Acreage Living

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In This Issue

Acreage Living is published monthly. Please share it with your acreage neighbors. Call your local ISU Extension Office for more information or contact an ISU Extension staff member listed below to suggest topics for future articles.

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Winter Power Outages

By Charles Schwab, ISU Extension Safety Specialist, Agricultural and Biosystems Engineering

Winter power outages are always challenging but occasionally they can be dangerous if not handled correctly. The key to managing any emergency such as a power outage is to have a specific disaster plan to handle decisions that must be made in the moment of the crisis. Planning before emergencies gives us more time to gather additional information needed for making optimum decisions as opposed to the quick decisions made under stress during emergencies.

Snow, freezing rain, and extreme cold conditions often contribute or cause winter power outages. These same conditions must also be handled in your personal disaster plan. Winter storms can last for days, resulting in disruption of normal services, blocking or closing roads, and causing conditions of isolation. Can you manage without power for three days, five days, or more? What are your primary needs to survive? What tasks must be performed to avoid hazards and minimize risks to your health and property? Typically shelter, water, and food are the basic elements needed in any emergency. What plans do you have for these basic elements?

Beginning with shelter, how does your home handle the cold temperatures? Are there simple modifications you can make to improve the ability of your home to handle cold weather and reduce your heating load during an emergency? These modifications will also help cut energy costs during non-emergencies.

If you lose your primary heating system because of a power outage, do you have an alternate heating source? Does your alternate heating source pose special risks? You not only need to choose alternate heat but also

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understand the special requirement of those choices. If using alternate heat sources, carbon monoxide poisoning is a dangerous health risk as well as fires from unattended units. Where you locate your alternate heating source is critical. It is important to think through what types of alternate heating systems work best in your situation and clearly understand the operational consideration of each.

Know the limitations of your home for extreme weather conditions. Do you know how much snow your roof can handle? Is your roof prone to developing ice dams? All homes have certain tasks that must be done for protection during normal winter conditions, but there are additional tasks during winter emergencies. If you must leave your home during a winter emergency, have a checklist of tasks so you can leave your home prepared.

Are there critical functions that require backup power? Perhaps you need backup power because of health issues, livestock needs, remote location, or past history of emergencies. As you explore use or installation of a backup generator, get professional help in evaluating your needs.

There are many safety considerations that must be understood and followed when using a portable generator. They include carbon monoxide (CO) poisoning from the engine exhaust, electric shock or electrocution especially when operating in wet conditions, fire and burns. You should never try to power the house wiring by plugging the generator into a wall outlet, a practice known as "back feeding."

Develop a disaster supply kit with enough essential supplies to last three to five days. The kit should include water; dried, canned, or other nonperishable food; and other emergency supplies such as flashlights, batteries, first-aid

supplies, prescription medicines, and a digital thermometer. A good rule of thumb for water is a gallon per day per person. When developing your kit, use battery-powered or hand crank flashlights and lanterns rather than candles or open flame devices (to minimize the risk of fire). Again it is important to understand the choices and operating conditions for these alternatives.

Sometimes the easiest way to create your disaster plan is to role play. Pretend the emergency is happening and discuss what actions you should take. It is also important to examine your plan after any emergency to improve it. Disaster plans are only effective if known, used, and revised. Don't wait for the next disaster to happen before you prepare your plan.

Additional information:
http://www.redcross.org/services/disaster/0,1082,0_500_,00.html
http://www.fema.gov/plan/prepare/plan.shtm
http://www.fema.gov/hazard/winter/
http://www.weather.gov/om/winterstorm/winterstorms.pdf

Add Window Layers to Save Money

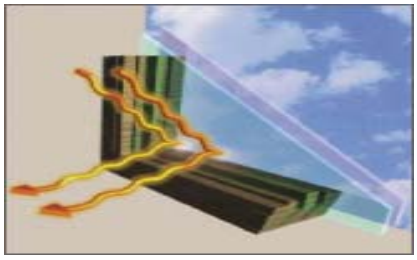
By Shawn Shouse, ISU Extension Ag Engineering Field Specialist

High energy prices and cold weather have us thinking about home heating costs. Housing experts say that 25 to 35 percent of home heat can be lost through doors and windows. Hardware and home stores sell storm windows and plastic sheet window insulating kits. But do these extra window layers pay for themselves?

Heat escapes windows by different means. One path is the conduction of heat through the glass panes and wood, vinyl or metal frames of the window. This conductive heat flow is estimated by the U factor (thermal transmittance) for the window. The U factor is the reciprocal of the thermal resistance factor (R factor) commonly cited for insulation and building materials, that is, U = 1/R. When you see a U factor or R factor for a window, be sure you know if the number quoted is for the entire window unit including the frame, or just for the window glass itself. Glass is a poor insulator. But still air film at the surface of the glass and still air trapped between layers of glass makes good insulation. This explains higher R factors for windows with multiple layers of glass (insulated glass) or with added storm windows. Adding layers with extra glass or plastic film can increase the R factor of existing windows.

