

A Service of **Midwest Energy Cooperative**

October 2011

Michigan

COUNTRY LINES



Women Hunters Unite

Also:

Silent Sentinels

Poles remain key to safe,
reliable power

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CO-OP MONTH

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Is Needed**

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Energy Tool**

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— Ira Jones

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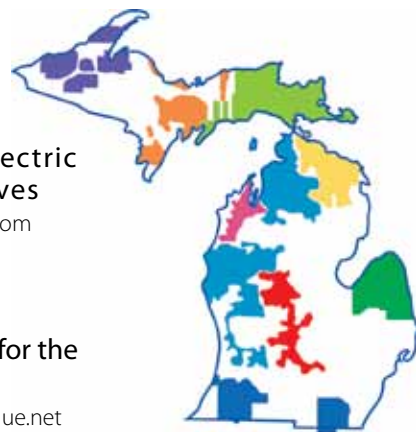
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Gail Knudtson

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*Not in all editions

Michigan's Electric
Cooperatives
countrylines.com



On the Cover

Lisa Snelling of Flint created a magazine and website for the many women who love hunting as much as she does.

Portrait by Paul T. D'Aigle, Imaginique Studios Photography/imaginique.net



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Balanced Action is Needed

I remember traveling on cross-country trips with my family as the kids were growing up. Like most, I'd try to point out interesting things along the route—bodies of water, mountain ranges, and the myriad of things that are part of our natural landscape. But when you're an electric utility industry geek like me, many of the best points of interest are overhead. So our trips included not only nature's beauty, but the intricate infrastructure of towers and overhead lines that allow us to power our lives at the simple flip of a switch.

The electric utility industry is an engineering marvel in its design and intricacy. Most people only care that it works when they need it, but the infrastructure behind it is nothing short of amazing. There are three critical pieces—generation, transmission and distribution—that have to work in perfect harmony in order to guarantee an uninterrupted supply of kilowatts to your home. Each piece is unique in its role and how it functions and is managed, but if any isn't working right it affects you and other users at the end of a simple service wire.

This summer was hot. Just this morning I heard a news report that the National Oceanic and Atmospheric Administration reported that the June-to-August period was the second hottest summer on record in the U.S., with an average temperature of 74.5 degrees. Much of that was driven by the southern states, several of which recorded their hottest summers ever.

That summer heat has a lot to do with the industry infrastructure I noted earlier. Portions of our country are interconnected by a national transmission system, meaning what happens in one part of the country can impact another. So when the East Coast baked for days in a major July heat wave, our southeast Michigan service territory was at risk for blackouts because we are served from the same national transmission system. Midwest Energy, and many other utility providers, encouraged their members and customers to voluntarily cut back on power usage in order to avoid mandatory curtailment. With your

help, and that of thousands of other utility customers from southeast Michigan all the way over to the East Coast, we were able to avoid what could have been a major power supply emergency.

There are many issues at play here, all of which could have catastrophic results for the end users if we don't stop using band-aids to fix our problems. Many of our generation and transmission systems are outdated and simply not capable of withstanding the electric load brought on by summers like this one. The fact that the severity and reality of this summer's issue didn't

even rate a national sound bite shows that we are oblivious to the scope of the problem. On top of that, we are dealing with mandates from the Environmental Protection Agency (EPA) that are pushing large power suppliers into a corner in order to meet compliance timelines.

AEP, the nation's biggest coal-based utility, announced in June that it would shut down five aging coal plants, convert at least two others to natural gas and retrofit a dozen more as part of a \$6-8 billion plan to comply with proposed EPA regulations. We are moving further into a national crisis mode because of unrealistic compliance requirements, and the results will be catastrophic for consumers in terms of prices.

Further complicating the issue is this summer's situation. If power giants like AEP are forced to shutter coal-fired facilities, we ultimately squeeze our overall supply, especially during times of peak use, which will also increase costs.

I'm not one to operate in alarmist mode, but we are teetering on the edge of catastrophe in our ability to provide reliable and affordable electricity. Real, balanced action has to happen. I'm quite sure these issues, like jobs and the economy, will once again become major talking points as candidates position themselves for the 2012 presidential race, and I'm sure we will again be calling on our members to voice your concerns and encourage a balanced approach. Please stay tuned!



Robert Hance
President/CEO

An Easy Way to Manage Energy Use

Log-on to your account at TeamMidwest.com and view your family's electric use patterns.

In 2002, Midwest Energy became one of the first co-ops in the country to fully implement an automated meter infrastructure (AMI) solution. Not only does this system give us the ability to read meters remotely, it provides us with near real-time consumption information that allows us to better answer your questions about energy usage—especially related to high bill issues.

Several years ago we began sharing this usage information in a graph format on the back of your bill. Using the AMI, we presented detailed daily usage over that billing cycle to help you understand how your daily decisions impact your electric consumption.

With recent changes to the bill format, we've added even more information and detail to help you better understand and manage your electric use.

In October, we're taking all of that information to new and improved levels with the addition of a "Usage and Billing Analysis" tool that will make this information available to you through an easy-to-use website application. This allows you to see your monthly, daily and hourly energy use on a graph along with high, low and average temperatures. Other features include:

► An analysis tool to determine, on average, during which hours you are using the

most energy at that location.

► A billing comparison that shows a daily graph and allows you to compare your usage this month as compared to last month, or even the same month last year.

► A planning area where you can add events or actions that might impact your usage. These are called "Energy Markers" on your graph and signal that something has changed. For example, you might create an Energy Marker to indicate the day you recycled that old beverage refrigerator in your garage to determine how that decision impacted your usage.

This tool is available through the "Access My Account" feature on our website, and is accessible via a login and password from any location that internet service is available. Once you log-in to your account, just click on the "Usage and Billing Analysis" icon under the main menu and all of this information will be at your fingertips. If you have questions about what you see, you can call us and one of our customer care representatives will be able to view the same page and help you understand the information.

