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Cooperative Connections

JULY 2015 VOL. 67 NO. 7

CELEBRATING THE FOURTH

Pg. 8



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South Dakota Electric Cooperative Connections

ISSN No. 1067-4977

Produced by the following electric cooperatives in South Dakota and western Minnesota:

Black Hills Electric, Custer, S.D.
Bon Homme Yankton Electric, Tabor, S.D.
Butte Electric, Newell, S.D.
Cam Wal Electric, Selby, S.D.
Central Electric, Mitchell, S.D.
Charles Mix Electric, Lake Andes, S.D.
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West Central Electric, Murdo, S.D.
West River Electric, Wall, S.D.
Whetstone Valley Electric, Milbank, S.D.
City of Elk Point, S.D.

South Dakota Electric Cooperative Connections is published monthly for \$6 annually for member cooperatives, \$12 annually for non-members by South Dakota Rural Electric Association, 222 W. Pleasant Drive, Pierre, S.D. 57501. Correspondence to: Editor, *South Dakota Electric Cooperative Connections*, PO Box 1138, Pierre, SD 57501; telephone (605) 224-8823; fax (605) 224-4430; e-mail editor@sdrca.coop

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TDC Communications, Deadwood

Guest Editorial

The Power of American Independence

Celebrating July 4th and Declaring Our Energy Independence

Fireworks and flags. Cookouts and cold drinks. The Fourth of July is a festive day on which we celebrate our nation's independence with family and friends. Typically, this is not a day of quiet reflection. While we spend a lot of energy having fun, if we give any thought about our forbearers and their determined efforts to bring about our nation's independence, it's fleeting.

An independent spirit is a part of our DNA

However, it is worth reflecting that this uniquely American spirit of independence remains part of our collective DNA more than 200 years after the independent nation of the United States was formed and the Declaration of Independence was crafted. And this sense of independence has served us well. For example, more than 70 years ago, an independent streak inspired groups of farmers across America's countryside to band together and improve their quality of life. Aside from President Franklin Roosevelt's promise of federal aid in the form of low-interest loans and engineering expertise, rural Americans had little help in bringing electricity to their homes. So, they did it themselves by pulling together and working cooperatively – a shining example of American determination and ingenuity.

For the past 40-plus years, nearly every president since Richard Nixon, during the time of the Arab oil embargo, has talked about the goal of U.S. energy independence – reducing our reliance on imported oil and other forms of foreign energy. Today, while we still have a ways to go, we are closer to that goal than ever before. We are exporting more gas and importing less foreign fuel than in recent memory. American ingenuity in the form of new technology and innovation is opening up more options and spurring greater efficiency across all forms of energy. According to the Energy Information Agency, energy expenditures as a share of gross domestic product (GDP) are forecast at 6.2 percent in 2015, their lowest level since 2002, reflecting both lower oil prices and ongoing increases in energy efficiency.

The road to energy independence

Consumers have an important role to play in the road to energy independence. They don't have to wait for Democrats and Republicans to agree or environmentalists and fossil fuel advocates to reach consensus on a path to energy independence. Consumers can play a part in moving us toward national energy independence by taking action in simple, practical ways – insulating and caulking around windows, doors and electrical outlets; washing clothes in cold water instead of hot; replacing air filters; installing a programmable thermostat; and using more energy efficient appliances and home heating and cooling systems. Efficiency efforts can cut costs for individual households, but the collective benefit to our country is even greater.

Electric co-ops provide renewable energy resources

In addition, electric co-ops across the country, have been actively engaged in promoting renewable energy resources like wind, solar, hydropower and biomass (including landfill gas, livestock waste, timber byproducts and crop residue). Today, nearly 95 percent of the nation's 900-plus electric co-ops provide electricity produced by renewable sources, all playing a key role in powering rural America while fostering our nation's energy independence.

Recent advances in technology are transforming how we make and move electricity, and over time, these changes will greatly improve not only the efficiency but the reliability of electric power. So this Fourth of July, as you gaze up at the fireworks lighting up the night sky, reflect on the enduring spirit of independence that is integral to our American character. *Anne Prince writes on consumer and cooperative affairs for the National Rural Electric Cooperative Association, the Arlington, Va.-based service arm of the nation's 900-plus consumer-owned, not-for-profit electric cooperatives.*

Fourth of July Safety Tips

Using fireworks on our nation's birthday is as traditional as cookouts and parades.

The National Council on Fireworks Safety offers these common sense safety tips for using fireworks in the hopes that injuries to consumers can be greatly reduced this season.

- Obey all local laws regarding the use of fireworks.
- Know your fireworks; read the cautionary labels and performance descriptions before igniting.
- A responsible adult should supervise all firework activities. Never give fireworks to children.
- Alcohol and fireworks do not mix. Save your alcohol for after the show.
- Wear safety glasses when shooting fireworks.
- Light one firework at a time and then quickly move away.
- Use fireworks outdoors in a clear area; away from buildings and vehicles.
- Never relight a "dud" firework. Wait 20 minutes and then soak it in a bucket of water.
- Always have a bucket of water and charged water hose nearby.
- Never carry fireworks in your pocket or shoot them into metal or glass containers.
- Do not experiment with homemade fireworks.
- Dispose of spent fireworks by wetting them down and place in a metal trash can away from any building or combustible materials until the next day.

Keep your pets safe

The ASPCA Animal Poison Control Center offers the following tips for your pet:

- Never leave alcoholic drinks unattended where pets can reach them.
- Do not apply any sunscreen or insect repellent product to your pet that is not labeled specifically for use on animals.
- Always keep matches and lighter fluid out of your pets' reach.
- Keep your pets on their normal diet.
- Do not put glow jewelry on your pets or allow them to play with it.
- Keep citronella candles, insect coils and oil products out of reach.
- Never use fireworks around pets!
- 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: fireworkssafety.org; aspc.org

Kids' Corner Safety Poster

"Mom, we need to buy some outlet covers."



Gracie Zeeb, 11 and Deni Zeeb, 13

They are the daughters of Brian and Shannon Zeeb, Pierre, S.D. They are members of Oahe Electric Cooperative, Blunt, 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.

Contacting Washington, D.C.

As Americans celebrate Independence Day this July, it's important to note that with our form of government involves the people to get — and stay — involved in the political process.

