there.

Current flowed, powering their daily lives. Dishwashers ran, lights came on, Internet modems were powered. Life went on as normal.

But, just to the south of the lake, along a stretch of three-phase power line crossing above a railroad track, an electric co-op crew was conducting a carefully choreographed procedure, a pole change out.

The process seems pretty straightforward: dig a hole, put a new pole in. Before being lifted in place, the pole needs to be framed up with cross arms, insulators, bolts and other components.

And then comes the biggie: this seemingly simple

process is going to happen while thousands of volts of electricity are coursing through the energized lines.

By working the line hot – or energized – the co-op crews could minimize the impact a disruption of service would have on co-op members' lives.

De-energized, the work would have taken 45 minutes to an hour, but those 200 families would have been without power, said David Zaug, distribution system manager for Codington-Clark Electric Cooperative in Watertown, S.D., whose crews were doing the work near Pelican Lake. Zaug said the co-op has been doing hotline work for more than 40 years.

Working the line hot increased some of the risk of the work and took two-and-a-half hours to complete, but with no disruption of service.

This same scenario plays out countless times a





week throughout the more than 65,000 miles of power lines maintained by electric cooperatives in South Dakota and western Minnesota.

"Anyone with urban load is doing (hot work) for sure so that we don't have interruptions to the members," said Mike Letcher, manager of operations at West River Electric Association in Wall, S.D. "Anymore, people just don't want to be shut off."

"When we have to shut somebody off, we try to schedule that out a week ahead and you still get complaints," said Letcher. And, sometimes that inconvenience simply cannot be avoided.

Letcher estimated that about 80 percent of the work done by his crews is done hot. He said the co-op has been doing rubber gloving work since the mid-1990s.

Letcher noted that some in the industry believe that working lines hot actually minimizes some of the risks associated with line work.

"Some people think it is safer doing it hot than grounding it, because there are less chances to skip a step or that someone has brought the line back on," Letcher said.

"When you do it hot, you know it's hot and you do the work hot," Letcher said. "For the lineman, you know it's hot and you treat it as hot. You never have the opportunity for thinking it was off."

Working the lines hot takes more time, equipment and training, Letcher said.

The work is mostly reserved for journeymen linemen – individuals who have completed 8,000 hours working as an apprentice and who have successfully passed several exams to become journeymen.

"We train the apprentices for hot work, but we don't do it until their third or fourth year out," said Letcher.

And, once trained, line workers will continue their training by attending rubber gloving schools.

The gear they use for the work is also specialized, even if the names for the equipment sounds commonplace: hoses, blankets, gloves and sticks.

The lineman is armed with rubber gloves and sleeves. The gloves can only be used for 30 days at a time before they must be sent in for testing. The rubber sleeves that protect the workers upper arms are also tested frequently. The coverups – hoses and blankets that are used to cover portions of the line and poles being worked on – are tested every six months.

And, before each and every use, the lineman visually

inspects the equipment to look for holes, scrapes, cuts or other damage that could compromise this essential piece of protective equipment.

"You want to be careful. You don't want to make a mistake," said Letcher. "We have really good training and good people. Accidents don't happen that often."

Weather conditions and the condition of the infrastructure are other hazards that must be dealt with.

"You have to know what your hazards are before you enter into the job," said Rob Vetch, line superintendent at FEM Electric Association in Ipswich, S.D.

One of the biggest things that Vetch stresses his people look for is frayed wire.

"That always bothers me. It could look good, but it could have a weak spot," Vetch said.

"You have to inspect the wire – carefully look at both spans on either side of the pole to make sure nothing is loose or could break. When you get up to that pole, you look at the wire and make sure that it's not frayed or can break," said Vetch.

Vetch cautions that the area where crews are working is not one for passers-by to drop by.

"There is a certain amount of danger involved. When you see the 'Utilities Crew Working' signs, stay away from the work site. It's not really a place to visit," Vetch said.

When a crew is working a line hot, there are a minimum of three people on the site, Vetch said, each with an important job to do.

"Everyone has a job – even the guy that looks like he's just standing there.

That guy on the ground is watching the back of the guy in the bucket," Vetch said.

Vetch echoed Letcher and Zaugg's observations on why work is done hot.