Power supply costs are continuing to rise, and your co-op is pleased to offer yet another way for you to manage your energy consumption and therefore your bill. Check it out today!



Sample monthly usage reading.



Sample daily usage reading.

Paw Paw Center Closing Announcement

On Tuesday, Oct. 18, Midwest Energy Cooperative's Paw Paw District Service Center will close at 11 a.m.

Payments may be made at the drop box and will be posted when regular office hours resume on Wednesday.

Please plan your visit accordingly.

Thank you for your cooperation!



No Nukes

I'll get right to the point. Nuclear power plants. I sincerely hope that co-ops are not serious about building them (May "Comment"). We are trying to rid the world of nuclear bombs, but consideration is given to these potential time bombs? There aren't enough safeguards that can be put in place to assure that an accident won't happen. Mechanical failure and human error are also elements to consider. It's not just the power plants located in areas of natural disasters, but any and all. They are expensive to build, dangerous, and the radiation residue is expensive and dangerous to dispose of. Even states with miles of desert and mountains that are virtually uninhabitable don't want it. Transporting it all across our country is pretty scary, too. I guess we have forgotten 3-Mile Island, Chernobyl and Japan.

The idea of building small nuclear power plants to serve individual communities is absurd (400 homes, or so, to a plant)? Who wants them scattered all over our pristine Michigan, waiting for an accident to happen? What would people do if such a thing occurred and they had to leave their homes forever because they could no longer be used? Who is this person that says solar and wind or hydroelectric power cannot hold up their end of the power grid? He's wrong; we've made great strides toward using that very kind of green energy. Natural gas is a much more viable power source (coal is not a favorite—it's dirty and there are accidents—just ask the people of Tennessee who can no longer farm their

land or live in their homes after the accident there with coal residue. However, I would prefer that to nuclear power.

I'm also curious how tall this 72-year-old (F. Hartway letter, June) is that he has to "duck" under a windmill blade to go fishing. They are graceful to watch, quiet and clean.

We should follow the common sense of Italy, which voted down nuclear power plants, and Germany, who plans to abandon it in the next 11 years. Convincing India, Pakistan and Iran to do the same is one of the greatest challenges the world faces. I hope the U.S. will not be resistant to vacating nuclear power plants.

We have become so selfish with our "wants" to own every toy that technology produces that we are not seeing what it is doing to all of us. We can do without more and more energy, if everyone would be sensible. Talk about having kids and grandkids paying for something in the future! Perhaps since "they" insist on more power, then let the "little darlin's" pay.

Meanwhile, individuals should try to be more self-sufficient. Look for ways to provide water, heat and light without a power grid attached to it. If you don't do it voluntarily, you may be "forced" into it down the road. I say, 'no nuclear power plants!'

Jobs lost? Not. Green energy will provide jobs through building and maintaining the different systems. We've only just begun.

—Bonnie Kenzie, Jackson

Editor's Note: As Craig Borr, CEO of the Michigan Electric Co-op Assn., noted in the article, electric co-ops support a diversity of power supply sources, including renewables, coal, natural gas, and nuclear power under defined safety measures. He also noted the need to shut down outdated coal plants. But these baseload supply

sources will need to be replaced to meet current and ever-growing demand, and as service providers, co-ops know firsthand this will require more than renewables alone. Renewable energy cannot and will not replace coal and nuclear as viable forms of baseload generation (coal and nuclear already make up 80 percent of the U.S. power supply).

You are right that we all need to embrace energy efficiency. Also, since you and others are their owners, nonprofit electric co-ops work to keep electricity affordable.

Q & A About CFLs

I have been switching to CFL bulbs to supposedly save money, but the life span of these are terrible and I am only using them where recommended. The two fixtures I have problems with also have ceiling fans. I have used bulbs from the EO program, store brand (Meijer), and GE bulbs, but they do not last in these fixtures. They are not totally enclosed (open bottom), they hang upside down, and the switch is off when I replace them. Several have burned out, and the last one lasted only MINUTES! Is there an issue with the fan? The light and fan are on separate switches.

CFLs are costing me more \$ instead of saving since the CFLs cost more. Any ideas what may be going on? I never had issues with old-style bulbs.

—Jeff Cherwinski

Editor's Note: There are several possible answers, as described by Sandra Hall, an engineer at Cherryland Electric Co-op:

- Some CFLs are not designed for inverted use because heat can rise to the electronic ballast and cause an early burnout.

- CFLs are susceptible to vibrations—if the fan offers this, a CFL will not last its anticipated life.

- If the fixture has solid-state dimming components (even bulbs that specify dimming capability), the ballast and fixture may not

always jive, and burnout occurs.

- The type of voltage fluctuation, (either high or low) that can result from a storm or overloaded circuits can also deter the possibility of a long-lived bulb.

Recycling Refrigerators

I just bought a new fridge and need to get rid of the old. Please let me know what you may offer in this case. Thanks.

—Don Hollis, Grayling

Editor's Note: Call 877-296-4319 or see michigan-energy.org to check if your electric co-op currently offers this service. Also, recycling services vary by area and season, but many retailers (Best Buy, etc.) will pick up and recycle an old appliance when you buy a new one. See energystar.gov and click on "Recycling with Energystar" for details. Local utilities, scrap metal recyclers, waste management facilities and energy efficiency groups now offer appliance recycling, as well.

Mabel's "Ageless Art"

In 2008 [June], I read in *Country Lines* about 96-year-old Mabel [Pechta] and her art and life. Her story was fascinating, and I loved her lighthouse art.

I wrote to ask if she could do one of the lighthouses for me that I admired in the picture of her outside her home in Moran—a lighthouse on a stony cliff with waves crashing the rocks. She said yes, but had 10 works to do for other people first. True to her word, she completed my art in early 2009. It was very beautiful, and hangs in my front hall.