Electric cooperative members can engage with their Senators and Representatives in Washington, DC, through action.coop and voice their opinions on a variety of matters affecting electric cooperatives. Here's contact information for reaching your elected officials in Washington, DC.:

South Dakota Congressional Delegation

Senator John Thune
511 Dirksen Senate Office Building
Washington, DC 20510
Phone: 202-224-2321, www.thune.senate.gov

Senator Mike Rounds
502 Hart Senate Office Building
Washington, DC 20510
Phone: 202-224-5842, www.rounds.senate.gov

Representative Kristi Noem
2422 Rayburn House Office Building
Washington, DC 20515
Phone: 202-225-2801, <http://noem.house.gov>

Minnesota Congressional Delegation

Senator Al Franken
309 Hart Senate Office Building
Washington, DC 20510
Phone: 202-224-5641, www.franken.senate.gov

Senator Amy Klobuchar
302 Hart Senate Office Building
Washington, DC 20510
Phone: 202-224-2344, www.klobuchar.senate.gov

Rep. Timothy Walz, 1st Minnesota Congressional District
1034 Longworth House Office Building
Washington, DC 20515
202-225-2472, <http://walz.house.gov>

Rep. Collin Peterson, 7th Minnesota Congressional District
2204 Rayburn House Office Building
Washington, DC 20515
202-225-2165, <http://collinpeterson.house.gov>

Nebraska Congressional Delegation

Senator Deb Fischer
454 Russell Senate Office Building
Washington, DC 20510-2705
Phone: 202-224-6551, www.fischer.senate.gov

Senator Ben Sasse
340E Dirksen Senate Office Building
Washington, DC 20510
Phone: 202-224-4224, www.sasse.senate.gov

Rep. Adrian Smith, 3rd Nebraska Congressional District
2241 Rayburn House Office Building
Washington, DC 20515
Phone: 202-225-6435, <http://adriansmith.house.gov>

Delicious Desserts



Rhubarb Dessert for Two

1-1/2 cups cut-up rhubarb	2 tsp. strawberry gelatin
1/2 apple, cut-up	1/4 cup flour
1/4 cup water	1/2 cup brown sugar
1/2 cup frozen strawberries	3 T. butter, melted
1/4 cup sugar	3/4 cup oatmeal

Spray a 1-1/2-quart baking dish with cooking spray. Put rhubarb, apple, water, strawberries, sugar and gelatin in bottom of pan. Mix flour, brown sugar, butter and oatmeal. Put on top of rhubarb mixture. Bake at 350°F. for 35 minutes. Very good while still warm with ice cream or whipped cream.

Darlene Price, Prairie City

Easy Strawberry Pie

2 cups water	1 (3 oz.) box strawberry gelatin
1 cup sugar	
3 T. cornstarch	1 graham cracker pie crust or baked pie shell
Strawberries	

Combine first 3 ingredients; boil until clear. Add gelatin. Cool and add strawberries. Pour into pie shell.

Marianne Thompson, Colome

Wanda's Fluffy Lemon Dessert

2 cups graham cracker crumbs	8 oz. cream cheese, softened
4 oz. (1 stick) margarine, melted	1 cup sugar
	2 tsp. vanilla
1 (3 oz.) box lemon gelatin	1 (13 oz.) can evaporated milk, chilled
1 cup boiling water	

Mix graham cracker crumbs and margarine; press into a 9x13-inch pan. Dissolve gelatin in boiling water; cool until starting to set. Blend together cream cheese, sugar and vanilla until smooth. Combine cream cheese mixture with partially set gelatin. Using chilled bowl and beaters, whip evaporated milk until consistency of whipped cream. Fold cream cheese/gelatin mixture into whipped milk, then spread on crust. Chill until set. Serve topped with cherry or blueberry pie filling, if desired.

Nancy Stenson, Fort Pierre

Heath Bar Dessert

12 graham crackers, crushed	2 pkgs. instant vanilla pudding
12 soda crackers, crushed	2 cups milk
1 stick margarine, softened	2 cups chopped Heath bars

Mix together crackers and margarine. Pat into a 9-inch glass pan. Combine pudding and milk; fold in Heath bars. Spread on crust. Refrigerate.

Shirley Dreher, Clark

Pumpkin Pie Squares with Cinnamon Yogurt Topping

Crust	3/4 cup low-fat vanilla yogurt
1 cup graham cracker crumbs	1/2 cup low-fat milk
1/2 cup old-fashioned oats	1 tsp. cinnamon
1/4 cup brown sugar	1 tsp. pumpkin spice
1/4 cup butter, melted	1/4 tsp. salt
2 T. low-fat milk	1/2 cup pecans, chopped
Cooking spray	

Filling

2 cups canned pumpkin
2 eggs
3/4 cup sugar

Topping

2 T. sugar
1 tsp. cinnamon
1 cup plain nonfat yogurt

In a large bowl, mix together graham cracker crumbs, oats, brown sugar, butter and 2 T. milk. Press into a thin layer in a 9x13-inch pan greased with cooking spray. Bake at 350°F. for 10 minutes. While the crust is baking, in another bowl, beat together pumpkin through salt. Pour over crust and bake for 40 minutes or until set. Sprinkle pecans over pumpkin filling and bake an additional 10 to 15 minutes or until center is set. Cool slightly in pan. Mix together sugar and cinnamon. Mix in yogurt. Top each square with 1 T. of yogurt topping. Yield: 16 servings

Nutritional information per serving: 182 calories; 6g total fat (3g saturated fat); 35mg cholesterol; 28g carbohydrates; 2g fiber; 4g protein; 108mg sodium

Pictured, Cooperative Connections

Ice Cream Sandwich Dessert

2 boxes ice cream sandwiches	2 (8 oz.) containers whipped topping
12 Oreos, crushed	

Layer enough ice cream sandwiches to cover the bottom of a 9x13-inch pan. Cover with half the whipped topping and then half the crushed Oreos. Repeat steps 1 and 2. Keep in freezer until ready to serve.

Jillian Nedved, Harrisburg

My Family's Favorite Dessert

1 cup brown sugar	Miniature marshmallows
1/3 cup cocoa	Chocolate cake mix
2 cups water	Broken nut meats

Mix brown sugar and cocoa in a 9x13-inch pan. Add water. Cover this with miniature marshmallows. Prepare chocolate cake mix according to package directions. Spoon batter over mixture in pan. Top with nut meats. Bake at 350°F. for 45 to 60 minutes. If using a glass baking pan, reduce heat to 325°F. Serve with whipped topping.

Elaine Rowett, Sturgis

Please send your favorite salad, garden produce and pasta 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.

