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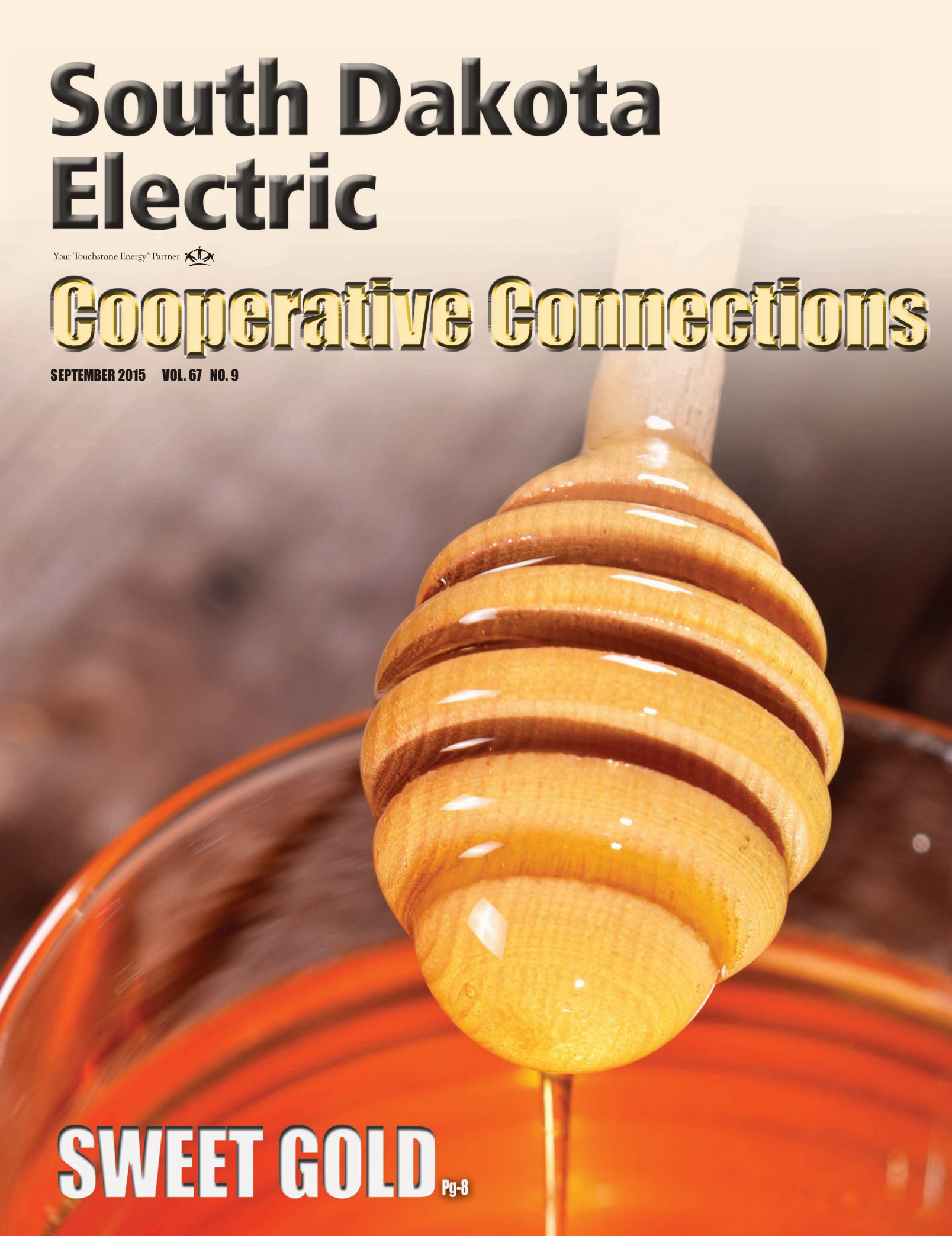
Cooperative Connections

SEPTEMBER 2015 VOL. 67 NO. 9



SWEET GOLD Pg-8

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South Dakota Electric Cooperative Connections

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Black Hills Electric, Custer, S.D.
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Southeastern Electric, Marion, S.D.
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West Central Electric, Murdo, S.D.
West River Electric, Wall, S.D
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Editorial

Electric Cooperatives React to President's Clean Power Plan

Ed Anderson
General Manager, South Dakota Rural Electric Association

Electric cooperatives in South Dakota are bracing for what they describe as the negative financial and reliability impacts of the Environmental Protection Agency's (EPA) newly released Clean Power Plan regulating existing power plants.

Acting under what the EPA says is its authority given to them by Congress under the section 111(d) of the Clean Air Act, the agency today released a final rule that will seek to limit carbon dioxide emissions from power plants. Cooperatives contended the new regulations are a clear overreach by the EPA that will dramatically reshape how America generates and uses electricity.

This rule will have a dramatic impact on the electric bills paid by every South Dakotan. We've worked extremely hard to control costs and keep electricity affordable, but the EPA's plan will simply increase the cost of electricity for every consumer.

For years, the region's electric cooperatives have been working to lessen the impact on the environment by adding renewable generation and lower-emitting resources while saving consumers money on their electric bills through energy efficiency programs.

Electric cooperatives have been steadily reducing the environmental impact of power generation while adding natural gas and renewable resources. And our members have been engaged in energy efficiency and demand response programs for decades to keep consumers' electricity bills affordable. The EPA's regulations won't give us credit for all of the investment we've already made in renewable generation and punish electric consumers even more with higher bills.

As consumer-owned utilities, electric cooperatives will be disproportionately affected by the rule by increasing electricity prices and jeopardizing reliability. By shutting down coal-fired generation, the EPA will remove a vital safety net in emergencies or times of extreme power demand. Anderson said consumers will be hit with higher electric bills while the rule impacts reliability of the power grid.

Co-op employees and directors live in the communities they serve and they care about the members at the end of the line who will be footing the bill to comply with these overreaching regulations. The EPA admits that the rule would prematurely shut down more than one quarter of electric cooperative's coal-fired generation capacity across the country. The burden of paying off the remaining debt on those plants and paying for electricity from other sources would fall on the backs of our consumers in South Dakota.

The Clean Power Plan will undoubtedly be litigated extensively. Lawsuits challenging the rule have already begun and will escalate rapidly after the rule is published in the *Federal Register*. Absent a stay from the courts, which is unlikely, states must continue to develop implementation plans or have a federal plan developed for them.

Six Rules for School Safety

Back-to-school does not have to mean back-to-worrying. Though safety inside school is ultimately the responsibility of the principal and school staff, parents can take a few basic steps to ensure a safe school experience. These are recommended by the National Association of Elementary School Principals:

• Learn the school's emergency procedures. Emergency plans and phone numbers are usually included in school handbooks and posted in classrooms. Taking a few extra minutes to familiarize yourself and your child with emergency information can give him the confidence he needs to act quickly in emergency situations.