Recently, my husband and I went to the U.P. and were sad to find that she passed away in 2010. I wish I could have met her, but the best thing is that I have one of her artworks and the note she wrote about it.

We express our belated condolences to her family and hope memories of her great life are helpful to them.

—Joyce Healy

The Proof is in the Pudding

Refrigerator standards have saved consumers billions.

What's your favorite late night snack—that go-to treat that melts away the day's troubles as you curl up in front of the TV? Maybe it's a creamy bowl of Rocky Road or delicious, spicy Szechuan chicken left from a take-out feast. Refrigerator finds like these may make you feel guilty, but at least you don't have to feel bad about how high your energy bill will be to cure your cravings. That's because of new technologies and meaningful energy conservation standards put in place by the Building Technologies Program of the U.S. Department of Energy (DOE).

In recent decades, the DOE has led technological innovation that vastly improved the energy efficiency of refrigerators, freezers and thousands of other household appliances. As a result, it's a lot easier on your

pocket and the environment to keep ice cream at frosty perfection. In fact, today's refrigerators use only about 25 percent of the energy required to power models built in 1975. Even while continually improving to meet efficiency standards, refrigerator size has increased by about 20 percent, added energy-using features such as through-the-door ice, and provide more benefits than ever.

The dramatic rise in efficiency began in response to the 1970s oil and energy crises, when refrigerators cost about \$1,300—a hefty price for an energy waster. Refrigeration labels and standards have improved efficiency by 2 percent every year since 1975. Due to research, useful tools, partnerships with utilities and other organizations, and market initiatives that helped enable appliance standards,

the DOE helped avoid construction of up to 31 power plants (1 gigawatt size) with the energy saved since the first federal standards in 1987. That's the same amount of electricity used annually in Spain.

Manufacturers have responded with new innovations and products to meet, and often exceed, the new requirements. Refrigerators performing above and beyond the minimum standards qualified for the Energy Star® label, motivated consumers to save energy, and primed the market for continued efficiency improvements.

These progressive energy-efficiency standards translate into big savings for consumers. Today's refrigerators save the



Photo - iStockphoto.com

nation about \$20 billion per year in energy costs, or \$150 per year for the average American family.

The next proposed increase in refrigerator and freezer efficiency (2014) will save almost 4.5 quadrillion Btus over 30 years. That's

three times more than the total energy currently used by all refrigeration products in U.S. homes annually. It also equals energy savings that could be used to power one-third of Africa for an entire year.

The DOE continues to invest in future innovations for energy efficient products. So, go ahead and indulge with those late night treats. Your fridge has you covered.

Roland Risser directs the DOE Building Technologies Program. For more on appliance standards and how they save you money, see eere.energy.gov/buildings.

Leave the Pole Alone

Placing a sign on a utility pole could endanger a life.

What do yard sale signs, basketball hoops, deer stands, satellite dishes and birdhouses have in common? They're often found illegally attached to utility poles. But this isn't only a crime of inconvenience. Safety issues caused by unapproved pole attachments place the lives of lineworkers and the public in peril.

It may seem innocent, but a small nail partially driven into a pole can have deadly results around high-voltage electricity.

Your local electric co-op line crews climb utility poles at all

hours of the day and night, in the worst of conditions. Anything attached to utility poles can create serious hazards for our line personnel. Sharp objects like nails, tacks, staples or barbed wire can puncture rubber gloves and other safety equipment, making lineworkers vulnerable to electrocution.

Lineworkers with electric co-ops have reported poles used as community bulletin boards, satellite mounts, and even support legs for deer stands, lights and carports. Not only do these attachments put line crews at risk,



Photo - iStockphoto.com

anyone illegally placing these items on poles comes dangerously close to energized power lines with thousands of volts of energy pulsing overhead. It's always wise to keep any structure at least 10 feet away from utility poles.

Unauthorized pole attachments violate the *National Electrical Safety Code*, the accepted manual containing guidelines for safe electrical engineering standards. Utilities strictly follow this code, which includes a

section that reads, "Signs, posters, notices, and other attachments shall not be placed on supporting structures without concurrence of the owner (the utility is the owner of the pole). Supporting structures should be kept free from other climbing hazards such as tacks, nails, vines, and through bolts not properly trimmed."

Please help us keep our lineworkers—and our community—safe. Don't attach any of these unauthorized and dangerous items to utility poles. Fixtures not belonging to the co-op or another utility will be removed by co-op line personnel, and the co-op is not responsible for any losses if an item is damaged or destroyed during removal.

Free Electrical Safety Programs

One of our responsibilities as an electric utility is to teach people about the hazards of electricity, and it's a responsibility that we take very seriously.

We all tend to take electricity for granted, until it's not there. Then we realize how dependent we are on the flow of current for our everyday existence. However, electricity should not be taken for granted or treated lightly. It is critical that adults and children alike are aware of the potential dangers of electricity and how to act accordingly.

Midwest Energy offers electrical safety programs for schools, churches, emergency response teams, civic groups, and other organizations. The programs are free and can be conducted right in your own facility and adapted to the length of your class or program period. We have two interactive programs that carry a strong message about respecting electricity. The Hot Line Dem-



Rich Drews, a Midwest Energy field technician, provides safety training using the Hot Line Demonstration trailer.

onstration features a trailer equipped with poles and power lines that carry 7,200 volts of electricity. The program shows how different elements are affected by electrical contact, and can be adapted for nearly any audience. We also offer Hazard Hamlet, a portable model

suited for schools, which highlights electrical safety concerns in everyday situations.

For more information about our safety programs, or to schedule a presentation, please contact Lori Ruff at 269-445-1139, or by email to lorir@teammidwest.com.

Increase energy efficiency. And your bottom line.