Roofing Materials Impact A/C Costs



Jim Dulley
www.dulley.com

Dear Jim: My black asphalt shingle roof needs to be replaced. I want to install a new roof that will last longer and help keep my home cooler during hot summer afternoons. What type of roof do you recommend? – Sandi J.

Dear Sandi: From the standpoint of a long life and keeping your home cooler,

a black asphalt shingle roof is probably the worst option. The dark color absorbs much of the sun's heat, which not only makes your home hotter and drives up your air-conditioning costs, but hastens the degradation of the shingle material itself.

A black shingle can easily reach 150 degrees Fahrenheit in the hot afternoon sun. If you have ever tried to lift a square (100 sq. ft.) of shingles, you know how heavy they are. When this thermal mass gets hot, it stores the heat and radiates it down into your home well into the evening.

Even if you have adequate insulation on the attic floor, the radiant heat from the hot roof easily passes through to room ceilings. Standard thermal insulation, such as batts and blown-in fiberglass or rock wool and cellulose, are most effective for blocking conductive heat transfer, but less so for radiant heat from a hot roof.

The two most common roofing materials for homes are shingles and metal. White shingles can be fairly energy efficient and effective for reflecting much of the sun's heat. Some white shingles even qualified for the former federal energy tax credit. Keep in mind, it takes very little color tint before shingles start to absorb heat, so white is the most efficient option.

Metal roofing can cost twice as much as shingles, but many types have lifetime warranties and they can reflect the majority of the sun's heat. Aluminum and steel are the two most common and reasonably priced materials. Copper is attractive and durable. It is quite expensive, but the natural aged patina color is beautiful and it absorbs heat well.

I installed an aluminum simulated shake roof on my own home five years ago while the energy tax credit was in effect. My roof consists of 1-foot by 2-foot interlocking panels with a special heat-reflecting paint coating. The panels are made of recycled aluminum from soda pop cans and are formed to look like cedar shakes.

Aluminum is a particularly efficient roofing material because

the underside surface of the roofing panels is bare. With a low emissivity rating, it does not allow the heat from the hot metal to pass through to the roofing lumber and insulation below. When selecting an aluminum roof, it is important that its contour provides an air gap over the sheathing for its low-emissivity properties to be effective. A simulated clay tile aluminum roof is also very effective with the many air gaps under it.

After my aluminum roof was installed, the second floor bedrooms stayed much cooler during summer afternoons. The only drawback to an aluminum metal roof is you must be careful walking on it and stepping on the high shake's edges so it is not damaged. During winter, snow sometimes slides off in large sheets and crushes shrubs and blocks the garage door. Snow stops can be glued to the roof to stop this, but they may also catch leaves and debris from nearby trees.

Painted steel roofs are also available in many colors and simulated contours. The steel is treated with many layers of corrosion-resistant coatings so rust is not a problem. Steel roofs with an aluminum-alloy coating are particularly durable. Steel is very strong, so there are fewer problems with walking on it.

There are quite a few free, low-cost improvements and simple lifestyle changes you can make to reduce the amount of air-conditioning needed.

Since your old shingles are likely cracked with curled edges, they would have to be torn off before new shingles are installed. Most metal roofs, because of their rigidity, can be installed over existing shingles no matter what their condition. This saves the cost (often about \$1,000) of tearing off the old shingles.

Whether you choose white shingles or a metal roof with heat-reflecting paint, also consider installing an attic ridge vent. When replacing a roof, adding a ridge vent is a minor additional expense. If you install, make sure the soffit vents are not blocked by attic insulation. Even with the metal roof, adequate attic ventilation is needed for both summer and winter energy efficiency.

The following companies offer metal roofs: Classic Metal Roofing, 800-543-8938, www.classicmetalroofingsystems.com; Conklin Metal, 800-282-7386, www.conklinmetal.com; Englert, 800-364-5378, www.englertinc.com; Gerard, 800-237-6637, www.gerardusa.com; and McElroy Metal, 800-562-3576, www.mcelroymetal.com.

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

2015 Resource Conservation Speech Contest Winners

The 54th annual State Finals of the Resource Conservation Speech Contest were held at the State Capitol in Pierre on Saturday, April 25, 2015.

Winning first place and a \$1,100 scholarship was Logan Hattervig. Hattervig was sponsored by the Miner County Conservation District and is a junior at Howard High School. He is the son of David and Connie Hattervig of Carthage.



Receiving second place and a \$750 scholarship was Joanna Geffre. Geffre was sponsored by the South Brown Conservation District and is a sophomore at Aberdeen Central High School. She is the daughter of Jeannie Ryncarz of Aberdeen.

Receiving third place and a \$450 scholarship was McKayla Carda. Carda was sponsored by the South Brown Conservation District and is a freshman at Aberdeen Central High School. She is the daughter of John and Brenda Carda of Aberdeen.

Scholarships totaling \$2,300 for the winners are provided by Touchstone Energy® Cooperatives of South Dakota. The contest is co-sponsored by the South Dakota Department of Agriculture (SDDA), the U.S. Fish & Wildlife Service and the South Dakota Association of Conservation Districts.

The theme of this year's contest was "Technology: Bridging the Conservation Generation Gap." South Dakota high school students first participated in a local contest sponsored by their conservation district.

Two students from each district were then eligible to participate in an area contest. From there, the top two winners from each of the designated areas were eligible to advance to the state finals. This year, 10 contestants competed in the state finals.

Next year's theme is "Why Manage Water for Conservation?" For more information, contact your local conservation district office or SDDA at 605-773-3623.

Progress Continues on Urea Project at Dakota Gasification

The urea project construction site at the Great Plains Synfuels Plant is buzzing.

About 60 Dakota Gasification Company and contract employees are currently on site working on the project. Those numbers are projected to increase throughout the year and peak at 750 workers in 2016.

In May, Matt Greek, Basin Electric senior vice president of engineering and construction, requested an amendment to the urea project budget. The Dakota Gas board of directors approved a new budget of \$500 million. The budget had been originally set at \$402 million. General construction bids came in higher than estimated, partly resulting in the request to amend the budget.

Workers are focusing on below-ground construction activities, like the auger cast pilings and storm drainage systems. Crews are also working to complete the new craft parking lot, install a permanent guard shack, construct a permanent site access road and create additional material laydown yards.

A recent engineering milestone was met when a 70 percent computer model review was successfully completed. The model shows the steel structures, mechanical, piping and electrical systems for the urea plant.