• Know travel routes to and from the school. Make sure you and your child know both primary and alternate routes. In an emergency, roads can be blocked and it's important to have a backup plan.

• Know and follow school security and safety measures. These might include signing in when visiting the school, being escorted when walking through the building or wearing a visitor pass. Following these procedures also sets a great example for your kids.

• Talk with your child about safety. Be specific. Talk about instinct and paying attention to funny feelings of fear. Explain what to do if she doesn't feel safe (find a teacher, call 911, etc.). Make sure she knows how to contact you or a trusted neighbor who is likely to be at home.

• Inform school staff about health and emotional concerns. Whether your child has a food allergy, a physical disability or has been subject to bullying, make sure to keep your child's teachers and principal in the loop.

• Get involved. Talk with the principal about what you can do to increase school safety, such as organizing parents to form a neighborhood watch before and after school. Sometimes parent groups are highly successful in making improvements in traffic safety during drop off and pick up times.

Source: www.scholastic.com

EPA's Greenhouse Gas Regulations Fail to Consider the Economic Impact on Americans

America's electric cooperatives, through the National Rural Electric Cooperative Association (NRECA) expressed concerns with the Environmental Protection Agency's (EPA) final rules regulating greenhouse gas emissions from new, existing, modified and reconstructed power plants which were announced Aug. 3.

"Any increase in the cost of electricity most dramatically impacts those who can least afford it, and the fallout from the EPA's rule will cascade across the nation for years to come," said NRECA CEO Jo Ann Emerson in early August.

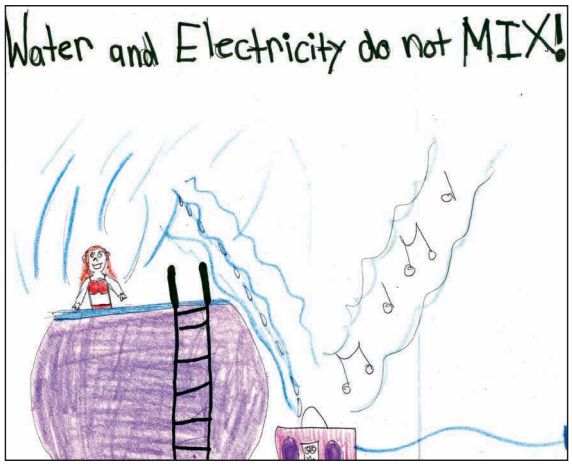
"While we appreciate the efforts intended to help offset the financial burden of rising electricity prices and jobs lost due to prematurely shuttered power plants, the final rule still appears to reflect the fundamental flaws of the original proposal. It exceeds the EPA's legal authority under the Clean Air Act, and it will raise electricity rates for our country's most vulnerable populations while challenging the reliability of the grid.

"We will continue reviewing this extremely complex rule and have additional comments on behalf of America's not-for-profit, consumer-owned electric cooperatives in the coming days."

For more information and an interactive map, visit http://www.nreca.coop/111d.

Electric bills for Americans could go up with EPA's final power plant rule.

Kids' Corner Safety Poster



"Water and electricity do not mix!"

Sally Hakin, 12 years old

Sally is the daughter of Tim and Anita Hakin, Herrick, S.D. They are members of Rosebud Electric Cooperative, Gregory, 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.

Garden Delights

Cabbage Sloppy Joes

1 lb. ground beef
1-1/2 cups finely shredded cabbage
1 medium onion, chopped
1 celery rib, chopped
1/4 cup chopped green pepper
1 cup ketchup
3 T. brown sugar
2 T. lemon juice
1 T. white vinegar
1 T. Worcestershire sauce
1 T. prepared mustard
1 tsp. salt
Dash pepper
8 sandwich rolls

In a large skillet, cook beef, cabbage, onion, celery and green pepper over medium heat until meat is no longer pink and the vegetables are crisp-tender; drain. Stir in ketchup, brown sugar, lemon juice, vinegar, Worcestershire sauce, mustard, salt and pepper. Cover and simmer for 10 minutes until cabbage is tender. Serve on rolls.

Stephanie Fossum, Hudson

Tomato Soup

2 gallons tomatoes, chopped
1 bunch celery, chopped
1 green pepper, chopped
6 medium onions, chopped
1 cup melted butter
1/8 cup salt
1-1/2 cups sugar
1-1/2 cups flour

Boil vegetables until tender; strain through a colander. This should yield about 4 quarts juice. Mix together butter, salt, sugar and flour. Add to juice slowly, stirring constantly. Boil 20 minutes; will thicken as it boils. Pour into jars and pressure cook 10 minutes at 5 lbs.

Diane Bartnick, New Effington

Asparagus Cheese Strata

1-1/2 lbs. fresh asparagus, cut into 2-inch pieces
3 T. melted butter
1 loaf sliced bread, crusts removed
3/4 cup shredded Cheddar cheese, divided
2 cups cubed, fully cooked ham
6 eggs
3 cups milk
2 tsp. dried minced onion
1/2 tsp. salt
1/4 tsp. dry mustard

In a saucepan, cover asparagus with water. Cover and cook until tender but still firm; drain and set aside. Lightly brush butter over 1 side of bread. Place 1/2 of bread, buttered side up, in a greased 9x13-inch pan. Sprinkle with 1/2 of cheese. Layer with asparagus and ham. Cover with remaining bread, buttered side up. Beat eggs. Add milk, onion, salt and mustard. Pour over bread. Bake uncovered at 325°F. for 50 minutes. Sprinkle with remaining cheese. Bake an additional 10 minutes or until cheese is melted and a knife inserted in center comes out clean.

Shirley Miller, Winfred

Cucumber Leek Soup

1 T. butter, unsalted
2 large leeks (about 1/2 pound), trimmed, cleaned and sliced
3 large seedless cucumbers (4 cups), peeled and coarsely chopped
1-1/2 cups low-fat milk
1 T. lemon juice
1/4 cup fresh mint leaves
Black pepper
Salt
3/4 cup low-fat plain yogurt
1 T. honey
1/2 cup chopped grape tomatoes
1/4 cup feta or blue cheese crumbles

In a large skillet, melt butter over medium heat. Add leeks and sauté for 5 minutes. Mix in cucumbers; sauté for 1 minute then remove from heat. Add leeks, cucumbers, milk, lemon juice and mint to a blender or food processor; puree for 1 minute. Add pepper and salt to taste; blend together. In a separate bowl, mix yogurt and honey together. Fold into cucumber soup. For best flavor results, chill in refrigerator for 1 hour. When ready to serve, ladle soup into four bowls. Add 2 T. of tomatoes and 1 T. of cheese crumbles in the center of each bowl. Makes 4 servings.