A second, and sometimes larger path for heat escape from windows is leaking air. Air leaks between window sashes, between sashes and frames, and between frames and walls all allow warm air to leave and cold air to enter the house. Close attention to window seals and installation methods can minimize these losses. Added layers of plastic or glass can help reduce air leaks through window parts.

A third path for heat loss through windows is radiation. You feel radiation heat gain when sun shines in your windows. Smaller but similar radiation losses occur when warm surfaces inside your home



radiate heat out through the window to cold surroundings. Special surface coatings (low emissivity, or low-e) can help control radiant losses and gains, but closing blinds and drapes at night and on all shaded windows can also help.

If good control of air leaks exists, adding a second layer to a single layer window will double the R factor and cut conductive heat loss in half. Adding a third layer will increase the R factor by another 30 percent. Using a standard forced air furnace, Iowa winter, 2008 prices, and a window with 10 square feet of glass area, adding a second layer could save $10 to $20 per window. Adding a third layer could save three to six dollars per window. Savings could be higher if you significantly reduce air leaks as well. Adding storms or insulating films to windows can pay dividends in fuel savings and added comfort.

For more information on choosing windows, consult the Efficient Windows Collaborative
http://www.efficientwindows.org/

More information on home energy savings is available from the Iowa Energy Center
http://www.energy.iastate.edu/

And the US Department of Energy
http://www.energysavers.gov/

There's a Mouse in My House!

By Jason O'Brien, Interim ISU Extension Wildlife Specialist

Fall is upon us and now is the time when homeowners will notice mice moving in for a winter visit. Two species of mice native to Iowa can be seasonal visitors in homes to which they can gain access. The Deer Mouse (Peromyscus maniculatus) and White-footed Mouse (Peromyscus leucopus) make their way into homes in search of winter shelter after having spent the spring and summer outdoors raising young and foraging. The House Mouse (Mus musculus), on the other hand, will live year-round in your home without the seasonal migration.

Requiring only enough space to fit their head through, about ¼ inch or larger, both Peromyscus species will bring in nesting material or create their own inside, chewing apart paper, insulation, foam and any other material deemed suitable for a cozy nest. These mice also begin stashing food, such as corn kernels and bird seed, on which they survive for portions of the winter.

Exclusion is the preferred method of avoiding the seasonal visits of Deer and White-footed mice. Look for gaps where the siding meets the foundation or where pipes and other utilities enter. Cracks in foundations and loose-fitting doors without proper weather stripping are other obvious places mice can get in. And, because mice are good climbers, don't forget to check for poorly-fitted windows and disrepair around the roof, including attic vents. Mice can easily travel within walls, and without a way into the living quarters, you may never notice them. Repairs to exterior openings are necessary to avoid costly damage to wiring and other fixtures of your house.

Rodent-proofing can be as simple as adding or replacing weather stripping on doors and windows, which will reduce your heating costs, to filling cracks and holes with an expanding foam sealant. Because mice are chewers, tightly pack steel wool into the gaps first, and then apply the foam. Metal flashing will also create a chew-resistant barrier over openings. Other kinds of repairs may be necessary, depending on the location.

Trapping is necessary to remove the mice that are already inside. Two common types of traps, the snap and box traps, work effectively. The snap trap is a kill trap and can be baited with peanut butter or moistened rolled oats. Mice travel along the edges of and behind objects, where they are less visible. Set traps directly against walls in these areas. Mouse droppings indicate where they are active. To improve your chances of catching mice, set multiple traps in different locations, where you see the most activity.

Box traps vary in design and all are live traps, for those who prefer not to kill the offending critters. They work without bait, relying on the mouse's natural curiosity. If you have many mice, consider the multiple-catch box traps. This trap has two chambers, one where the mice enter and one where they go when caught. The trap operates by winding it up and automatically resets itself so that multiple mice can be caught without resetting. Set these traps in the same locations described above. Live-trapped mice can be released outside, but complete repairs first so they do not return.

For additional protection, properly store grains and other seeds in rodent-proof metal containers and avoid leaving food out over night. ISU Wildlife Extension does not recommend poisons as an initial solution unless all other methods have been unsuccessful. Use of poisons can be a risk to pets and children and often means mice die in inaccessible places, which can cause odor problems. Glue traps, while effective at catching mice, are not recommended, as they are generally messier and subject the mice to a slow death due to starvation and injury. Ultrasonic devices labeled as rodent repellants do not live up to company claims and independent research has not shown they are effective at rodent control.