

# Fireplace Leaving You Cold?



**James Dulley**  
www.dulley.com

**If you've been using** an open masonry fireplace to help lower your heating bills, you may find it has not been helping and that the house actually feels colder.

Your situation is not uncommon in homes with a typical open hearth fireplace. People seldom realize that most open fireplaces draw more heat out of a house

than they produce to warm it. This makes their furnace or heat pump run longer and increases their utility bills.

Even though you feel toasty warm directly in front of the flames, the rest of the rooms get chilly. All of the room air which is drawn up the chimney is replaced by cold outdoor air which leaks indoors through cracks and gaps throughout your home. This is the reason wingback chairs were invented. They allow you to feel the radiant heat from the fireplace on the front of your body while your sides and back were insulated from the cold room by the chair back.

There are several simple things you can do to make your fireplace more efficient and change it into an overall energy producer and money saver. If you have made general improvements to your home to make it more efficient and airtight, this may actually make the fireplace worse and may create a backdrafting and smoky condition.

The two key areas of fireplace efficiency improvements are (1) reducing the amount of already-heated room air lost up the chimney, and (2) directing more heat from the fire out into the room. After you make your fireplace improvements, running your furnace blower on continuous air circulation when the fire is burning will help distribute the heated air from the fireplace throughout your home.

The most heated room air is lost up chimneys when there is no fire burning. This occurs 24 hours per day because of a nonexistent or poorly sealed chimney damper. If you have a damper, close it and then hold a lighted stick of incense at the fireplace opening. The path and speed of the smoke is a good indicator of how well the damper seals.

To seal the chimney better and provide some insulation, I use an inflatable chimney balloon (also called chimney pillow) in my fireplace. It is made of flexible plastic which is placed in the flue. You blow it up and it expands against the sides to seal air leaks. It folds up into a small package when not in use.

Another option is a tight-sealing damper assembly mounted on the chimney top. Long stainless steel cables hang down the chimney and attach inside the fireplace opening to open and close it. It is sealed to the top of the chimney with silicone caulk so it also functions as a protective chimney cap. Chimney exhaust fans also help and can reduce a smoky fireplace condition if it lacks adequate draft.

When you are burning a fire, tight-fitting glass fireplace doors with adjustable air openings are imperative. Some doors use magnets and others use cams to hold them in the tightly closed position. High-temperature silicon gaskets provide an excellent long-lasting seal. Polished nickel, copper and pewter finishes are most attractive.

Installing a heat-circulating grate in the fireplace will make the greatest improvement in usable heat output. The grate is made of steel pipes with a built-in fan that draws cool room air in one side and blows heated air out the other. The base of the front cover of the grate is only 1.5 inches high so it easily fits under most glass doors.

Models with a built-in thermostat and a variable-speed blower provide the most control over the heat output and the sound level. Set the blower to high speed when the fire is really raging. The thermostat turns the blower on automatically at 110 degrees and off at 90 degrees so it won't continue to run as the fire burns down and cools off.

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If you have access from a crawl space or basement beneath the fireplace, run a duct from outdoors to the front of the fireplace. Install a tight-sealing adjustable register cover over it. When burning a fire, open the register so outdoor air will be drawn in for combustion. This reduces the amount of heated room air being drawn from your home.

If one plans to use a fireplace seldom and particularly likes an open hearth, set the furnace thermostat back and crack open a window in that room for combustion air. Placing a heavy cast iron plate (fireback) in the back of the fireplace helps radiate more of the fire's heat out into the room.

Most firebacks have decorative patterns cast into the face.

*Send inquiries to James Dulley, Cooperative Connections, 6906 Royalgreen Dr., Cincinnati, OH 45244*

## Electric Co-op Employee Killed in Iraq

**Long-time** Bon Homme Yankton Electric Association business manager Richard Schild was killed by a roadside bomb on Dec. 4 in Iraq.