Nutritional information per serving: 190 calories; 7g total fat; 4g saturated fat; 9g protein; 25g carbohydrate; 3g dietary fiber; 23mg cholesterol; 243mg sodium

Pictured, Cooperative Connections

Zucchini Supreme Casserole

1/4 cup diced onion
2 lbs. zucchini, diced (about 6 cups)
1 can cream of mushroom soup
1 cup sour cream
1 cup shredded carrots
Diced chicken or turkey
1 pkg. seasoned croutons
1/2 cup butter, melted

Cook onion and zucchini together in a little salted water until soft; drain. Combine soup and sour cream. Add carrots and meat. Fold in zucchini mixture. Toss croutons with melted butter. Place 1/2 croutons in bottom of casserole dish. Spread zucchini mixture over top. Sprinkle with remaining croutons. Bake at 400°F. for 50 minutes.

Paula Vogel, Ethan

Rhubarb Muffins

2 cups brown sugar, divided
2 eggs
1 tsp. vanilla
1 cup vegetable oil
1 cup buttermilk
3 cups flour
1 tsp. baking soda
2 cups diced rhubarb
1/2 tsp. salt
1-1/4 cups chopped nuts, divided
2 T. cinnamon

Combine 1-1/2 cups brown sugar, eggs, vanilla, oil and buttermilk. Add flour, baking soda, rhubarb, salt and 3/4 cup nuts. Put in muffin pan. Combine remaining brown sugar, nuts and cinnamon. Sprinkle over top. Bake at 325°F. for 20 to 25 minutes.

Mary Jessen, Holabird

Please send your favorite pasta and crockpot 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 2015. All entries must include your name, mailing address, telephone number and cooperative name.

Balancing Temps in a Two-story Home

Jim Dulley
www.dulley.com

Dear Jim: We have a new heat pump, but we have a problem keeping all of the rooms in our home comfortable. Someone is always too hot or too cool. What are some simple methods to even out the temperatures throughout the house? – Jason F.

Dear Jason: The problem you are experiencing is common, particularly in a two-story home – even for the newest heat pump systems. Unless you install an expensive zone-control system with multiple thermostats, your heat pump can only respond to the temperature of the room where the wall thermostat is located.

Numerous factors determine how much heating or cooling is used, and therefore the temperature is affected. These factors can include the number and orientation of the windows, whether the room is located on the first or second floor, the activity level in the room and the length of the duct leading to it.

There also may be differences in the energy efficiency of various rooms, which cause the temperature difference. Leaky windows are a particular problem. When using an air-conditioning system, place an air deflector over the register to help distribute cool air throughout the room.

Check your home's attic insulation, especially if it is the blown-in type. The insulation can shift during storms, and eventually, some rooms can have two feet of insulation while others only have two inches. This can have a major effect on the room temperature. Even out the insulation as much as possible.

The standard builder-installed sheet metal ductwork often has many leaky spots, so some of the heated or cooled air leaving the heat pump never makes it to the rooms in your home. The joints between the duct segments are the most common areas that leak. Use a high-quality duct tape, such as black Gorilla Tape, to wrap all of the joints. You may find this takes care of most of the problem.

Each room should have a return air register, particularly bedrooms where the doors may be closed at night. Return ducts usually run down between the wall studs inside interior walls, so adding them in problem rooms is not difficult for a contractor to do.

There are many innovative ways to install an additional return duct. For example, in my parent's older two-story home, the contractor was able to run a return duct down through a never-used laundry chute to the basement.

Check the ducts near the heat pump. If you see short handles on each one, they are for control dampers inside the ducts. When the handle is parallel to the duct, the damper is fully open. Partially close the dampers in the duct leading to the rooms which are getting too much heating or cooling to force more to the problem rooms.

Don't try closing the damper in the room's floor or wall registers. First, they typically are leaky, so the air flow will not be reduced by much. Second, because the ducts inside the walls are probably leaky and you have no access to seal them, conditioned air is lost inside the exterior walls.

If these methods do not provide adequate temperature balancing, consider installing duct booster fans. These small fans mount in the ducts to the problem rooms and force more conditioned air to them.

These fans are sized to fit standard round and rectangular residential ducts and can be controlled in different ways. The simplest fans sense when the main blower turns on, and they automatically run at the same time. Others have built-in thermostats to determine when they run. It is best to hire an experienced contractor to handle the installation for you. The fan can be wired into your blower switch to turn on with the heat pump.

Numerous factors determine how much heating or cooling is used, and therefore the temperature is affected.

A simple do-it-yourself option is to install a register booster fan. This small rectangular fan mounts over the register cover in the room and is plugged into a standard electrical wall outlet. The small fan uses only about 30 watts of electricity, and some models are adjustable to turn on only when more cooling or heating is needed in that particular room.

Setting the thermostat to continuous fan may also help, but note, it will increase your electric bill. The fan setting is most helpful if your new heat pump has a variable-speed blower, which allows the blower to continuously run on a low speed. Variable-speed blower motors are also more efficient than a standard blower motor.

The following companies offer booster fans: Aero-Flo Industries, 219-393-3555, www.aero-flo.com; Field Controls, 252-522-3031, www.fieldcontrols.com; and Suncourt Manufacturing, 800-999-3267, www.suncourt.com; and register deflectors: Ameriflow, 800-252-8467, www.ameriflowregisters.com; and Deflecto Corporation, 800-428-4328, www.deflecto.com.

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

Four to Be Inducted into South Dakota Cooperative Hall of Fame

A quartet of South Dakotans will be recognized for their service to the state's cooperative businesses during the 2015 South Daktoa Cooperative Hall oF Fame Induction Banquet Sept. 16 in Deadwood.

The 2015 inductees include Keith Hainy, Roy Ireland, Rodney Renner and Carlyle Richards. The induction banquet will be held at 6 p.m. at The Lodge at Deadwood.

Induction into the South Dakota Cooperative Hall of Fame is the highest honor that the cooperative community bestows on those men and women whose endeavors in the cause of the cooperative form of enterprises have been genuinely heroic. The South Dakota Cooperative Hall of Fame provides recognition for a person contributing in especially significant ways to the enhancement of the cooperative idea, its broader acceptance or to the substantial advancement of cooperative enterprise in any of its various forms.

Keith Hainey

Roy Ireland

Rodney Renner

Carlyle Richards

For information on attending the induction banquet, contact the South Dakota Association of Cooperatives at 605-945-2548.

S.D. Attorney General's Office to Challenge EPA's Clean Power Plan

South Dakota Attorney General Marty Jackley announced today the Environmental Protection Agency (EPA) has finalized the rule establishing performance standards for greenhouse gas emissions from new and existing fossil fuel fired power plants.