"We do hotline work so we don't have to disrupt power for consumers," said Vetch.

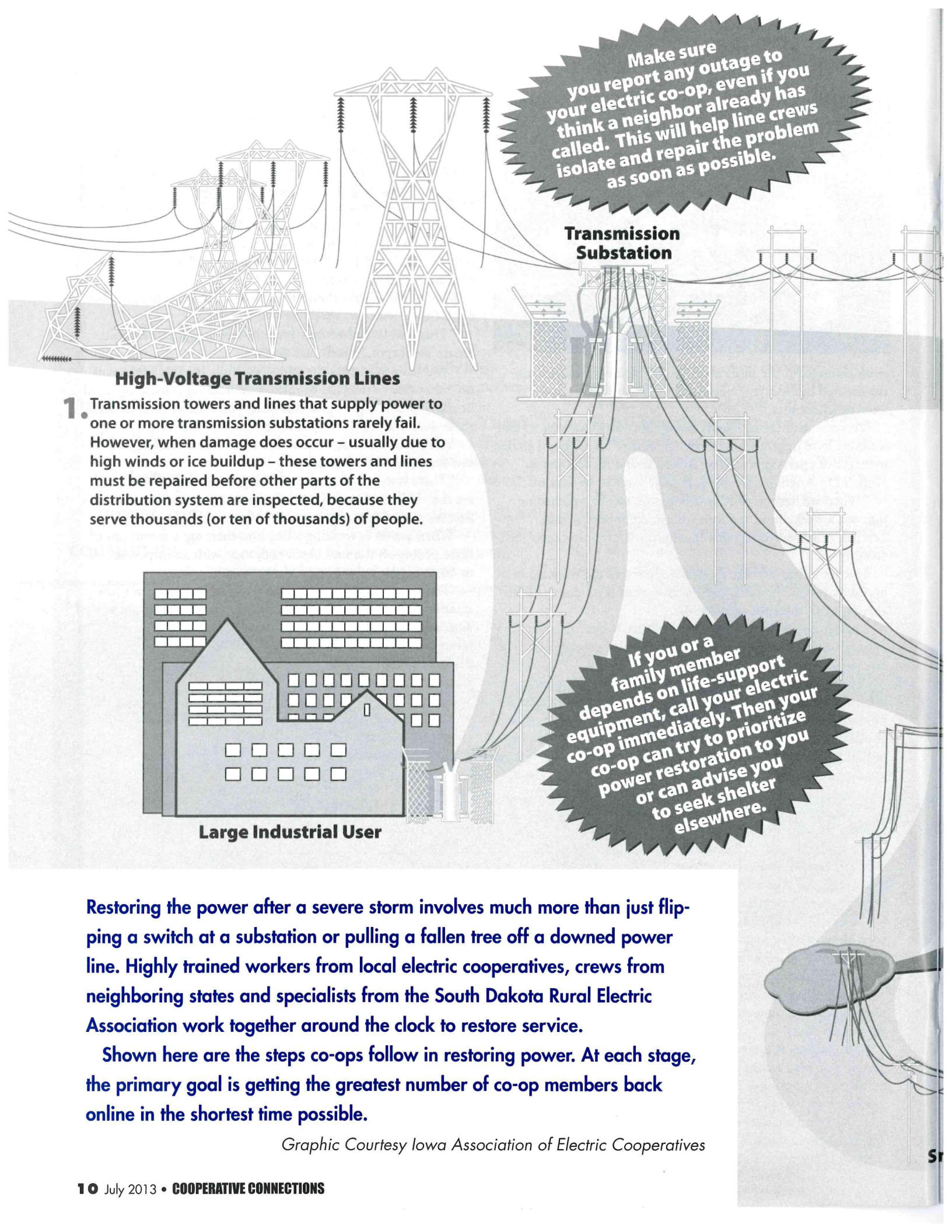
"There is the convenience thing for the member, but it also allows us to keep the meters going," Vetch said.



**Above:** Codington-Clark Electric Distribution System Manager David Zaugg holds a plumb to align a three-phase pole being set in to place.

**Top:** Codington-Clark Electric lead lineworker Jared Terhark conducts a tail-gate briefing reviewing the work to be done and any hazards or conditions in the area with apprentice lineworker Jace Martens, 1,000-hour summer lineworker Nick Kramer and journey lineworker Josh Mikkelsen.