Midwest Energy helps commercial and industrial members **save energy** and **protect the environment** through valuable rebates for energy efficiency improvement projects, including:

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- HVAC
- Refrigeration
- Food Service Equipment
- Motors, Fans, Pumps & Drives



In order to qualify for incentives within Commercial and Industrial Programs, applicants MUST obtain written approval prior to any installations. Please call 877.296.4319 or email EnergyOptimization@FranklinEnergy.com for pre-approval.

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- Rebates for recycling old appliances
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- No-cost energy efficiency improvements for income-qualified households



Must be a Michigan resident and receive service from Midwest Energy to be eligible for this program. Items purchased must be installed in a home that receives service from Midwest Energy. For residential accounts only while supplies last. Restrictions may apply.

Learn about our programs at michigan-energy.org • Questions? 877.296.4319

Building A Better World

In today's uncertain economic times, the goal of building a better world can be a much larger task. We want our children and neighbors to succeed. We need strong, sustainable communities. But how *do* we build a better world?

History tells us when we band together we can do anything. Together, we can build a better world. That's where cooperatives come into play.

October is when we traditionally celebrate National Cooperative Month, but this time we kick-off a year-long celebration marking the International Year of Cooperatives 2012. Our theme, "Cooperative Enterprises Build a Better World," resonates loud and clear in our turbulent national—and global—economy. The year offers a chance for us to showcase our legacy of innovation and achievement, and reminds us of what's important in business—putting people first.

As a member of an electric co-op, you know we're focused on providing safe, reliable and affordable power. But this community-driven business model doesn't stop at your light switch. There are 29,200 co-ops across America that take many forms, from farmers banding together to get a fair price on supplies to credit unions delivering low fees and reasonable interest rates on loans. Our business model works for dairy farmers and small business

owners, financial institutions, grocery stores, insurance, housing and child care.

One of every four Americans is a co-op member, and there are over 1 billion members around the world. Co-ops fill a community need, giving a voice to folks that profit-driven businesses often overlook. Co-ops share a common set of principles and values, including self-help

"Co-ops fill a community need, giving a voice to folks that profit-driven businesses often overlook."

and—one of my favorites—democracy.

Electric cooperatives may only serve 12 percent of Americans, but our lines cover 75 percent of this great nation. By banding together, we deliver power to 42 million rural Americans in 47 states—and we're not finished.

Through international programs sponsored by the National Rural Electric Cooperative Association (NRECAFoundation.coop) co-op lineworkers are volunteering overseas to deliver electricity to 2 billion people living without power (see "Global Connections," p. 12). Over the last 50 years, these efforts have provided light and hope to 100 million people in over 40 countries. That's how electric cooperatives build a better world.

It's important to remember that co-ops put people first. We brought electricity to our communities to improve our quality of life and keep young people from leaving to seek opportunities in "electrified" cities. Nearly three-quarters of a century later we still want our children to succeed. That's why we support programs such as the Rural Electric Youth Tour and Michigan Electric Cooperative Teen Days. Last summer we sent 16 high

Craig Borr is the president and CEO of the Michigan Electric Cooperative Association. His email is cborr@countrylines.com



school students to our nation's capital to learn about leadership, teamwork and our nation's ideals. Thirty five students were sponsored by Michigan electric co-ops to Teen Days, and many also offer scholarships that help send local students to college. These budding leaders will help us build a better world.

We also want to celebrate our legacy of innovation. Co-ops adapt quickly to change, and we work together—cooperatively—to find solutions to improve service for our members. Can you imagine profit-driven utilities working together to keep bills affordable?

At your electric co-op, innovation takes many forms—from energy efficiency (visit Michigan-energy.org and TogetherWeSave.com) and renewable energy efforts to transforming the electric grid. Each innovative step forward builds a better community for all of us.

Whenever a community faces a need—a challenge to make life better—the cooperative business model comes into play. By putting people first, employing local people, helping businesses with economic development, and innovating to meet our members' needs, cooperative enterprises build a better world. To learn more, visit go.coop.

Silent Sentinels

Electric co-op poles remain the key to safe, reliable, affordable power.

The path of power to your home is guarded by silent sentinels—utility poles—that are under constant attack by Mother Nature and, sometimes, by people.

“About 38,832 miles of line, supported by utility poles, keeps power flowing across Michigan,” explains Joe McElroy, loss control specialist and safety consultant for the Michigan Electric Cooperative Association.

Nationwide, electric co-ops own and maintain 2.5 million miles of line stretching across three-quarters of the U.S. landmass. Some lines are buried, but over 2 million miles of line are above ground. Since there are generally 18 wood poles for every mile of distribution line, electric co-ops rely on more than 37 million poles to safely and reliably deliver affordable power to your home.

Pole Patterns

Utility poles take several forms: concrete, steel, ductile iron, composite fiberglass, and—overwhelmingly—wood. Why do utilities prefer treated timber?

Tried-and-true wood poles are more affordable—steel and composite fiberglass poles often cost at least twice as much, although these alternatives claim a longer lifespan (most have not been in service long enough to verify the claims). Combined with a proven service life that can span several decades, treated wood poles provide the most affordable choice for most electric co-ops.

“Generally, utilities turn to alternative poles when nothing else will work,” explains McElroy. “If you’ve got a woodpecker problem, wood simply won’t cut it. Utilities in storm-saturated parts of the country may

turn to underground lines, but more often than not these utilities opt to ‘harden’ their lines by installing larger wood poles and shortening the span between poles to help the system weather storms more successfully.”

For utilities battling copper crime, ductile iron poles offer an interesting option—they eliminate the need for copper grounding wires running up the side of a pole. But these poles aren’t as easy to climb in a pinch, and could pose a problem if not easily accessible by bucket truck.