"We all recognize the importance of protecting our environment and developing energy efficiency, but I am concerned the EPA has exceeded its authority granted by Congress and reduced the decision-making authority of our State. The EPA's actions will directly affect energy costs and potential energy availability to South Dakota consumers. I intend to work with other State Attorneys General to protect our State decision-making authority and our consumers who heavily depend on energy in their everyday lives," said Jackley.

In 2014, several states submitted extensive comments on the Proposed Rule, explaining the Proposed Rule was unlawful. In addition, they also noted the EPA's failure to comply with notice and comment requirements. Now over a year later, these comments and related concerns have not been addressed as the EPA moves forward with the implementation of the rule.

Raising Royalty

Scientific Process Helps South Dakota Beekeeper Build Better Bees

By Susan Smith

Jon Kieckhefer, a former agronomist for South Dakota State University's Cooperative Extension Service, now spends most of his time raising bees west of Volga. But unlike most beekeepers, the Brookings native's primary goal isn't to produce honey.

"I'm not like other commercial beekeepers," he said. "Most do it for pollination and honey production. For the most part I raise and sell queens."

Kieckhefer's interest in honeybees began when he was 12 years old and a dead tree on his family's property turned out to be the home of a bee colony. His father, an entomologist with the United States Department of Agriculture, helped Kieckhefer move that bee colony from a birdhouse to a glass-covered box. The bees were successfully relocated. A dryer vent hose allowed them to come and go and the glass cover on the box allowed Kieckhefer to peek in on them when he wanted.

"I was like any kid fascinated with insects," he said. "I wanted to save them. I wanted to have them and be able to watch them."

That fascination caused him to start keeping his own bee colonies during graduate school at the University of Kansas. Several of his friends raised bees as a hobby. He began doing the same. When he moved back to South Dakota, the bees came with him. Demand and economics pushed him in the direction of breeding and selling queen bees. At that time, a colony cost $100 to $200. A queen cost $20 to $25. His bees wintered well, which attracted the attention of other beekeepers.

Workers act as attendants to the queen when they are in close proximity. The workers face the queen and tend to her needs. A queen is often marked by a beekeeper with a dot of paint on her thorax. The color of paint denotes the year she was raised. Years ending in 0 or 5 are blue. The mark identifies the age of the queen and makes her easier to find in the hive.

"More and more guys wanted to buy queens from me because I kept my bees in the winter," he said. "I didn't do anything special – if they survived they survived and if they didn't, they didn't."

He keeps 500 hives and harvests 15,000 to 20,000 pounds of honey from them per year, which he sells to wholesalers. And if he can help pollinate a local field, he does. But he primarily breeds and raises queens that have specific genetic traits he can guarantee by tracing their pedigree. They aren't big honey producers but they survive cold northern winters better, resist mites that decimate a hive when they get inside or make them more hygienic, which also cuts down on the mite problem. And it makes it possible for beekeepers to use fewer pesticides. When his bees are paired with bees that have

Milkweed is attractive to honeybees as a food resource, but carries a hidden peril with it. Honeybees are often unable to muster enough force to pull the pollen away from the flower. Page 9 Inset: Dandelions are valuable sources of pollen and nectar early in the spring for honeybees.

Photos Courtesy Jon Kieckhefer

a high production value, it's like the best of both worlds.

He uses a process of instrument insemination with his queen bees so that he knows which males with which traits are used in the fertilization process. Bees are everywhere in South Dakota, he said. Without the insemination process, Kieckhefer said it's difficult to know which males the queen mates with. He marks male bees with paint so he knows their original hive and the day they hatched. The average honeybeekeeper is not going to pay for a queen with a specific genetic makeup. But people who breed queens to sell to those producers do see the value in being able to guarantee bees that winter well or have other genetic benefits.

"The value is in the known genetic trait," Kieckhefer said.

That trait can then be used in other stock. The worker bees in a hive create a queen by feeding a female egg more protein – called royal jelly. This causes the ovaries to develop early, creating the queen. Worker bees short of a queen in their colony will choose one or a few cells with eggs inside to feed more of the royal jelly. People think a queen controls a colony of bees, Kieckhefer says, but that isn't completely true. Once the queens stop producing eggs, they are dethroned, so to speak. They will mate shortly after hatching and then keep that sperm for their lifetime – usually two to three years – some live longer. Once that sperm runs out, so does their productive life.

"The queen is there doing the egg laying for the hive," Kieckhefer said. "As soon as workers get upset with her, they just kill her and make a new one."

Kieckhefer sells a couple of different grades of queen – a production grade that can mate with whomever it wants because it is not going to be useful to produce queens with specific traits. Some of those queens go to South Dakota or Minnesota and mostly to hobbyist beekeepers. The pedigreed queens all go to queen breeders on the East or West Coast.

Currently there are more managed honeybee colonies than any time since the 1970s. Honeybeekeepers lose bees every year to death from natural causes, disease and not withstanding the winter. Beginning in 2006, Colony Collapse Disorder decimated a fair amount of hives. The cause is still unclear. Some blame the mites, some think it's related to pesticides and some even blame cell phone towers and power lines, Kieckhefer said.

"No one has come up with a satisfactory explanation of the vast loss," Kieckhefer said. But beekeepers are a fairly resistant bunch and make up their losses quickly, especially with new bees hatching every day in the summer months.

"Honeybees aren't in great danger of extinction," Kieckhefer said.

There are no native honeybee species in the United States. Colonists brought them all in from Eurasia for the purpose of producing honey, which is still the main attraction of keeping bees.

"Everyone's after that sweetness," Kieckhefer said.

According to the South Dakota Department of Agriculture, South Dakota typically ranks in the top five states for honey production, ranking third in 2008 with 21.3 million pounds. The state's bees produce a "highly desirable, mild-flavored and light-colored alfalfa and sweet clover blend." The value of the state's honey crop in 2008 was $28.6 million. Pollinating South Dakota's cash crop is another major component of beekeeping. It's something a producer typically gets for free via the natural process the bees go through to produce honey, but it adds $10.7 billion in value to state crops.

Kieckhefer continues to keep bees – enduring daily stings, sometimes in uncomfortable places like inside the nostril or ear drum – because of the addictive quality of the work. Most people who try to keep bees either stop right away, he said, because they hate being stung or become addicted and collect more and more hives.

"There's nothing more relaxing than working with bees," he said. "You stop thinking about yourself and focus on the bees. It's kind of a meditative experience to do that. You're working in their world rather than your own."

Sweet clover is the flower that produces most of the "clover honey" that characterizes much of the honey production in the Dakotas. Sweet clover produces heavy nectar flows and the resulting honey is light in color and mild in flavor. Yellow and white sweet clovers are common plants in roadside ditches and pastures in the Dakotas and migratory beekeeping operations try to time moving their bees into the northern plains to maximze honey crops from sweet clover blooms.