**Opposite page:** Lead lineworker Jared Terhark checks his distances as he raises his bucket to work on an energized line south of Lake Pelican.

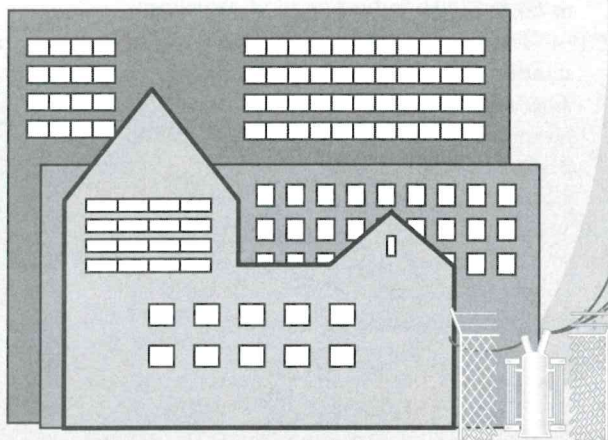


Make sure you report any outage to your electric co-op, even if you think a neighbor already has called. This will help line crews isolate and repair the problem as soon as possible.

**Transmission Substation**

### High-Voltage Transmission Lines

1. Transmission towers and lines that supply power to one or more transmission substations rarely fail. However, when damage does occur – usually due to high winds or ice buildup – these towers and lines must be repaired before other parts of the distribution system are inspected, because they serve thousands (or ten of thousands) of people.



**Large Industrial User**

If you or a family member depends on life-support equipment, call your electric co-op immediately. Then your co-op can try to prioritize power restoration to you or can advise you to seek shelter elsewhere.

Restoring the power after a severe storm involves much more than just flipping a switch at a substation or pulling a fallen tree off a downed power line. Highly trained workers from local electric cooperatives, crews from neighboring states and specialists from the South Dakota Rural Electric Association work together around the clock to restore service.

Shown here are the steps co-ops follow in restoring power. At each stage, the primary goal is getting the greatest number of co-op members back online in the shortest time possible.

*Graphic Courtesy Iowa Association of Electric Cooperatives*

# How power is restored after an outage



## Local Distribution Substation 1

2. A co-op usually has several local distribution substations, each serving hundreds or thousands of co-op members. When a major outage takes place, these substations usually are checked first to see if the problem is in the transmission system to the substations or the substations themselves.

## Local Distribution Substation 2

3. If the problem cannot be isolated at a local distribution substation, the next step is to check the distribution lines that carry power to groups of customers such as towns or housing developments. In Iowa, the largest cause of outages is fallen trees, which is why your co-op has an ongoing right-of-way maintenance program.

5. Finally, isolated outages – caused, for example, by a damaged service line between a transformer and an individual home – are repaired.

**Do not connect a generator directly to household wiring. The power from a generator can back-feed to power lines and injure or electrocute line workers making repairs.**

4. Then, the line crews work on outages that are more localized by inspecting the final supply lines – called tap lines – that carry power to utility poles or underground transformers outside small businesses, schools and homes.

# What's Up With the Blinks?

**H**AVE YOU EVER WOKE UP OR COME HOME TO YOUR digital clock blinking “12:00” or perhaps “88:88” and thought, “Great. The power was out. Something’s wrong?”

Not so fast. It may not have been an outage but simply a blink – a situation where your electric delivery system was doing exactly what it was supposed to do – try to clear an obstacle and continue delivering electricity.

“When the lights are blinking something is wrong is the one of the biggest misconceptions people make,” said Ted Smith, director of engineering and operations at Sioux Valley Energy in Colman, S.D.

“When they’re blinking, the system is working right,” said Smith. “This blinking is the system clearing a temporary fault – a tree branch may have brushed into the line with the wind.”

Blinks are created when a breaker, or switch, opens along any portion of the power system. The breaker usually opens because of a large, quick rise of electrical current. This large rise, called a fault condition, can occur when a tree branch touches a line, lightning strikes or a wire breaks.

When this happens, a relay senses the fault and tells the breaker to open, preventing the flow of power to the problem site. After opening, the

breaker quickly closes. The brief delay, which allows the fault to clear, usually lasts less than two seconds.