“Co-ops expect poles are going to last at least 40 years in the field, barring unpreventable storm damage and other accidents,” stresses Jim Carter, executive vice president of Wood Quality Control, Inc. (WQC), a subsidiary of the National Rural Electric Cooperative Association. Carter estimates

that co-ops are responsible for between one-quarter and one-third of the nation’s annual wood pole production.

Each year, electric co-ops spend roughly \$300 million to purchase close to 1 million wood poles and 2 million crossarms—amounting to a whopping 20 percent to 33 percent of a co-op’s annual materials budget. Created in 1982, WQC works closely with manufacturers and co-ops to monitor pole construction conditions and make sure co-ops invest in high-quality poles that meet strict federal Rural Utilities Service (RUS) standards.

Double Duty

Not only do poles support the nation’s power system; telecommunication companies often rent space on poles to attach



Photo Courtesy - National Archives

Left: Raising utility poles before 1935 was a primitive task, but soon the Rural Electrification Administration developed assembly line methods and standardized electrical hardware that lowered costs and made rural electrification more feasible. **Right:** A Cloverland Electric Cooperative (Dafer, MI) crew shows how power equipment is used today to help raise utility poles.



Photo - Wendy Malaska

telephone and cable wires.

Each pole, averaging a height of 40 feet, breaks down into three zones. The supply space, which shuttles electricity from generation plants and substations to homes and businesses, can be found at the top of every pole. In most cases, a crossarm—a beam fixed horizontally across the top—divides the supply space from the middle ‘neutral’ space, called a safe zone. The safe zone forms a barrier between lines carrying high-voltage electricity and the area rented to other utilities, known as the communications space.

Hazardous Mission

Affordable wood poles stand the test of time—each pole’s lifespan ranges from 30 to 50 years, and in the right conditions can last much longer. To lengthen a pole’s life, wood is pressure-treated with preservatives. But no matter how strong a pole may be, both nature and people threaten a pole’s ability to serve.

Wood poles battle a wide array of adversaries: acidic soil in the Midwest, heavy moisture in the South, and woodpeckers in the Mid-Atlantic. Utilities generally inspect poles on a 10- to 12-year cycle to identify potential problems.

Poles age differently depending on region, so RUS divided the nation into five decay zones. Poles in Zone 1—Idaho, Montana, Wyoming, Utah, Nevada, Colorado, Arizona, New Mexico, and portions of Alaska, Nebraska, South Dakota, Kansas, Oklahoma, and Texas—face the lowest risk of decay, while Zone 5 poles in Louisiana, Florida, Hawaii, and the coastal regions of Alabama, Mississippi, Georgia, South Carolina and Virginia sustain the highest risk. Utilities generally replace 2 to 3 percent of aging and decaying poles every year.

Natural decay, storm damage, and bird and bug attacks aren’t the only concerns. People shorten a pole’s lifespan, too.

The National American Wood Council estimates 5 percent of poles replaced annually were broken by car accidents. Attaching signs, basketball hoops, clothes lines, birdhouses, satellite dishes, or other items to wood poles with staples or nails can also shorten a pole’s lifespan. Not only do these items create safety hazards when lineworkers need to climb a pole; even small holes speed a pole’s decay.

Strong poles deliver reliable power.

Sources: NRECA, Wood Quality Control, Inc., American Wood Protection Association, Western Wood Preservers Institute

Why Keep Power Lines In Harm’s Way?

High winds and ice can cause tree limbs to fall on power lines and trigger outages. And while your electric co-op’s lineworkers are on-call 24/7 and respond quickly to problems, some folks ask the question: “Why keep power lines in harm’s way?”

There are two ways electricity can be delivered to a home: through overhead or underground power lines. Underground lines may seem preferable since the lines are not exposed to extreme weather, but the technology doesn’t always make sense for electric co-ops focused on affordability.

In Michigan, the cost of installing power lines underground is 50 to 60 percent higher than overhead lines, says Terry Rubenthaler, vice-president of engineering for Midwest Energy Cooperative in Cassopolis. Overhead installation costs can range from \$40,000-\$90,000 per mile of line, and from \$70,000 to \$150,000 per mile for underground lines, he says.

By comparison, in Iowa, underground lines average \$85,000 to \$100,000 per mile, while overhead line construction runs about \$60,000 per mile. In Georgia, in mountainous or rocky areas, where lineworkers sometimes use dynamite to install utility poles, the price tag may be even higher.



Photos - iStockphoto.com

Most underground lines nationally are found in subdivisions where developers pay for the option for aesthetic reasons or to comply with local statutes. A high concentration of homes in these areas helps spread out the expense. According to Hi-Line Engineering, a Georgia-based utility consulting firm, nine out of 10 new subdivisions are served by underground cable.

But the bulk of co-op energy (including that provided to subdivisions) continues to be delivered through overhead lines—only 16 percent of the 2.5 million miles of distribution lines owned by electric co-ops nationwide are found underground (although the amount grows by about 1 percent annually). Co-ops are nonprofit, selecting methods that keep electricity affordable and reliable for consumers.

There are pros and cons to both forms of power distribution. Underground facilities are more reliable during storms and generally require less right-of-way maintenance because there are no trees, brush and other vegetation to clear away.

However, faults in underground power lines are not easy to track and fix. A North Carolina study found that outage restoration times averaged 92 minutes for overhead versus 145 minutes for underground lines. In 2005, Hi-Line Engineering compared the larger cost of underground lines against their benefits in Virginia, and found that underground savings did not outweigh the heavy installation cost. In Michigan, Rubenthaler says underground outage restoration can take significantly longer—four to five times, but there are not as many outages, either.

“If a tree falls on a line, you can normally drive down the line, see the problem, and get to work restoring power,” adds Rubenthaler. The same holds for fixing broken insulators and crossarms—if you see it, you can fix it, but experts agree that underground lines are tough to troubleshoot. If you can’t find the problem with your eyes, you have to search harder—tracking it down based on where the power flow stops. Then, a line crew has to dig a hole to reach the spot before repairs can be made.