A honeybee colony reproduces by raising a new queen, then one of the queens (usually the old queen) and roughly half of the workers leave to find a new hive location. While the workers are searching for a suitable site to build a new hive, the group of bees – called a swarm – may alight temporarily in exposed locations. The queen in this swarm of bees on a wooden fence post was somewhere in the middle of the mass of bees.

2015 Rural Electric Youth Excursion:

Energizing Fun

By
Brenda Kleinjan

Fifty-seven teens from across South Dakota and western Minnesota represented 11 electric cooperatives on the 2015 Youth Excursion tour to North Dakota. The three-day excursion was held on July 28-30. During the trip, students learned about the basics of cooperatives, how the region's Touchstone Energy® Cooperatives work together and career opportunities at cooperatives.

The students began their journey at cooperatives throughout the state, making their way to the University of Mary, Bismarck, N.D., where they would call home for the next three days.

On Wednesday, they spent the day touring Basin Electric Power Cooperative facilities near Beulah, N.D. The students toured the Great Plains Synfuels Plant, operated by Basin Electric subsidiary Dakota Gasification Company. The synfuels plant transforms coal into natural gas and other byproducts. After touring DGC, the students went next door to see the Antelope Valley Station, a 900-megawatt coal-fired power plant. At the plant the students peaked into the 277-foot boiler which transforms heat produced from the coal into steam energy which then turns the plant's turbines.

Next on the agenda was a tour of Coteau properties Freedom Mine, which supplies coal to both DGC and AVS. Students watched as the mine's dragline removes huge buckets of overburden from above the mine's coal seam. The bucket on the dragline can hold the equivalent of four Chevrolet suburban vehicles. The students also watched as the

mines' 300-ton coal haulers transported lignite coal form the coal pit to the handling facilities near AVS and DGC.

The last stop of the day was a drive through the 40-MW Wilton Wind Farm north of Bismarck. The farm is operated by FPL Energy and Basin Electric purchases the energy output of the farm.

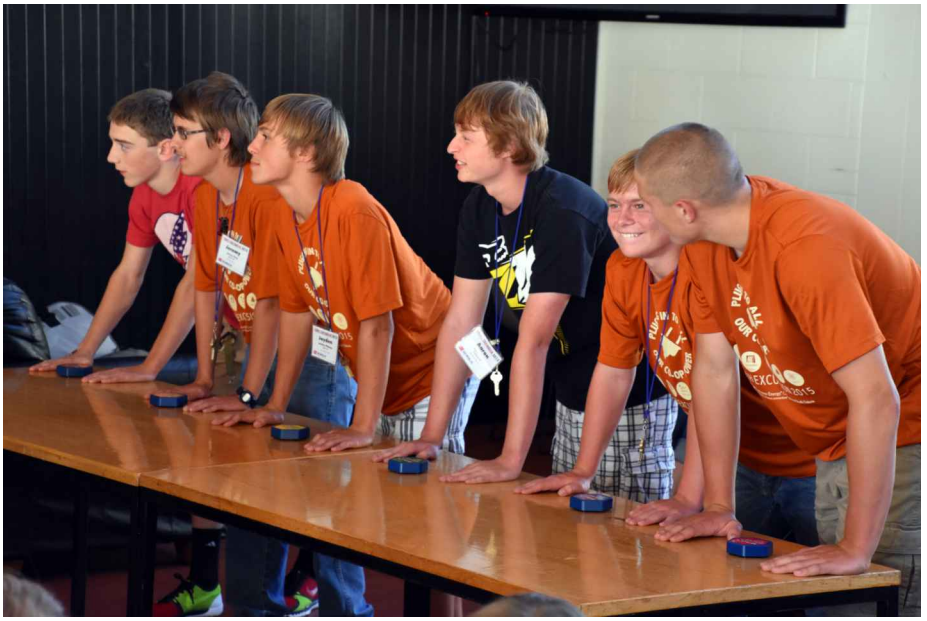
A scheduled riverboat cruise on the Missouri River was cancelled due to weather, so a bit of free time was spent at the shopping mall. They concluded the trip with a game show quiz contest, team building exercises and a game night and dance. On Thursday morning, they squeezed in one more tour of a national information technology cooperative before heading home.

It was a fun-filled three days. If you would be interested in going, please contact the office for more details. We will be looking for five freshmen or sophomore students to send next July.

Left: Students are all smiles as they board an elevator to go to the Antelope Valley Station's 17th floor. **Below:** A team building exercise brings out lots of laughter.

Above: Basin Electric tour guide Daryl Hill explains a turbine in the Antelope Valley Station.

Below: Hill gives students a peak into the insides of one of Antelope Valley Station's two boilers.



Above: Youth Excursion participants are ready to answer electric-related trivia answers as part of their youth excursion experience. **Opposite Page Above:** Basin Electric tour guide Daryl Hill uses a model of the Antelope Valley Station to explain how the plant functions. The model was used for the plant's construction in the early 1980s. **Opposite Page Bottom:** Participants of the 2015 Youth Excursion gather for a group photo.

2015 Youth Excursion Participants

Bon Homme Yankton Electric Association, Tabor
Katrina Hauger, Volin, SD
Taylor Lee, Irene, SD

Butte Electric Cooperative, Newell
Bridger Gordon, Whitewood, SD
Danika Gordon, Whitewood, SD

Codington-Clark Electric Cooperative, Watertown
Isaia Deloera, South Shore, SD
Marissa Holinka, Watertown, SD
Houston LaQua, Watertown, SD
Rob Poore, Summit, SD
Joshua Roberts, Watertown, SD
Nick Sadler, Watertown, SD
Daniel Tesch, Watertown, SD
Leslie Zubke, Watertown, SD

FEM Electric Association, Ipswich
Josh Burgod, Ipswich, SD
Hunter Graham, Ipswich, SD
Bryce Malsam, Roscoe, SD

Grand Electric Cooperative, Bison
Ross Collins, Prairie City, SD

Lacreek Electric Association, Martin
Jeremy Ring, Norris, SD
Mia Twiss, Porcupine, SD

Lake Region Electric Association, Webster
Grant Gonsor, Watertown, SD
Riley Johnson, Webter, SD

Northern Electric Cooperative, Bath
Andrew Artz, Aberdeen, SD
Tucker Bohl, Mellette, SD
Madison Hardy, Bath, SD
Aleigha Howell, Columbia, SD
Sye Skjefte, Mina, SD
Matthew Sperry, Bath, SD
Braden Terry, Redfield, SD
Jazzlyn Tschetter, Carpenter, SD
Brenyn Whitney, Aberdeen, SD