If the fault clears, every home or business that receives electricity off that power line has just experienced a blink. This could include thousands of accounts if the breaker protects a transmission line or a substation.

“Something like 75 percent of faults on an overhead system are temporary in nature, most of those are cleared without anyone needing to intervene,” said Smith.

Having the system try to reset itself after temporary faults cuts down on lengthy outages.

“If it shut off the system every time a tree branch hits, we’d have lengthy outages one to two hours more often,” Smith said, noting that most of an hour would be spent getting crews to an area to look for the problem.

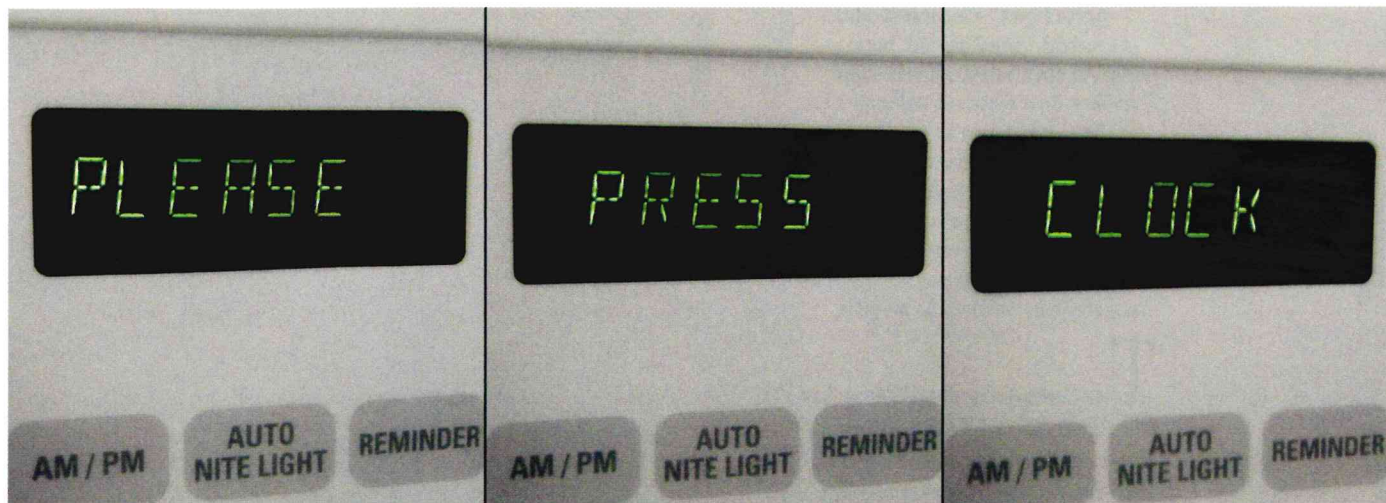
A common contributor to blinks can be tree branches swaying into lines or falling into lines.

To minimize the contact the trees have with lines, cooperatives invest in tree-trimming programs to create distance between the tree limbs and the power lines.

“At Sioux Valley, we do \$400,000 in tree trimming each year. We try to get to the whole system in five years,” said Smith, who noted the practice

**By Brenda Kleinjan**





proved invaluable with the April 2013 ice storm that disrupted power for several days in the Sioux Falls area.

Smith said the co-op was fortunate because the area that was hit had been the focus of the co-op's tree-trimming efforts the previous year.

"We had hit the Brandon area hard and that left us in a good position to weather the April ice storm. If that hadn't been scheduled until later this year, we would have had a lot more damage," Smith said.

Another contributor to temporary faults which can create blinks is public contact scenarios. These are situations where something from the public – a piece of farm equipment, a vehicle, a piece of construction equipment – comes in contact with power lines briefly but does not completely turn off the system.

Smith said farm equipment such as sprayer booms and planter markers are sometimes culprits.

"Public contacts are our third-highest cause of temporary faults," said Smith.

Animals and birds are the second-leading cause for blinks.

Across the state, Rick Kirschenmann, system engineer for Black Hills Electric Cooperative in Custer, S.D., said that in addition to trees and animal-caused blinks, weather such as lightning can also cause disruptions.

"During certain times of the year, we can have some pretty good lightning here in the Hills that will create some blinks," said Kirschenmann.