For most co-op consumers, affordable overhead lines will remain the norm, at least for now.



Volunteer lineman Phil Hogan from Habersham EMC in Georgia takes a break from wiring new utility poles to spend time with local children in Yei, Sudan.

Sentinels, p. 10).

Work progressed quickly. By October 1940, electric co-ops nationwide were serving 1 million members. Innovations in line building pioneered by REA engineers and the competitive pressure co-ops placed on investor-owned utilities to serve rural areas slashed the cost of providing rural electric service by 50 percent or more.

Three-quarters of a century later, electric co-ops are still building a better future by delivering affordable service to 42 million members spread across 75 percent of the nation. But electric co-ops didn't stop there.

Lighting the World

The year 2012 will also mark the 50th anniversary of NRECA International Programs, a division of the National Rural Electric Cooperative Association (NRECA). And, the "building a better world" theme shines in the work NRECA International Programs performs every day.

Working together, over 300 U.S. electric cooperatives have delivered the benefits of safe and reliable electric service to more than 100 million people in 40-plus countries since November 1962.

After the massive earthquake in Haiti in 2010, a lineworker from Cherryland Electric Cooperative (Grawn, MI), Lane Wildfong, traveled to the ravaged country with his church group and spent time helping build a 16x24-foot clinic. Before the clinic was built, patients were seen under tarps to cover them from the harsh temperatures. "It was in the 90s during the day and in the 80s at night," he explains.

Wildfong also spent time helping the Haitian people in any other way he could. "With my electrical background at Cherryland, I did the wiring for the clinic," he says. "But they didn't have electricity yet. I just got it ready to be hooked up when electricity becomes available."

"In just the week we were there, you could see how hard the Haitian people were trying to keep going, trying to forge

Global Connections

Electric co-ops and their employees make an impact at home and abroad.

Building a better world can happen by changing one life at a time.

Driven by this premise, electric cooperatives brought power and light to millions of consumers across the United States, forever altering the economic fortunes of rural America. Now, with the designation of 2012 as the International Year of Cooperatives (see page 9), 900-plus electric cooperatives around the country are celebrating the impact they have made in Michigan and overseas.

Farming Revolution

As late as 1935, nearly 90 percent of rural residents were living in the dark—forced to rely on iceboxes or spring houses to cool food, kerosene lamps for lighting, wood stoves for cooking, and fetching water from wells. The reason: the big investor-owned utilities had decided that there was no profit to be made extending power lines into the countryside to hook up farms and small towns.

That's where the co-op business model came into play.

Farmers and other leaders realized central station electric service would end the drudgery of rural life. After clamoring for relief for decades, they received a big shot in the arm in May 1935 when President Franklin D. Roosevelt signed an executive order creating the federal Rural Electrifica-

tion Administration (REA)—now called the Rural Utilities Service (RUS). The agency's mission: provide low-cost loans as well as engineering and administrative support to help electrify rural regions.

"Electricity is a modern necessity of life and ought to be in every village, every home, and every farm in every part of the United States," Roosevelt announced.

REA financing initially was meant to entice big power companies to begin rural line construction. When they balked, it soon became clear rural electrification would only be accomplished by farmers and their rural neighbors doing it themselves by joining forces to form electric cooperatives (see Silent



Fifty years ago President John F. Kennedy asked NRECA to join forces with the U.S. Agency for International Development (USAID) to share electric co-op expertise and export the democratic, self-help cooperative model to undeveloped countries.

Lane Wildfong, a Michigan lineworker, helped build a clinic in Haiti and helped this mother deliver her baby.

ahead,” he said. “Markets were going back up and people appreciated the little things that we brought over with us, like flashlights, toys and candy.

“I think what we did—and what the relief effort is doing—is offering a glimmer of hope to these people again. And they are responding with kindness and smiles. That’s what kept us going.”

“Building a better world takes experience, and no group has more experience in bringing low-cost power to remote communities than electric co-ops,” explains Glenn English, CEO of NRECA.

At the invitation of President John F. Kennedy, NRECA joined forces with the U.S. Agency for International Development (USAID) to share electric co-op expertise and export the democratic, self-help cooperative model to undeveloped countries. In many cases, teams of volunteer American electric co-op linemen head to foreign lands for a few weeks to teach local lineworkers safe work practices. Then NRECA staff instructs locals how to maintain simple power grids and run their own utilities.

“We’re not only providing a service, we share knowledge and best construction practice skills on a lineman-to-lineman basis,” explains Ixcan, Guatemala volunteer Chris Stephens, manager of engineering for Palmetto, GA-based Coweta-Fayette Electric Membership Corporation. “Those we help may speak a different language, but they speak the same work.”

Funding for this goodwill effort comes in part from the NRECA International Foundation, a registered charitable organization. NRECA International Programs projects are currently under way in Afghanistan, Bangladesh, Bolivia, Costa Rica, Dominican Republic, El Salvador, Guatemala, Haiti, the Philippines, South Sudan, Tanzania, Uganda and Yemen.

Much More to Be Done

In America, electricity has evolved from a luxury to an essential part of daily life, yet more than 2 billion people around the globe still live without power—64 million in Latin America, 500 million in Africa, and more than 1 billion in Asia.

According to NRECA International Programs, reliable electricity strengthens communities by providing better educational opportunities and increasing safety. Access



Photo courtesy Lane Wildfong

when I got home.”

“It made me feel good to know that we helped in a small way,” Wildfong adds. “And little by little, their conditions are improving [in Haiti]. That’s what keeps them going. That’s what gives them hope.”