Sioux Valley Energy, Colman
Morgan Blake, Colton, SD
Victoria Braley, Brandon, SD
Matt Eigenberg, Brandon, SD
Ethan Geraets, Humboldt, SD
Kaci Hall, Crooks, SD
Brayden Harris, Brandon, SD
Amanda Haugen, Colman, SD
Alena Hilfers, Jasper, MN
Donovan Hohn, Hartford, SD
Morgan Johnson, Madison, SD
Jacob Kasowski, Hartford, SD
Jacob Koch, White, SD
Alex Miller, Brandon, SD
Rachel Miller, Volga, SD
Brock Newman, Baltic, SD
Hannah Osterberg, Volga, SD
Kathy Parsley, Flandreau, SD
Jayden Pittman, Baltic, SD
Rachel Regalado, Elkton, SD
Carter Schmidt, Colman, SD
Makayla Welbig, Flandreau, SD
Ali Woodward, Brandon, SD

West River Electric Association, Wall
Riley Finck, Rapid City, SD
Shayla Heid, Piedmont, SD
Aaron Kukla, Piedmont, SD
Jordyn Thayer, Rapid City, SD
Randee Thayer, Rapid City, SD

Whetstone Valley Electric Cooperative, Milbank
Angie Hoeke, Milbank, SD
Becca Loeher, Milbank, SD
Mallory Trapp, Milbank, SD

Under the Stars

Drive-in Movie Theaters Draw Movie Fans

By Terry Woster

Outdoor drive-in movie theaters may be a relic of the past in much of rural America, but in a few South Dakota communities, they are still packing in the crowds for full-length movies under the stars.

For a couple of generations, the term "big screen" forever will mean a massive, flat movie screen sticking above the prairie with a first-run movie viewed by families from the comfort of their automobiles. It's Danny Zuko and Sandy from the movie "Grease," a memory of a simpler time when a date on a summer night meant a trip to a double-feature or a dusk-to-dawn extravaganza on a holiday weekend.

Only a handful of drive-in theaters continue to operate in South Dakota, but the owners of those that still show movies say business is strong.

"This past year has been excellent, just phenomenal," says Ron Maier, owner of the Pheasant Drive-In in Mobridge. "Really, I can't believe it."

Maier, who says he grew up in and around the movie-theater business, "can't remember a time when I wasn't around the movie business."

He has gone digital with the business, as have other remaining outdoor theaters. The movie companies, he says, quit offering film a couple of years ago. The conversion was a significant investment, but Maier says it has been worth the effort.

"We're seeing a lot of repeat customers, a lot of people bringing their grandchildren," he said. "It's maybe some nostalgia. They kind of remember the good old days."

While Maier is keeping a long-time business in operation, Roy Reitenbaugh is finding success with his three-year-old twin screens near Hermosa. In a sort of West River version of the "Field of Dreams" theme, "If you build it, they will come," Reitenbaugh opened Roy's Black Hills Twin Drive-In in July of 2012. The drive-in shows movies seven days a week, offers a concession stand and has drawn a steady stream of tourists during the summer.

"We've had people from France, Finland, England, Canada, you name it," Reitenbaugh says. A Canadian family told him they'd planned their vacation two months earlier and a stop at his outdoor

Below: The concession stand glows as a trailer shows before a Monday night showing at Miller's Midway Theater this summer. Inset: Popcorn, soda and candy are must-haves in the concession stand. Opposite Page: Cars and lawn chairs line the Midway Theater's lot for the showing of Minions this summer.

Photos by Brenda Kleinjan/SDREA

theater was a priority. The price is $8 for adults and $6 for children.

Drive-in theaters of old often featured variations of "buck night," a promotion that allowed a carload – as many people as could fit in the vehicle, trunk and all, sometimes – to attend a showing for $1 or $2 or whatever bargain price the market would bear. At Reitenbaugh's theater, Thursday nights are carload nights, with a $16 tab for as many people as fit into the vehicle.

"They really believe in it down here," he says of his carload-night audiences.

Black Hills Electric Cooperative, Custer, S.D., provides the power for the twin theaters. Mike Chase of BHEC says it was unusual to be asked to provide the power to a brand-new drive-in theater, but the job itself was pretty routine.

Over on Highway 14 near Miller, the Midway Drive-In has been in operation since 1953.

The bill featured "Minions" the first weekend in August, followed by "Spy." Five families currently own the theater, says Mike Donlin, one of the owners.

"Kids' movies do better than anything else, but we try to cater to different crowds," Donlin said.

Operating the drive-in is both a business and a way to keep a piece of the past alive, he said.

"People our age know about drive-ins, but their kids and grandkids often have never experienced an outdoor movie," Donlin said. "In a way, it's preserving a piece of history. From an accountant's point of view, I don't know that these things would pay, but we have five families involved and some day the kids and grandkids, they'll be the ones to take it over."

Donlin started in the drive-in business as a youngster, receiving a lesson on operating the projection equipment on a Tuesday and running the show the next night.

The screen blew down in a strong summer storm in 1968, the Midway's web site says. It also says, "The screen was rebuilt right away and movies were shown throughout the rest of the summer."

Friday evenings at the Midway are "Pierre night," Donlin said. "For some reason, a majority of the audience on those nights consists of folks from Pierre who have driven 70 miles to see a movie, outside, on a big screen, with the last rays of sun disappearing in the west and stars filling the open sky above.

Outdoor theaters may be a dying breed elsewhere, but in a few South Dakota communities, they thrive. Asked what he sees as the future of his business, Maier in Mobridge says simply, "I can't remember not being around the movie business. I guess I really haven't thought of slowing down."

Gregory: Hilltop Drive-In Theatre
33575 US Hwy 18 Gregory, SD • Phone: 605-830-6058

Hermosa: Roy's Black Hills Twin Drive-In
810 Tanaya St., Hermosa, SD • Phone: 605-255-5333

Luverne: Verne Drive-In Theater
US Hwy 75, Luverne, MN • Phone: 507-283-0007

Miller: Midway Theater
US Hwy 14 Midway between Miller and St. Lawrence, SD
Phone: 605-870-0108

Mobridge: Pheasant Drive-In Theater
1600 20th St W, Mobridge, SD • Phone: 605-845-2021

Redfield: Pheasant City Drive In Theater
17230 US Hwy 281, Redfield, SD • Phone: 605-460-1944