Engineering is also working to issue structural steel drawings to the steel fabricator, a North Dakota company, for the Melt building. Other members of the engineering team are preparing concrete foundation drawings for issue in June. The goal is to complete engineering for the project in the fourth quarter 2015.

AECOM Technology Corporation was chosen to be general contractor for the project, and should be on site in June.

Several pieces of equipment have also arrived at the plant. A stripper, scrubber and pool reactor will arrive from Austria in November.

EVEN THREE IS A CROWD.

NEVER OVERLOAD OUTLETS.

Helping members use electricity safely, that's the power of your co-op membership. Learn more from the experts themselves at TogetherWeSave.com.

Hometown Traditions Put **Sparkle** and **Pop** into Fourth of July Celebrations

By Brenda
Kleinjan

FROM FULL-FLEDGED PARADES TO BIKE PARADES, thrilling rodeo action to the song of the drum at wacipis, communities in South Dakota and western Minnesota offer a variety of traditions each Fourth of July.

In eastern South Dakota along U.S. Highway 212, Kranzburg, population 210, will see crowds gathering in the early morning for the community's mid-morning parade. While organizers don't have

an actual head count, the county sheriff has estimated the crowds to exceed 6,000 people by the time the parade commences.

Parade participants aren't given a number, they just show up and queue up in the line.

"It keeps getting bigger and bigger," said organizer Brian Zaug. "It starts at the turkey sheds at the east side of town."

By the time the first parade entry finishes its one-



mile trek across town, there is still more parade to come.

"We have no entry numbers. They just show up and line up. There are tractors, semis, firetrucks, clowns, area fire departments, lots of politicians, concrete trucks and usually a U.S. Senator," said Zaug. A professional football player has also been spotted at past gatherings, he said.

While the traditional candy is dispersed from some floats, other floats offer hot dogs and beverages to the spectators.

"Once you've been there, you don't skip it, you just don't miss it," said Zaug.

For Zaug, the thrill of the event is reuniting with friends and family from across the country who return for the annual event.

"It's just nice to be in my hometown and hanging out with friends and family. It's a good family gathering," Zaug said.

Those attending the parade may decide to cap off the evening at nearby Watertown, S.D., for that community's annual fireworks display.

Head north to Agency Village near Sisseton, S.D., the Sisseton-Wahpaten Oyate 148th annual contest wacipi will be held July 3 through 5, gathering large crowds for arguably one of the longest-held gatherings in the state.

Across the state at Crazy Horse Monument outside of Custer, S.D., the traditional fireworks show is exchanged for a production blast (weather permitting) as tons of rock are shed from the mountain as the carving progresses. The Monument's celebration activities include having a huge American flag displayed on the mountain while visitors can meet with Native American artisans, watch American Indian dancers perform and participate in many other planned events.

Those seeking a bit of the wild west will find plenty of rodeo action that weekend.

This year will be the 96th annual Black Hills Roundup Rodeo in Belle Fourche, S.D.

Head back to the east and one can catch Fort Pierre, S.D.,'s Fourth of July parade, rodeo and fireworks displays.

A trip to the Rosebud Casino just north of Valentine, Neb., will bring one to the 16th annual Rosebud Casino Wacipi and Great Plains Indian Rodeo Association Rodeo.

Opposite Page: The Kranzburg Fourth of July Parade in eastern South Dakota will gather thousands of people to the community of just 200 people. Photo Courtesy Watertown Public Opinion

Inset: Fireworks at Mount Rushmore have been discontinued due to the pine beetle devastation and fire risk, but plenty of other celebrations across the region exist. Photo Courtesy S.D. Tourism/Chad Coppel

On the cover: Fireworks light the sky above the Missouri River separating Fort Pierre and Pierre, S.D. Cover Photo Courtesy S.D. Tourism/Chad Coppel



A Sampling of Events

Aberdeen, Aberdeen Aqua Addicts Water Ski Show, July 3-4

Aberdeen, Uncle Sam Jam, July 4

Aberdeen, Wylie Park Fourth of July Celebration, July 4

Agency Village, Sisseton Wahpeton Oyate 148th Annual Wacipi, July 3-5

Bear Soldier Wacipi, McLaughlin, July 3-5

Belle Fourche, 96th Annual Black Hills Roundup Rodeo, July 2-5

Bird Island, Minn., Polka Fest Days, July 4-6

Centerville, Tornado Days, July 2-5

Crazy Horse, Independence Day at Crazy Horse Memorial, July 4

Custer, Old Time Country Fourth Celebration and Country Fair Arts and Crafts, July 3-4

Deadwood, Joe Nichols, July 4

Eureka, Freedom Dayz, July 3-5

Faulkton, Wild West Days, July 3-5

Fort Pierre, Fourth of July Parade, Rodeo and Fireworks, July 3-4

Kranzburg, Fourth of July Parade, July 4

Lake Norden, Independence Day Celebration, July 4

McLaughlin, Bear Soldier Wacipi, July 3-5

Menno, July 4 Celebration, July 4

Milesville, 20th Year Anniversary July 4th BBQ at Milesville Hall, July 4

Miller, Fourth of July Celebration, July 3-5

Mobridge, 70th Annual Sitting Bull Stampede Rodeo, July 2-5

Morton, Minn., Independence Day Celebration, July 4

Philip, Volunteer Fire Department Fireworks at Lake Waggoner, July 3

Piedmont, 125th Celebration, July 3-4

Rapid City, Independence Day Celebration, July 4

Redfield, Fourth of July Spectacular Celebration, July 3-4

Redfield, Fourth of July at the Depot, July 4

Spearfish, Great Western Cattle Trail and Day of the American Cowboy, July 3-4

Timber Lake, Volunteer Fire Department Fourth of July, July 4

Valentine, Neb., 16th Annual Rosebud Casino Wacipi and GIRA Rodeo, July 3-5

Watertown, Fourth of July Parade and Fireworks, July 4

Wessington Springs, Fourth of July Parade, July 4

White River, Community Celebration, July 4

Worthington, Minn., Old Fashioned Fourth of July, July 4

Yankton, Summer Pops Concerts, July 4

This is just a partial listing of events taking place in the region on July 4.

Winning Means Using Less

America is a competitive country. Fast cars, backboard shattering dunks and upper deck home runs get our adrenaline pumping. We even turn eating into a competition. So why not turn energy efficiency into a competitive effort?

Most people agree that using energy wisely is a smart decision. It's good for your wallet and it's good for the planet. But let's be honest – it can be pretty boring. Dancing with the Stars turned ballroom dancing into something exciting, so the same can be done with energy efficiency.