Schild was a Sergeant First Class with Charlie Battery, 1st Battalion, 147th Field Artillery Unit, South Dakota National Guard.

He is believed to be the first electric co-op employee killed in the Iraq war.

Sgt. 1st Class Schild and Staff Sgt. Daniel M. Cuka, 27, of Yankton, died after insurgents detonated two separate improvised explosive devices near their HUMVEEs while they were en route to an Iraqi police station, according to a report from the National Guard.

Schild, a father of two, had served in the Guard for about 14 years.

A memorial fund has been set up for the family at a Yankton bank.

### South Dakotans Killed in Iraq

#### Fifteen service members with South Dakota ties have died in the Iraq War:

Warrant Officer Hans Gukeisen, 31, Lead  
Pfc. Michael Deuel, 21, Nemo  
Pfc. Sheldon Hawk Eagle, 21, Eagle Butte  
Chief Warrant Officer Scott Saboe, 33, Willow Lake  
Capt. Christopher Soelzer, 26, Sturgis  
Sgt. Dennis Morgan, 22, Valentine, Neb.  
Staff Sgt. Cory Brooks, 32, Philip  
Lance Cpl. Jeremy Bohlman, 21, Sioux Falls  
Lance Cpl. Joseph Welke, 20, Rapid City  
Pfc. Gunnar Becker, 19, Forestburg  
Staff Sgt. Jason Montefering, 27, Parkston  
Chief Warrant Officer Paul Pillen, 28, Keystone  
Spc. Daniel Bartels, 22, Huron  
Sgt. 1st Class Richard Schild, 40, Tabor  
Staff Sgt. Daniel Cuka, 27, Yankton

## Dakotas Wind Transmission Study Final Results Available

**The final report** for the Dakotas Wind Transmission Study is now available to the public. The study examined how the addition of 500 megawatts of wind generation in North Dakota and South Dakota would affect the region's transmission system.

For the seven wind sites studied, major conclusions are that under normal system intact conditions, nonfirm transmission is available most of the time across three monitored areas for up to 500 MW of new wind generation. However, some of the sites are limited to less than 500 MW without additional system enhancements. The study indicated that some overloads and dynamic stability problems resulted when wind generation was added, but dynamic line rating and reconducting could mitigate those problems without adding new transmission lines to the system.

The final report is available at <http://www.wapa.gov/ugp/study/Dakotas-Wind/>.

Western Area Power Administration received \$750,000 of non-reimbursable funds from Congress in FY 2004 to perform the transmission study. Western developed the final study scope with input from the public. Public review and comments were also solicited as the

study tasks were completed. The study addressed four tasks:

- Analyze nonfirm transmission potential relative to new wind generation.
- Assess transmission technology potential relative to new wind generation.
- Study interconnection of new wind generation.
- Study delivery to market of new wind generation.

For more information about the Dakotas Wind Study or to receive a copy of the final study results, visit the WAPA Web site at [www.wapa.gov](http://www.wapa.gov) or call or e-mail Sam Miller at 406-247-7466 or [csmiller@wapa.gov](mailto:csmiller@wapa.gov).

Western Area Power Administration annually markets and transmits more than 10,000 megawatts of power from hydroelectric power plants owned and operated by the Bureau of Reclamation and the U.S. Army Corps of Engineers in 15 western and central states. It is part of the Department of Energy.



## Co-op Leader Named to South Dakota Energy Committee

**Audry Ricketts**, general manager of the South Dakota Rural Electric Association in Pierre, was one of five individuals named to the South Dakota Energy Infrastructure Authority.

The SDEIA was created to diversify and expand the state's economy by developing the energy production facilities and the energy transmission facilities in South Dakota necessary to produce and transport energy to markets within the state and outside of the state.

Also appointed to the committee by Gov. Mike Rounds were Mike Trykoski, Rapid City; Kyle White, Rapid City; Mike Held, Huron; and Dr. Mike Ropp, Brookings.



**Audry Ricketts**