Pheasant City Drive In Theater, Redfield

Bin Building Frenzy Underway

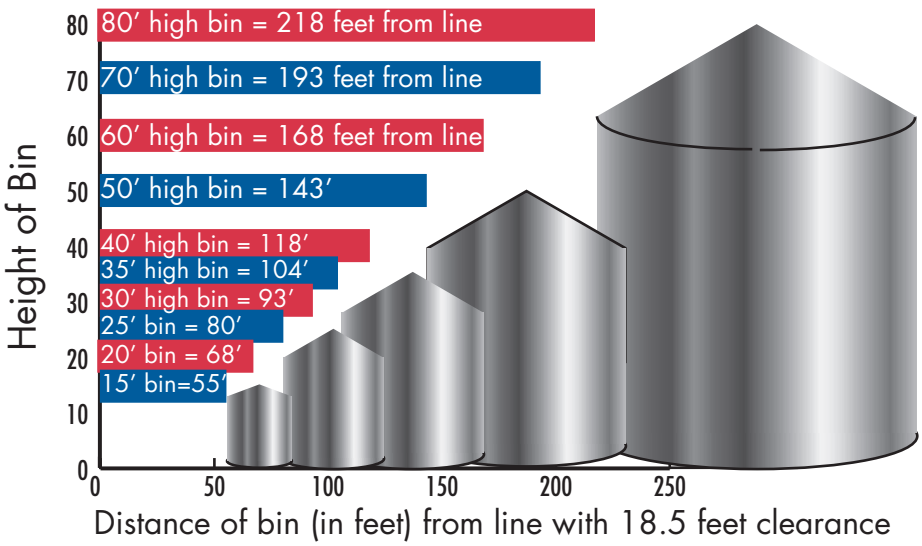
The Right Place

Summer storms and normal expansion plans have several ag producers in the state planning to build new or replacement grain bins throughout the state.

Early on in the process – right up there with choosing the bin size and lining up a building crew – should be a call to the local electric cooperative.

The call can help producers properly place their new bins in relationship to existing power lines. Adequate clearances can reduce the risk of accidental contact between power lines and tall farm equipment such as portable grain augers, elevators or grain probing devices. The National Electrical Safety Code (NESC)* requires specific line clearance requirements for grain bins located near power lines. Building a grain bin too close to a power line may mean that it will have to be moved, often at the farmer's expense. For example, a 35-foot tall bin should be placed no less than 104 feet away from the power line. Taller bins that can be filled by a portable grain auger must be placed even further from power lines.

Proper siting of grain bins in relation to existing high voltage power lines is extremely important.



Based on a typical power line having a vertical clearance of 18.5 feet above the ground and a supply line phase to ground voltage of more than 750 V to 22KV; National Electrical Safety Code Rule 232.

In addition to safety considerations, there are also requirements for power line clearances which are mandated by national wiring codes. A bin placed too close to a power line may need to be moved or the power line relocated (i.e. raised or rerouted) due to a code violation. These changes are likely to be expensive and may be charged to the bin owner. Talk with your electric supplier **before** the bin site is confirmed.

The NESC specifies the line clearance requirements for grain bins located close to power lines. The NESC specifies both the horizontal distance between the side of the bin and an adjacent power line and the vertical clearance above the bin to the nearest power line (NESC Article 234, Section F).

To assist in understanding clearance rules mandated by the NESC, a further explanation is provided in Appendix I of this pamphlet. Appendix II provides a complete listing of the requirements as reprinted from the NESC. Notice that bins filled by permanently installed augers, conveyers or elevator systems are treated separately from bins filled by portable augers. These rules also apply to feed storage bins, such as hopper bottom bins serving livestock production buildings. Anyone involved in the site planning and construction of grain bins should read and understand Appendix II.

Note: Requirements of the National Electrical Safety Code, Article 234, Section F pertain only to bins or power lines constructed after August 1989. Bins or power lines installed prior to this date are not required to conform to these clearance rules. However, additions to an older bin which increases its height may cause it to now be covered by NESC requirements.

The simplest and least expensive way to avoid these costly line construction requirements is to locate bins far enough away from overhead power lines so that the NESC clearance envelope is not violated. The table below lists the minimum horizontal distance needed between

grain bins of various sizes and a typical power line. Placing bins at these distances reduces the chance of an electrical accident and avoids the need for special power line construction. This helps both the farmer and the power supplier.

The taller the bin, the greater the distance it must be from the power line.

* The NESC is a code which specifies minimum construction standards for safe transmission and distribution of electricity to the meter location.

Appendix I: Discussion of National Electrical Safety Code, Article 234, Section F

This section provides additional discussion and details on the requirements of NESC 234, Section F. Note that only bins or power lines constructed after August 1989 are affected by these requirements.

Considering horizontal clearances first, the NESC specifies clearances for both the nonloading and loading sides of a grain bin (refer to Figure 234-3 on the adjoining page). The nonloading side of a bin is that area where an auger, conveyor, elevator or other filling device cannot operate due to an obstruction. Typical obstructions include public roads, permanent fences, abutting buildings or any other permanent structure. Just because the bin is not typically filled from a particular side does not define it as the nonloading side of the bin. A permanent obstruction must exist that prevents loading of the bin.

The required distance from the power line to the side wall of the bin for nonloading sides must be at least 15 feet. If the 15-foot distance is not met, either the power line or the grain bin must be moved.

On the loading side(s) of the bin, distances must be greater, due to a greater risk of accidents. The distance horizontally from the bin wall to the power line is determined by the height of the highest access door or other probing port of the bin. In 234-3, this height is defined as V. Adding a distance of 18 feet to V determines the value H in Figure 234-3. Beyond this H distance, a minimum sloped clearance of 1 foot vertical drop for each 1.5 feet of horizontal travel must be designed. The NESC ruling also specifies the vertical clearance above the bin between the top of the bin and the nearest overhead line. A clearance of at least 18 feet directly above the highest opening or probing port must be maintained. This 18-foot clearance must encircle the bin around all loading sides, out to distance H as shown in the figure. These rules define the "envelope clearance" that must exist around the bin.

Appendix II: Reprint of Article 234, Section F from the National Electrical Safety Code.

Clearances of Wires, Conductors, Cables and Rigid Live Parts From Grain Bins

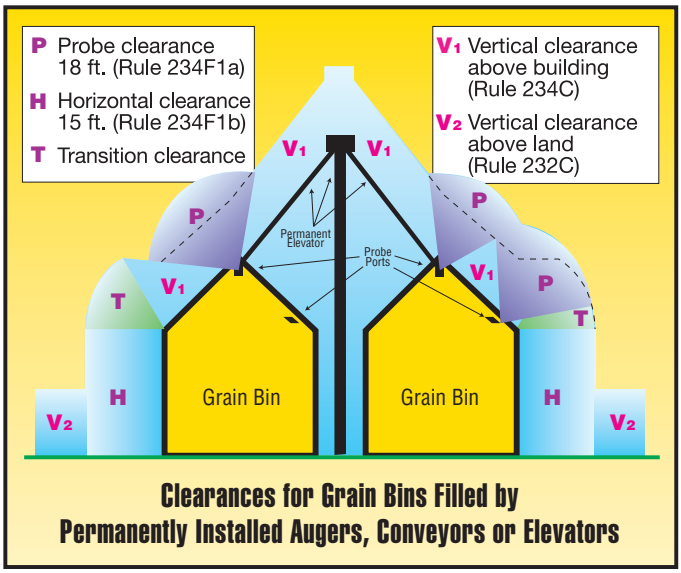
1. Grain Bins Loaded By Permanently Installed Augers, Conveyors or Elevator Systems: All portions of grain bins that are expected to be loaded by the use of a permanently installed auger, conveyer or elevator system may be considered as a building or other installation under Rule 234C for the purpose of determining appropriate clearances of wires, conductors, cables and rigid live parts, except that a vertical clearance above the bin of not less than 18 feet (5.5 meters) shall be maintained above the level of the highest probe port.