Several utilities have used the concept of energy challenges to turn energy efficiency into something that gets people excited and it's easy to recreate this friendly form of competition. All you need are two groups or even just one family to turn finding energy hogs into a fun activity that saves money.

So, how can you get in on the fun? You will want to compare your energy use this month to the same month last year. This will give a more accurate account of your use. If you don't want to compare to the same month as last year, you can also do a month-to-month or even week-to-week comparison. Just use data that you can easily access – and remember, this is meant to be fun.

Let's use an energy competition between two neighbors as an example. Both neighbors will need to know what their baseline energy use is (contact your utility provider if you do not have this information handy). Ideally, use the month from the prior year. This is the number that you will be competing against. The goal of the competition is to have the greatest percentage reduction for the month against that baseline. Now the fun starts. Simply figure out ways to reduce your energy use by the largest amount without spending more than \$50. The goal is fun and easy. You shouldn't have to spend hundreds or thousands of dollars on improvements to make a positive impact.

The secret weapon to winning will be to use your kids, since they are amazingly creative and have a unique way of looking at things. Here are some of their suggestions for winning strategies:

- Go camping outside for a few days instead of living inside the house
- Cook meals on a grill instead of the kitchen
- Watch less TV, disconnect the video game system or turn

off the computer (Please be aware that these tips may lead to family bonding time.)

- Unscrew some light bulbs
- Unplug battery and cell phone chargers
- Cut down on washing by using washing machines and dishwashers only when they are truly full
- “Fine” family members (usually the husband or kids) for leaving the lights on in an empty room or a door to the outside open

Once the competition starts, engage everyone in your home to brainstorm ideas to reduce energy use. Challenge everyone in your home to develop a list of things to do. The person with the longest list could win a candy bar. Then do them. Equip the kids with caulk guns to shoot the energy leaks or weather stripping to reinforce the windows. Try to turn everything into a game or a race.

What does the winner of the competition get? In this sort of competition, everyone wins because they are saving energy and saving money. But the prize can be as simple as a pizza party for the winner. Several colleges have tried energy competitions among their dorms. It is amazing what college students will do to earn a free pizza party.

How much energy can you save doing a competition like this? Electric co-ops that have engaged their members in these sorts of competitions have reported energy savings ranging from 9 percent to 58 percent. Those that saved the most made more drastic changes, such as grilling or camping. The energy savings do go down once the competition ends. But co-ops have found that even when the competition is over, those who played the game are still using less energy than before the competition and some of the easier behaviors like only running a full dishwasher or unscrewing light bulbs stick.

These ideas can be fun for all who compete, but making a long-lasting impact on home energy savings is the best prize of all!

Thomas Kirk is a technical research analyst specializing in energy efficiency and renewable energy for the Cooperative Research Network (CRN), a service of the Arlington, Va.-based National Rural Electric Cooperative Association.



The Electric Grid Connects Us All

The energy industry is in the midst of an unprecedented period of transition. As this energy revolution unfolds, a modern, interconnected and reliable electric grid has never been more important.

In April, Elon Musk, the charismatic billionaire CEO of Tesla, introduced a new lithium ion battery called the PowerWall. In typical fashion for this brash tech entrepreneur, Musk paints a rosy picture of a future where homeowners disconnect from the power grid and meet all their power needs through a combination of rooftop solar and battery storage.

It's exciting to imagine a future where renewable energy systems will allow us to generate and store electricity in a reliable and cost-effective way. Though there are many working hard to realize that goal — including electric cooperatives — it is still a long way from reality.

Unlike gasoline or propane, electricity is a form of energy that is difficult to store in large quantities. Batteries can hold enough energy to power small devices for moderate amounts of time, but current battery technology cannot practically and economically store enough energy to power larger items like appliances and TVs for longer durations.

We don't know when the cost, size, quality and reliability of battery storage will improve to the point that it becomes a viable option to help meet our energy needs. If/when that happens, it has the potential to transform countless aspects of our lives, from our smartphones to our cars to our electric system.

The lack of a viable option for large-scale energy storage creates another challenge for power companies. Electricity supply and demand must always be perfectly matched.

If you're a farmer, imagine what your job would be like if you couldn't store your product — not even for a short period of time until a truck could come to pick it up. Imagine if the grain you grow or the milk your cows produce had to instantly go from harvest to consumption. Lastly, imagine that the demand for your product never stops and varies wildly throughout the day, but you always had to produce the exact right amount with no shortages or overages. That's what electric cooperatives do every day to keep the lights on.

To meet this challenge, power companies rely on a complex and interconnected electric grid to deliver power to homes and businesses across America the instant that it's needed. The electricity powering the lamp that you're using to read this article was generated a fraction of a second before it was delivered to your home — most likely at a power plant far away from where you live.

These same challenges are true for people who want to generate electricity at their homes or businesses through technologies such as solar panels, small wind turbines and manure digesters that produce methane.

It's unlikely that the amount of available sunshine, wind or manure is always perfectly matched to your immediate energy needs. Sometimes the sun is shining brightly when nobody is home, but most people still want electricity after the sun goes down. That's where the electric grid comes into play.

By staying connected to the electric grid, your home is part of a larger system. You can usually feed extra energy back into it when you don't need it, but more importantly, the grid is there to make sure you always have enough power when you need it.

In addition, the interconnected nature of the grid means that when there's a problem with a generator on the system — whether that's a homeowner's rooftop solar array or a large power plant supplying energy to hundreds of thousands — there are plenty of other generation resources available to step in and quickly meet the need.

In some ways, the electric grid is the ultimate example of a cooperative. Every power company, from electric co-ops to investor-owned utilities to government-run systems, must work together across state lines to ensure there is always enough energy to power our lives.