Another twist at Black Hills Electric is risk from an insect: the mountain pine beetle. Damage caused by the beetle has weakened trees in the forest. And, with

4 million trees within falling distance of the co-op lines, that's a big concern.

"We're doing a lot of right-of-way maintenance cleaning up dead trees. The wind can get blowing through and knock the tree over causing an outage or it can cause the tree to brush the line and cause the reclosure to operate, which creates a blink," Kirschenmann said.

Both Smith and fellow co-op engineers noted that technology such as advanced metering information (AMI) can help co-ops isolate where problem areas are.

"It can show the last six times it blinked or had an outage. We can look at those and monitor that and match it up with the line or substation as to what's going on," said Matt Hotzler, general manager of H-D Electric Cooperative in Clear Lake, S.D. Hotzler is also a professional engineer.

So, when should one call about the blinking clocks?

"If it's continually happening, we'd want to know that so we can figure out what's going on," said Hotzler.

Hotzler said the co-op experienced a more unusual case of this. An area was experiencing blinks and the co-op was not coming up with a reason for the disruptions. They eventually isolated the area where the problem was happening and began further investigations.

The problem: a bull rubbing up against a loose guy wire was causing the pole to move slightly.

"They really only need to call us if the lights blink and they heard or saw something. That helps narrow down where we had the problem," Smith said.

## Reducing the blink's effects

**Your co-op employs methods to reduce blink frequency.** Tree trimming is probably the easiest and most common way and one area where you can help. Make sure your co-op knows of any trees or limbs located close to a power line. Call your local electric cooperative (contact information can be found on Page 3) to tell about potential problems.

Meanwhile, you can reduce the frustration of blinks by purchasing an alarm clock equipped with a battery backup. This type of digital clock offers "ride through" ability for momentary outages. It will also keep the correct time and sound an alarm in case of a long-duration outage, provided a charged battery is in place. As an added benefit, these devices only use the battery in the event of a power interruption.

Blinks affect all electrical equipment, not just digital clocks. If there is a blink while you are operating a computer, your computer may crash and you will have to reboot, hoping all the while that there will be few corrupted files.

An uninterruptible power supply (UPS) on your computer can help prevent information loss. The UPS incorporates surge suppression technology with a battery backup and provides you some time to save whatever you were working on and exit your computer properly.

# Home Smart Home

**T**HE “HOME OF THE FUTURE” IS FAR FROM A NEW idea. Post-World War II, America expected computer punch cards to cook entire dinners without help from human hands. Today, Wi-Fi and smartphones can help make “smarter homes” a reality.

**By Magen Howard**

**Below:** One smart home component with great potential to save energy and money is remotely controlled thermostats, like GE's Brillion model, which allows you to program your home's thermostat from a desktop computer or iPhone.

Source: GE

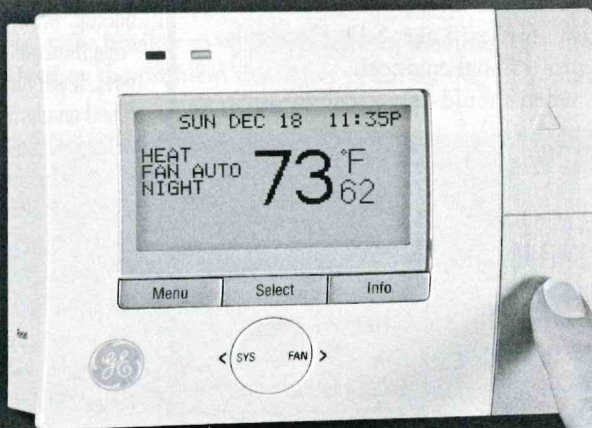
Communications modules inside some appliances and wall outlets can use a home's Wi-Fi to send and receive simple messages from a connected home energy network. Other smart home components include remotely controlled thermostats and, potentially, the capability to link to the electric grid so appliances can better take advantage of off-peak rates, when electricity is less expensive.