2. Grain Bins Loaded by Portable Augers, Conveyors or Elevators (With No Wind Displacement)

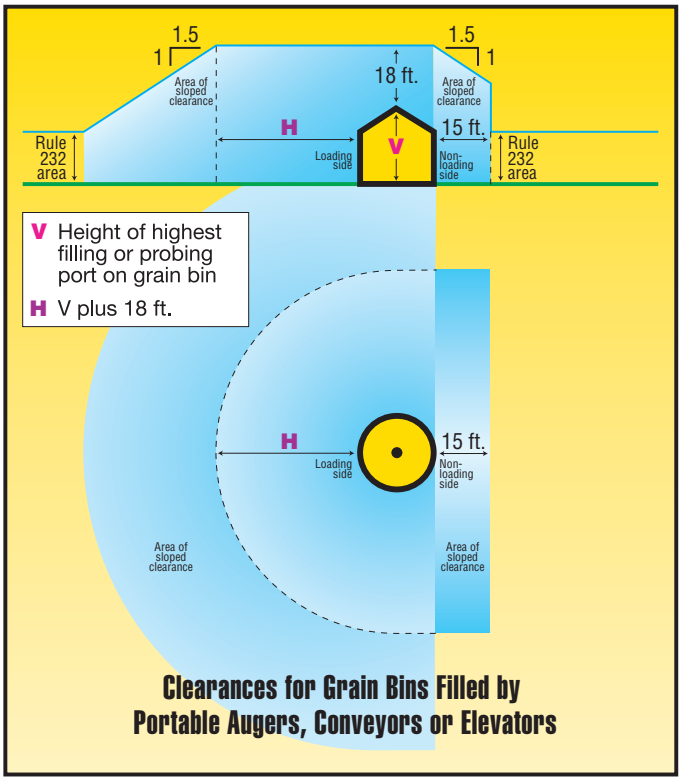
a. The clearance of wires, conductors, cables and rigid live parts from grain bins that are expected to be loaded by the use of portable auger, conveyer or elevator shall be not less than the values illustrated in Fig. 234-3.

EXCEPTION: Clearances of the following items on the nonloading side of grain bins shall be not less than those required by Rule 234C for clearances from buildings:

1) support arms, effectively grounded equipment cases



Clearances for Grain Bins Filled by Permanently Installed Augers, Conveyors or Elevators



Clearances for Grain Bins Filled by Portable Augers, Conveyors or Elevators

2) Insulated communication conductors and cables, messengers, surge-protection wires, grounded guys, neutral conductors meeting Rule 230E1 and supply cables meeting Rule 230C1.

3) Supply cables of 0 to 750 V meeting Rules 230C2 or 230C3

b. Any side of a grain bin is considered to be a nonloading side if it is so designated or if it is so closely abutting another structure or obstruction or so close to a public road or other right-of-way that a portable auger, conveyor or elevator is not reasonably anticipated to be used over that side or portion to fill the grain bin.

c. Where an agreement excludes the use of portable augers, conveyors or elevators from a designated portion of a grain bin, such portion is considered to be a nonloading side.

August 20-23
Kool Deadwood Nites
Deadwood, SD, 605-578-1876

August 21-23
Summer Arts Festival
Riverside Park
Yankton, SD, 605-665-9754

August 27-30
Hugh Glass Rendezvous
Lemmon, SD, 605-393-5832

August 27-30
Prairie Village 53rd Annual
Steam Threshing Jamboree
Madison, SD, 605-256-3644 or
800-693-3644

August 29
Blackout Motors Show and
Shine, Noon to 7 p.m.
Yelduz Shrine Center
Aberdeen, SD, 605-645-8790

September 3-7
South Dakota State Fair
Huron, SD, 605-353-7340

September 3-7
CRST Labor Day Fair
Powwow and Rodeo
Eagle Butte, SD, 605-964-6685

September 4-6
LifeLight Festival
Worthing, SD, 605-338-2847

September 4-6
Flavor Days, 9 a.m. to 8 p.m.
Spearfish, SD, 605-645-1880

September 5
Roughstock Challenge, 7 p.m.
Tripp County Rodeo Grounds
Winner, SD, 605-842-1533

PHOTO COURTESY OF MARY COFFIN

Events of Special Note

September 6
Studebaker and Packard Car
and Truck Show and All Makes
of Car Parts Swap Meet
Custer, SD, 605-431-4502

September 12
Vintiques Classic Car Show
Watertown, SD, 605-881-6892

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.

September 5
Third Annual Rush-No-More
Car Show and Shine
Sturgis, SD, 605-347-2916

September 6
South Dakota Auctioneers
Association State Bid Calling
Contest, South Dakota 4-H
Foundation Benefit Auction
South Dakota State Fair
Dakota Land Stage, 2 p.m.
Huron, SD

September 11-13
James Valley Threshing and
Tractor Show
Andover, SD, 605-881-5978

September 12
Sidewalk Arts Festival
Sioux Falls, SD, 605-367-7397

September 12
Foothills Bud Light Bull Bash
Jerauld County 4-H Rodeo
Grounds, Wessington Springs, SD
605-770-4370

September 12
Living History Fall Festival
Granary Rural Cultural
Center, Groton, SD
granaryfinearts.org

September 12-13
Beef N Fun Festival
Mobridge, SD, 605-845-2500

September 17-18
St. Joseph's Indian School
39th Annual Powwow
Chamberlain, SD
605-234-3452

September 18-19
Deadwood Jam, Main Street
Deadwood, SD, 605-578-1876

September 18-20
North Country Fiber Fair
Watertown, SD, 605-956-7909

September 19-20
NESD Celtic Faire and Games
Aberdeen, SD, 605-380-5828

September 26
Family Health and
Safety Festival
11 a.m. to 3 p.m.
First Presbyterian Church
Sioux Falls, SD, 605-371-1000

September 26
South Dakota Women's Expo
South Dakota
State Fairgrounds
Huron, SD, 605-353-7340

September 26
Great Downtown
Pumpkin Festival
Rapid City, SD, 605-716-7979

September 26-27
Pioneer Power Show
Menno, SD, 605-387-5770

September 30-October 4
South Dakota Film Festival
Aberdeen, SD, 605-725-2697