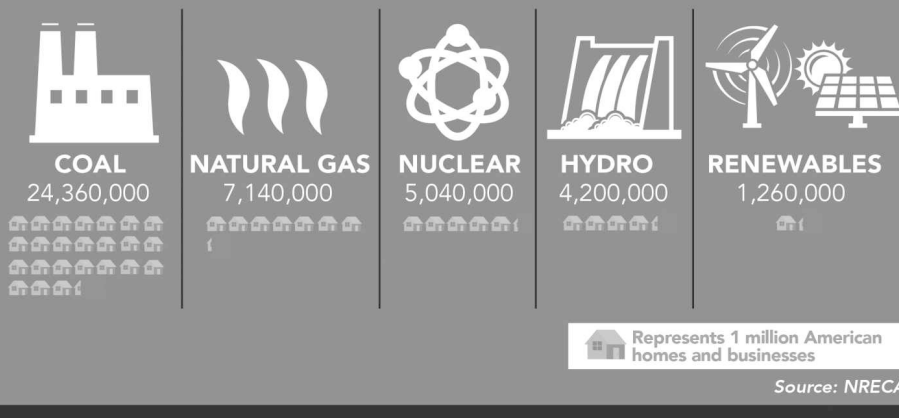
Electric cooperatives are leaders in the renewable energy revolution. Three of the top four solar utilities in America are electric cooperatives. The vast majority of wind turbines in this country are built in rural areas served by cooperatives. In fact, America's electric cooperatives support an entire team of researchers who work on issues related to renewable energy, power reliability and future technology.

Great leaders always look to the future but remain grounded in practical reality. Great leaders look out for everybody they serve and strive to ensure their actions will serve the greater good. These are the same qualities that make electric cooperatives special. Though our nation's energy future is uncertain, there's no doubt that America's electric cooperatives are helping to write it — and doing so with our members' best interests driving every action we take.

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

WHERE YOUR POWER COMES FROM

These five types of central station power provide electricity for millions of American homes and businesses.



Solving the Solar Puzzle

AS SURE AS THE SUN SHINES, SOLAR POWER IS COMING.

The costs of photovoltaic (PV) technologies are tumbling. Government mandates for renewable energy are expanding. Options for adopting consumer-level solar are increasing. And member demand is exploding.

"I've never, never seen this kind of enthusiasm and excitement" from consumers, said Wright-Hennepin Cooperative President and CEO Mark Vogt, a 35-year co-op veteran.

Add to that a 30 percent federal tax incentive for solar projects that will be reduced to 10 percent at the end of 2016 and you have a rush toward a technology that's already seen triple-digit growth over the past five years.

Electric co-ops nationwide have about 105 MW of solar energy in their generation mix, but a recent survey shows they're planning to add nearly 300 MW over the next two years, and more co-ops are announcing plans nearly every day.

But for cooperatives venturing into solar for the first time, deciding which options are best for the co-op and the membership can be daunting.

"There are multiple options for each phase of a solar project," said Andrew Cotter, a project manager in NRECA's business and technology strategies division. "First, you have to find out if your membership wants solar and if meeting the demand is worth the investment. Then, there's financing, planning and design, installation and interconnection and operation and maintenance. Making the right call on all these facets and getting them to fit properly can really be like solving a puzzle."

The landscape becomes even more complex when co-ops are faced with individuals or third par-

ties installing rooftop solar and with net-metering laws that compel utilities to compensate residents at retail rates instead of wholesale for solar power they feed back into the grid.

"When a member puts solar on a house on his own or through a third party, the traditional rate model is broken," Cotter says. "Utilities recover most of their fixed costs through kilowatt-hour sales. Without major changes in the way we charge for power, the effect of rooftop solar and net metering is to transfer these fixed costs to members who can't afford or don't want solar or whose homes aren't suitable for it."

Community Solar

Wright-Hennepin Cooperative created a for-profit subsidiary, WH Solar, to install and maintain its solar projects.

Vogt and his team at Rockford, Minn.-based Wright-Hennepin studied those competitors for a couple of years before deciding on a business model to bring solar to the co-op's power mix. That model was community solar, a highly successful option being deployed by dozens of co-ops across the country, where the utility builds a large solar power installation and sells or leases individual panels or their output to members.

The co-op built Minnesota's first community solar power project in 2013 at its headquarters. Soon after, it created a for-profit subsidiary, WH Solar, to install and maintain its solar projects. The company is now on its third community solar installation and looking to develop and sell solar energy outside the co-op's territory by the end of 2015.

WH Solar customers lock into a 20-year solar

By
Cathy Cash
RE Magazine



electricity rate that covers the cost of the panel with no money down. They pay a higher retail rate than non-solar customers during the first few years but can potentially net thousands of dollars in savings as the term matures, Vogt says. Customers also have the option of paying \$2,695 per panel upfront and \$0 per kilowatt-hour where the production essentially offsets their usage at the retail rate.

With electricity prices from traditional sources forecast to increase about 3 percent a year and likely to be compounded by new federal power plant-emissions rules, Vogt says solar will become even more attractive to consumers and utilities.

Listening to Members

Vogt says for Wright-Hennepin, the driving force into solar energy has been the “tremendous interest” among its 46,000 consumer-members, based on recent surveys the co-op has conducted. Minnesota’s 25-by-25 standard – 25 percent renewables by 2025 – is also a contributing factor.

“There is a romance with solar, an intangible there that doesn’t exist with central-station power,” he says. “If we can tap into that, I think co-ops can be in the driver seat for an awful long time. That is something we, as an industry, better not miss.”

Owen Electric Cooperative, located in northern Kentucky teamed up with the SUNDA Project, a U.S. Department of Energy-sponsored collaboration between NRECA, the National Rural Utilities Cooperative Finance Corporation and several co-ops to establish technical and financial guidelines and best practices for utility-scale solar installations.

“What [SUNDA and NRECA] brought was a team of experts from a financial standpoint as well as from a technical standpoint,” said Mark Stallons, Owen Electric’s president and CEO. “If we did it ourselves, we would have to go to a local provider of solar energy and we would be subject to whatever they wanted to provide us with.”

The Owenton, Ky., cooperative has begun work on its first solar energy project: a community solar array on a three-acre site owned by the co-op. The project, slated to be operational by the end of 2016, will be sized according to member demand.

Stallons says the imperative of solar energy is to find a balance that both meets member needs and makes financial sense for the cooperative. Failure to get the solar formula right, he says, could negatively impact the relationship with members and the co-op’s bottom line and invite competition from outside sources.

“Our goal is to provide all of our members with the power supply they desire, whether it is from traditional or renewable sources, and at an equitable price point that is not subsidized by other members,” he says.

Vogt agrees, saying co-ops have a “natural advantage” over outside competitors that must be leveraged: “We are the trusted power supplier in our communities.”

Keeping it in the Family

Where co-ops like Wright-Hennepin elect to outsource the building and management of their community solar facilities, Lake Region Electric Cooperative (LREC) looked at the expertise it already had on staff and decided to go it alone.

“Think about our history: We build substations. A solar array is simple, low-voltage, on-the-ground panels, rails and racking,” says Tim Thompson, CEO of the 26,000-member

co-op. “Why would we want to pay someone else to come into our territory and build a small power plant? Doing it ourselves saves money.”