To make this happen, more than random appliances and fancy outlets are required – you need a home energy network to tie everything together. Some home security, cable and phone companies offer such systems, usually sold as a “home monitoring solution.” Some allow you to unlock your front door or open your garage door from an app on your smart

phone, view your home from a camera and manage and monitor electrical devices. Fees generally start at \$10 a month and go up depending on the services you choose, says Brian Sloboda, a senior program manager specializing in energy efficiency for the Cooperative Research Network, the research and development arm of the Arlington, Va.-based National Rural Electric Cooperative Association.

“Smart homes have a lot of potential, but whether that potential can be realized depends on so many factors – namely, whether your home has high-speed Internet,” he cautions. “You also can talk to your electric co-op about whether it has special rate structures that will allow you to use smart appliances to their full value.”

The aim of smart homes, Sloboda explains, is to increase convenience for homeowners while saving energy and money for both consumers and the utility. Consumers would be able to control various devices and potentially see lower electric bills, while their electric





**Left:** Whirlpool's "smart refrigerator" has an Energy Advisor to track how much electricity it uses, a Vacation Assistant with options for when you're not home and the Filter Assistant tells you when it's time to replace the water filter.

**Inset opposite page:** Whirlpool's smart appliances work with an app that lets you remotely monitor and program all coordinated appliances.

Source: Whirlpool Corporation

- What are my goals? Do I want home security and energy savings or do I just want the latest app?

- Do I have broadband in my home? Many of the systems require a high-speed Internet connection to work.

- What devices do I want

to control? It's not just appliances or thermostats – apps can lock doors and turn off lights, too.

- How much is it worth to me?

Many services charge a monthly fee in addition to upfront equipment costs. Some systems require \$100 or more of equipment to work.

- What appliances need to be replaced and does an app really make sense for that appliance?

- Who owns the data collected from your appliances and how will they use it?

None of the smart home appliances that appear to be coming to market will cook dinner with just the push of a button. But some will allow you to see what is going on at home, who is home and even turn the air conditioning on and off.

"The bottom line is, consumers have to decide if a smart home will aid or hinder their lifestyle – and if their electric utility even offers incentives to make it worth the expense," Sloboda concludes.

Source: Cooperative Research Network

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

utility could shift load from peak times – which ends up saving money for everyone by avoiding the need to purchase expensive peak-time power or even build new power plants to meet growing demand.

A few electric cooperatives around the country are performing studies to determine if home energy networks might benefit co-op members, but all are in the early stages. Currently, the biggest bang for the buck comes from remotely controlling a home's automated thermostat because many consumers do not program them.

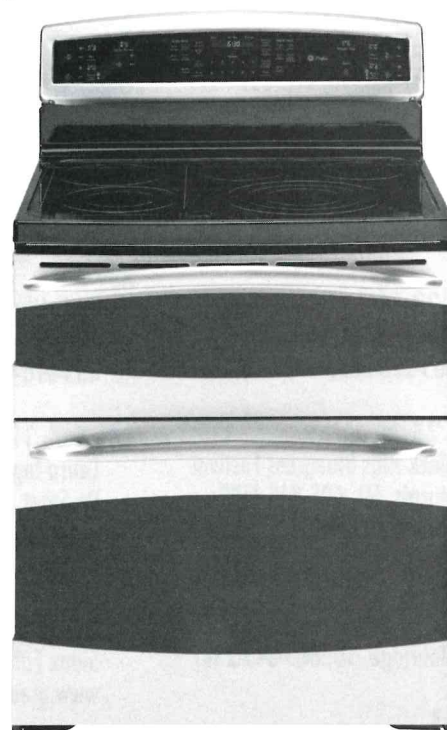
To see real energy savings from a home energy network, consumers should work in partnership with their local electric cooperative, Sloboda emphasizes. "Some app developers have suggested that consumers could use their smart phones to pre-heat the oven while driving home – is anybody really going to use that? We have to see more research before this concept gets off the ground."

Even manufacturers aren't sure. GE's appliance division recently launched a line of smart appliances, called Brillion, meant to link with a home energy network. GE set up a series of tests to see how the equipment would operate in a home energy network at various utilities across the nation, including Flint Energies, based in Reynolds, Ga. But after a few months, GE refocused the undertaking to consumer convenience.

"We installed GE Brillion appliances in 10 homes during our smart grid demonstration project," explains Jimmy Autry, senior vice president of member & community relations for Flint Energies. "GE soon stopped the energy-savings emphasis of the program because not enough utilities offered incentive rates for the appliances."