“It was a humbling experience, to see the way people lived compared to what we have,” agrees Craig Carlan, a lineman for a Georgia electric cooperative, who worked in Guatemala. “In the village we electrified, kids will have the opportunity to get a better education. They have dreams, too, just like we

to power also paves the way for progress, giving small business a much-needed boost.

“It made me realize how blessed we are here and how we take the great lives we have for granted,” Wildfong recalls. “When I got home, I hugged my wife and kids so hard. My wife and I cried together for a half-hour

have dreams. Maybe they can set higher goals now.”

To assist NRECA International Programs efforts, visit NRECAFoundation.coop.

Source: *NRECA International Programs, U.S. Department of Energy*

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Women Hunters Unite

Northern Michigan is chock full of hunters, and there is no problem finding all the hunting gear, accessories, tools or publications to learn about the sport...unless you're a woman," says Mary Dugas, a member of Presque Isle Electric & Gas Co-op.

Herself a woman who likes to hunt, Dugas sent in *Woman Hunter* magazine, "the first and only hunting magazine for and by women," as her favorite Michigan-made product.

"It was started by my friend, Lisa [Snelling], who had never hunted before and just couldn't kill anything," Mary explains. "Well, she wanted her husband, an avid hunter, to take ballroom dancing lessons with her so they could have an activity they could share." What really happened, she adds, is that he convinced Lisa to go hunting with him, and she fell in love with the sport.

"Like most good women, she felt the need to accessorize for her hunting trips," Dugas adds, "but alas, there was not much available for women."

While admitting that *Field and Stream* and *American Hunter* are very good magazines, there was no publication about women and



Lisa Snelling

their hunting experiences. That's why Snelling, of Flint, decided to start one herself, with the first issue going online in September 2007, and into print two years later. Today, Snelling says it's both a hunting magazine and a networking website that offers women a number of ways to participate and communicate with each other. Included is a free forum for veteran and novice hunters to submit written articles and chat about hunting experiences ("good, bad, ugly and glorious"), exchange wild game recipes, contribute to product reviews, and find information about outdoor events.

Snelling operates the small business with only four freelance employees, while working full-time herself as an IT consultant. But she has high hopes for expanding the magazine's current circulation of 1,500, and plans to have a toll-free number in place soon (for now, write to *Woman Hunter* Magazine, 4225 Miller Rd., #255, Bldg. 9, Flint, MI 48507 or visit thewomanhunter.com). She also sells



Woman Hunter logowear and says they haven't been able to find another women's hunting magazine like it in the world. "We'd like to see the magazine right next to People and Time magazine," she says.

Whether you're after small game, big game, waterfowl, dangerous game, or are just a curious onlooker, "Veteran women hunters can provide invaluable tips to newer women hunters," Snelling explains.

"And by the way," Dugas adds playfully, "her husband never took those [dance] lessons."

Hang 'Em High

A couple hunting seasons ago, Ron McGhan had an unfortunate surprise. Four wrist operations had robbed the Muskegon resident of the strength he needed to pull back his recurve bow. Frustrated, but not to be deterred, he bought a crossbow instead.

"I found out while sitting in my treestand the crossbow and rifle were hard to hold onto and that is when I came up with the idea of a crossbow and rifle hanger," explains McGhan, a member of Great Lakes Energy Cooperative. Again taking matters into his own hands, he invented a unit he calls "Hang It High." "It enables a hunter to sit hands-free with either a rifle, crossbow or compound bow," McGhan says.

The hanger is designed to extend up to 32 inches straight out from a tree, can be adjusted to the forward or backward lean of the trunk, and is secured with two ratchet straps. McGhan's product has been on the



Ron McGhan

market since 2009 and he's added options such as an adapter for an umbrella and video camera.

Found in a number of local sporting goods stores in Hesperia, Montague, Muskegon, Cadillac and Allendale, it's also available now at Jay's Sporting Goods and Schupbachs Sporting Goods in Jackson. Visit crossbowhanger.com or call 231-557-7185 for more information.

McGhan is proud that his product is "made entirely in the USA."

Right: The crossbow and compound utility hanger invented by Ron McGhan holds different types of guns or a crossbow, and has interchangeable hangers. See a video demonstration at crossbowhanger.com



Photos courtesy Ron McGhan

Tell us about your favorite, or a unique, Michigan-made product. Send an email to czuker@meca.coop or mail to: C. Zuker, Country Lines, 2859 W. Jolly Rd., Okemos, MI 48864. Thanks!



A strutting male sharp-tailed grouse.



Photo: iStockphoto.com

Grouse Season Is On Again

After a 12-year hiatus, the resumption of a sharp-tail grouse season in the U.P. last year proved two things.

First, that habitat and breeding ground management efforts have paid off in stabilizing and increasing the numbers of this “prairie” grouse in the eastern U.P. Secondly, hunters seem happy to add this grouse to their stalks for ruffed grouse and woodcock.

“In fact, the 398 hunters who actually hunted for this true grouse family member spent 1,425 hunter days and collected 217 sharp-tails for their efforts,” said Al Stewart, who oversees forest game bird management for the DNR wildlife division. “Of the hunters who pursued this grouse, 62 percent hunted over a bird dog while making this first sharp-tail hunt in a dozen years in Michigan.”

Biologists were able to track hunter success thanks to a required sharp-tail stamp (free when you buy a small game license) that allows them to follow up with post-season surveys of those who actually hunted and those who just get the stamp to help support restoration efforts.

Information derived from the survey is interesting beyond just the number of birds collected. For instance, the results showed that the hunters were mostly male, averaged 44 years in age, and most encouraging was that 6 percent were under the age of 17—a sign that younger members are coming into the upland game hunting ranks.

A total of 2,571 sharp-tail stamps were given, even though the actual number of hunters specifically afield for the sharp-tails was 398.