LREC, based in Pelican Rapids, Minn., built its first community solar array of 96 panels, 410 kilowatts, in 2013, and it sold out quickly. All told, the co-op devoted 368 hours of labor to building the project.

“We are proud that a variety of employees contributed significantly to the construction, including our linemen, electrical technician, facilities supervisor, staking supervisor, CAD technician, meter tech and warehouseman,” Thompson says. “We leveraged our skills and the equipment we already have and applied them to solar and it turned out to be a success.”

The co-op sees the project as a way to maintain the long-standing bond it has with its membership. “If we don’t get in on the ground floor and build this, someone else will,” Thompson says. “Community solar has now become a part of our business.”

Panels cost \$1,500 each and members can use a payment plan to spread the costs over 36 months. LREC recovers all its costs – panels, labor and lost kilowatt-hour sales revenue – in the price, plus a small margin.

“The new revenue coming in pays for the project,” he says. “If a third party came in and started building solar, they would really extract value.”

Thompson says there’s another intangible in offering solar that you can’t put a dollar value on: member trust.

“Our members really do look to us; they trust us,” Thompson says. “As long as there is member demand, we’ll keep doing it.”

‘Cooperative Solar’

Seminole Electric Cooperative is taking community solar to a new level.

The Tampa, Fla.-based G&T found that among its nine member co-ops, there was high interest in developing solar power and the member co-ops wanted to find the most cost-effective option to meet the demand. With this in mind, the G&T has embarked on a project that co-op officials are calling “cooperative solar.”

Under the plan, Seminole Electric would build and operate a utility-scale solar project and allow member co-ops to sell the array’s output to consumers.

“What we’re trying to do is provide our member cooperatives access to that solar facility at a rate structure that allows each to design a program to meet their needs,” says Lisa Johnson, the G&T’s CEO and general manager. “This approach gives them an opportunity to access an affordable solution without having to put their own capital out on the front end.”

Development of the project is in the early stages, but plans are to build a 2-MW PV system on Seminole Electric property adjacent to its natural gas plant by the end of 2016.

Members First

In the end, the solution to the solar puzzle comes down to something co-ops have thrived on since the beginning: listening to members.

Luis Reyes, CEO of Taos, N.M.-based Kit Carson Electric Cooperative, a national leader in utility solar deployments, agrees.

By the Number:

A Look at Co-op Nation

By Brenda
Kleinjan

ACROSS THE NATION — AND ESPECIALLY IN THE Dakotas and western Minnesota — America's electric cooperatives serve some of the fastest-growing areas and some that are declining rapidly. Likewise, co-operatives serve some of the nation's more economically prosperous areas, and some of its poorest.

According to statistics from the National Rural Electric Cooperative Association, in Arlington, Va., electric cooperative sales growth rates generally surpass that of the total electric utility industry as a whole. This was especially true in 2013. Co-op sales growth outpaced the industry as a whole by the widest margin in 10 years. Co-ops had strong resi-

dential sales growth in 2013 and many co-ops had strong commercial and industrial (C&I) growth as well. The industry as a whole has seen five years of negative growth out of the last six years. In contrast, there were only three years of negative growth in the 58 years prior to 2008.

America's electric co-ops now serve 19 million total customers, 16.7 million are residential customers (roughly 42 million people). Co-op Nation added 218,781 new members in 2013, the most since the housing crisis of 2008. For many years, co-ops were accustomed to high consumer growth rates. From 1974 through 2007, the annual average



rate was 2.8 percent. In 2013, it was 1.2 percent. Yet, even in this environment, over 80 percent of all co-ops still had a net increase in customers. Texas and Georgia have the most co-op consumers and also added the most new consumers in 2013.

In fact, 20 percent of all new co-op consumers were added in Texas. Several North Dakota co-ops topped the consumer growth chart with explosive growth ranging from 14 percent to 18 percent due to the energy resource extraction boom taking place in the Bakken formation. Much of South Dakota and western Minnesota also saw growth, as depicted in the top map at right.

Although the rate of co-op member growth is down in recent years across the industry, co-ops growth is still higher than the industry as a whole. Co-ops are growing rapidly in many areas of the country (see middle map at right). In South Dakota and western Minnesota, co-ops run the gamut of moderate to high growth to zero to negative growth.

2013 consumer data for the total industry is not yet available.

Co-op Residential Electricity Usage

Residential electricity usage is the amount of electricity used in a home on a monthly basis and is influenced by many factors. Usage rose dramatically for co-op consumers in the 1940s and 1950s when rural areas were first being electrified. It continued to rise during the 1960s and 1970s as areas that never had air conditioning began to add it. Since then, average residential usage has increased only gradually, under 1 percent per year. In fact, it declined in three of the last five years challenging utility assumptions about long-term growth rates.

Compared to other types of utilities (IOUs and Municipal), co-ops have higher electricity usage.

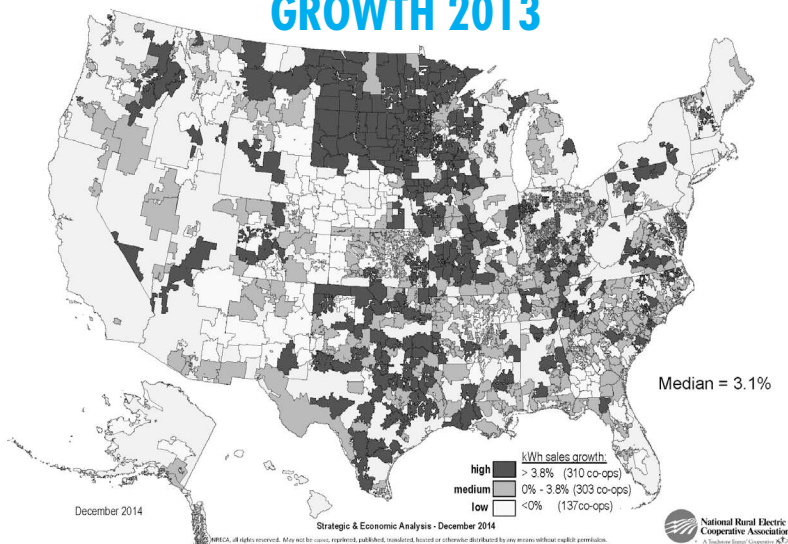
Usage in rural areas is usually higher than in urban/suburban areas. There are several reasons for this: low-density (rural) areas have fewer alternatives to electricity; natural gas and oil are either not available or more expensive so electric heating is often the only choice; higher prevalence of larger, detached homes more exposed to weather, including mobile homes that are generally less efficient. Also, farm electricity usage (for grain drying etc.) is very high.