## Evaluating a smart choice

But before buying into "the home of the future," Sloboda encourages homeowners to ask themselves the following questions:



**Above:** GE's Brillion "smart oven" automatically defaults to its smaller upper oven during peak times of electricity use.

Source: GE

## Regional Dateline

### June 21-23

Red Wall Canyon Cowboy  
Music Festival and Trail Ride  
Hot Springs, SD, 605-745-1890  
[www.redwallcanyon.com](http://www.redwallcanyon.com)

### June 23

Kite and Bike Festival  
Brookings, SD, 605-688-5423

### June 23-25

Indian Day Powwow  
St. Francis, SD, 605-891-9992

### June 27-29

Crystal Springs Ranch Rodeo  
Clear Lake, SD, 605-874-2996  
[www.crystalspringsrodeo.com](http://www.crystalspringsrodeo.com)

### June 28-29

Rodeo, Irene, SD  
605-263-2855

### June 28-30

Black Hills Bluegrass Festival  
Sturgis, SD, 605-348-1198  
[www.blackhillsbluegrass.com](http://www.blackhillsbluegrass.com)

### July 2-4

Sitting Bull Stampede  
Mobridge, SD, 605-845-2387

### July 3

Black Hills Round Up 4th  
Annual Ranch Rodeo  
Belle Fourche, SD  
605-892-2676  
[www.blackhillsroundup.com](http://www.blackhillsroundup.com)

### July 4-6

94th Annual Black Hills  
Round Up, Belle Fourche, SD  
605-892-2676  
[www.blackhillsroundup.com](http://www.blackhillsroundup.com)



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

### July 5-7

Rosebud Casino  
4th of July Pow Wow  
Mission, SD, 800-786-7673

### July 12-14

Mni Sose Wakpa Wacipi  
Fort Pierre, SD, 605-220-2756

### July 5-7

SWO 4th of July Wacipi  
Agency Village, SD  
605-698-4972

### July 13

Rockfest II, Aberdeen, SD  
605-357-7377  
[www.94rockfest.com](http://www.94rockfest.com)

### July 19-21

Festival in the Park  
Spearfish, SD, 605-642-7973

### July 5-7, 12-14, 19-21

Laura Ingalls Wilder Pageant  
De Smet, SD, 800-776-3594  
[www.desmetpageant.org](http://www.desmetpageant.org)

### July 13-14

Summer Arts Festival  
Brookings, SD, 605-692-2787  
[www.bsaf.com/index.htm](http://www.bsaf.com/index.htm)

### July 20-21

Running Antelope Wacipi  
Little Eagle, SD, 605-823-4132

### July 20-21

Harvest Fest and the  
Ranch Rodeo, Wilmot, SD  
605-938-4707  
[www.wilmotsouthdakota.com](http://www.wilmotsouthdakota.com)

### July 6

Animal Enrichment Day  
Sioux Falls, SD, 605-367-7003  
[www.greatzoo.org](http://www.greatzoo.org)

### July 18-20

JazzFest, Sioux Falls, SD  
605-335-6101  
[www.jazzfestsiouxfalls.com](http://www.jazzfestsiouxfalls.com)

### July 26-27

Storybook Land Festival  
Aberdeen, SD, 605-226-1557  
[www.aberdeen.sd.us/sblfestival](http://www.aberdeen.sd.us/sblfestival)

### July 12-14

Antelope Community Pow Wow  
Antelope, SD, 605-828-1273

### July 18-21

43rd Annual Corn Palace  
Stampede Rodeo  
Mitchell, SD, 605-770-4919

### July 26-28

Milks Camp Community  
Pow Wow, Herrick, SD  
605-469-5708

### July 12-14

Hot Harley Nights  
Sioux Falls, SD, 605-334-2721

### July 18-21

Stampede Rodeo  
Burke, SD, 605-775-2158

### July 27

Dakota Irish Fair 2013  
Sioux Falls, SD, 605-373-9154

### July 12-14

Boss Cowman Rodeo  
Lemmon, SD, 605-374-3584  
[www.lemmonsd.com](http://www.lemmonsd.com)

### July 19-21

Corn Creek Celebration  
Pow Wow, Rosebud, SD  
605-828-0952