The bottom map at right shows the average kilowatt hours per month used by members at America's electric cooperatives.

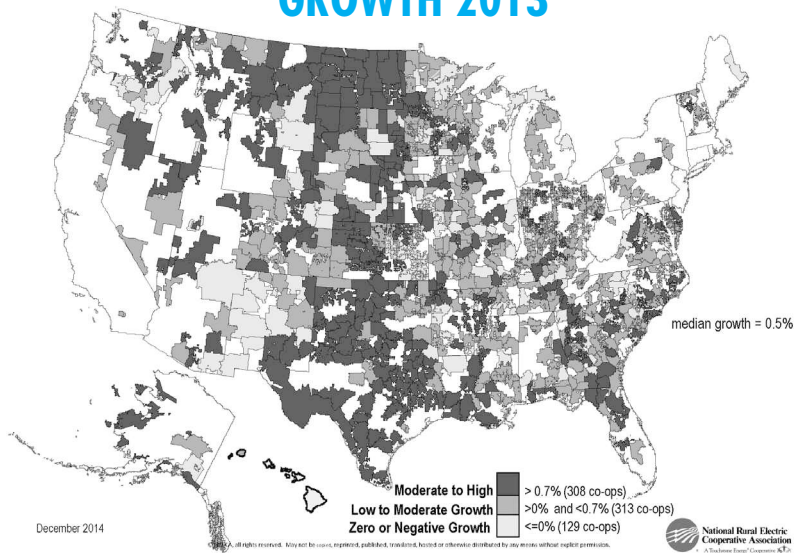
Additional Facts and Figures

- 93 percent of co-op customers have average household incomes below the national average.
- South Dakota's electric cooperatives serve 11 of the poorest counties in the nation.
- One in six co-op members live at or below the poverty line.
- The mean household income is 12 percent lower than the nation as a whole.

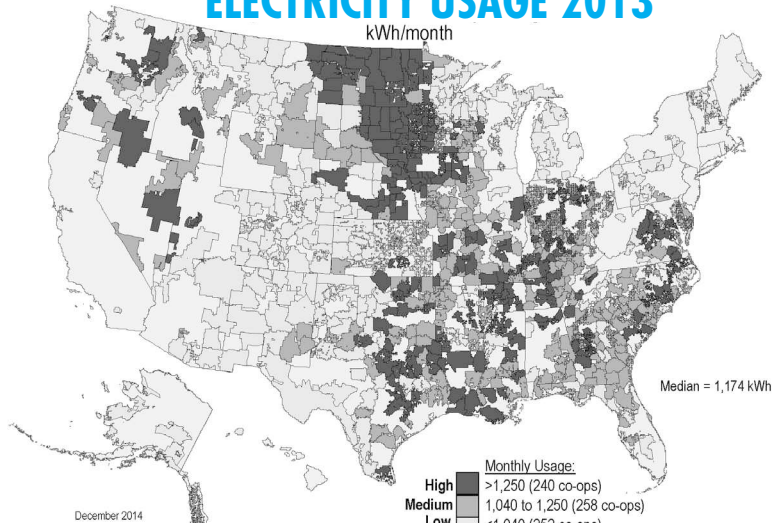
KWH SALES GROWTH 2013



CO-OP MEMBER GROWTH 2013



CO-OP RESIDENTIAL ELECTRICITY USAGE 2013



Regional Dateline

June 25

Shrine Circus
Worthington, MN
605-336-1117

June 26

Shrine Circus, Yankton, SD
605-336-1117

June 27

Uptown Summer Festival
Watertown, SD, 605-886-3040

June 27

Shrine Circus, Winner, SD
605-336-1117

June 27

Shrine Circus, Deadwood, SD
605-342-3402

June 28

Shrine Circus, Eagle Butte, SD
605-342-3402

June 29

Shrine Circus, Lemmon, SD
605-342-3402

June 30

Shrine Circus, Buffalo, SD
605-342-3402

July 3-5

Sisseton Wahpeton Oyate
148th Annual Wacipi
Ceremonial Grounds
Agency Village, SD
605-698-8217

July 3-4

4th of July Parade,
Rodeo & Fireworks
Stanley County Fairgrounds
Fort Pierre, SD, 605-223-7690



PHOTO COURTESY OF SHEILA HURST

July 5

Mr. Jefferson's Recollections
Independence Hall
Rapid City, SD, 605-877-6043

July 8

Public Reading of
Declaration of Independence
Noon, Independence Hall
Rapid City, SD, 605-877-6043

July 9-12

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

July 10-11

Stagecoach Days
Deadwood, SD, 605-578-1876

July 10-12, 17-19 and 24-26

Laura Ingalls Wilder Pageant
"By the Shores of Silver Lake"
DeSmet, SD, 800-776-3594
or 800-880-3383

July 11-12

Archeology Awareness Days
Mitchell, SD, 605-996-5473

July 11-12

Annual Gem & Mineral Show
Rushmore Plaza Civic Center
Rapid City, SD, 605-269-2015

July 14-15

S.D. All Star Games
Aberdeen, SD
sdallstars@hotmail.com

July 16-19

Burke Stampede Rodeo
Rodeo Grounds, Burke, SD
605-830-2083

July 17-18

The Gathering of People, Wind
& Water Native Art Market &
Cultural Celebration
Rapid City, SD, 605-716-7979

July 17-18

Black Hills Corvette Classic
Spearfish, SD, 605-759-4530

July 17-19

Horse & Buggy Days
Sisseton, SD

Events of Special Note

June 26-28

Motogator Joe's Country
Music Festival
Madison, SD, 605-256-3644

July 11

Ag Day, Watertown, SD
605-882-6269

July 18

Ranch Rodeo, Arena
Murdo, SD, lori.waldron@
bankwest-sd.com

July 21-25

Days of '76 Rodeo and
Parades Deadwood, SD
605-578-1876

July 24

Storybook Land Festival
Aberdeen, SD
artscouncil@nvc.net

July 24-26

Honey Days, Bruce, SD

July 24-26

Gold Discovery Days
Custer, SD, 605-673-2244

July 26

Folk Off and Rib Challenge
Renner, SD, 605-543-5071

August 2-8

Sturgis Motorcycle Rally 2015
Sturgis, SD, 605-720-0800