Sharp-tails, common to tall-grass prairies, moved into the U.P. from the west after sweeping fires that followed after logging of the original pine forests created good habitat. Later, they were found in both peninsulas—brought below the Straights by what was then called the Conservation Department—to northern lower areas where conditions were good for release.

But aging and encroachment of the forests, recovery of burnt-over lands, and man-made land changes began a slide into extinction for the bird in the lower state by the mid-60s, and a decline in the U.P. that called for a halt to hunting there.

Sharp-tails were able to hang-on in the lower peninsula for a while, but the last sites went silent in the mid-90s when their cooing, shrieking, foot-stamping dances and the frenetic challenges of males making their courtship rites that were so interesting when viewed from a blind located close to a lek (breeding ground), came to a halt.

The last-known area of sharp-tail grouse in the lower state was on Camp Grayling National Guard lands. Unfortunately, this was also on their bombing grounds, and with unexploded shells in the area the public is prohibited from entering these grounds, Stewart said. “It’s a bit like that area near

Roswell, NM, where the UFOs were supposed to have landed. If there are any sharp-tails there, they might as well be from Mars as far as the public is concerned,” he quipped.

Today, the sharp-tail hunting area is primarily within U.P. land east of I-75, the core of the sharp-tail habitat restoration, and will remain the same for this season, from Oct. 10 through Oct. 31. The daily bag limit will be two birds in possession the first day, four in possession after that, and six birds maximum for the entire season.

Habitat management efforts continue to keep state lands in a favorable high-brush and tall-grass state for the grouse.

“We’re working with two universities on lek sites in the U.P. sharp-tail area,” Stewart noted. “We monitor all leks we find, and are working to establish a protocol for maintaining these important sites. We’re working with the U.S. Forest Service in this study.”

For now, those wanting to hunt a sharp-tail grouse in Michigan will wisely head up to the eastern U.P. where the chances to find—or even collect one—is a much more ‘down-to-earth’ opportunity.

Don Ingle is an avid outdoorsman and award-winning outdoors writer that submits regularly for Country Lines.



Science Matters

Kate Bassett was sitting in her living room when her 6-year-old son Max ran in, asking for two balloons.

"The next thing I knew, he had filled one with water and one with air, and was standing in the kitchen determining which would pop with greater ease when he jumped on them," Bassett said.

And while she appreciates science experiments that don't end up on the kitchen cabinets, the Harbor Springs mother of three said there's nothing like seeing her children have an "a-ha" moment.

"Watching them light up when they really get a concept, even a gross one like how bacteria forms on a half-eaten sandwich wedged under a booster seat, is so very cool," she said.

And while the Bassett family is having fun exploring science, children Noah, Max and Elizabeth are making important connections up-top.

Jill Osborne, fifth grade teacher at Sheldon Woods Elementary School in Holland, MI, explains the science behind these experiments:

"Neurons in our bodies send messages to each other across synapses," Osorne explained. "We're all born with most of our neurons already there, but we don't have many synapses, or connections, yet. As we grow and develop, our brains continue to form new synapses between the neurons. These connections, or paths, are crucial to everything we do. The more experiences we have when we're young, the more synapses develop."

Human brains have a "use it or lose it" approach, she said. "The synapses we use are kept, and the synapses we don't use are eliminated. So the experiences we give our children early in their lives affect the development of their brains and greatly influence what they'll be able to do—or not do—when they're older."

Science Report

It's a concept that's hard for some parents to act on. A 2010 survey by the National Science Teachers Association and Boehringer Ingelheim Pharmaceuticals, Inc., found that science is among the subjects parents are least comfortable discussing with their kids—even though 98 percent of teachers

agree that parental involvement is important for kids to be interested in science.

And like those synapses, if kids don't work on developing a love for science, they may lose it altogether. National Assessment of Educational Progress figures show only 18 percent of American high school seniors perform at or above the proficient level in science, and international test scores show that U.S. students lag significantly behind their peers in the subject. According to teachers, parents are key to upping those scores, by engaging in experiments and "how things work" conversations at home, and by making science part of daily life.

The Science-friendly Home

Kids are naturally curious, so kitchen counter science doesn't have to be difficult. The Bassett family picks up on the science around them—mom and dad simply have to point it out, and the kids, with their innate love for investigating, run with the concepts.

"Anything that can be done in the kitchen, from exploring the combinations of oil and water to graham cracker earthquakes can serve as fun learning for the whole family," Kate said. "Pulley systems or levels and wedges get used all the time when the boys are building forts, and whenever they can, they find reasons to combine baking soda and vinegar."

"One experiment my kids never tire of is the two-liter diet cola and roll of Mentos trick. It creates a chemical reaction that causes the soda to shoot, geyser-style, from the bottle."

These simple, hands-on projects are what young kids need most to foster a passion for science, Osborne said.

"Flash cards and quizzes aren't important at a young age," she said. "Synapses are formed when kids go to the beach and feel the sand



Photo - iStockphoto.com

"The experiences we give our children early in their lives affect the development of their brains and greatly influence what they'll be able to do—or not do—when they're older."

– Jill Osborne, Sheldon Woods Elementary School Teacher

and waves, when they jump in puddles after the rain and watch the water flow in downward streams and wonder where the water goes as it dries; when they measure and mix and watch the muffins rise in the oven, when they hike through the woods and differentiate between leaf shapes and listen for bird songs and turn logs over to look for bugs."

The more experiences kids have at a young age, she said, the more background knowledge they have as they get older. "And, the easier it is for them to learn more difficult concepts as they progress through school."

Try This!

- Ask your kids questions like "I wonder why that happened?" or "Can you find another way to...?" and "I wonder what will happen if...?"
- Accept and try out your child's ideas.
- Use all five senses when you can. Touch, poke, prod and explore things you come across in your day, from dust bunnies to icicles.
- Take tours in your area—many are free! Try your local chocolate shop, factory, zoo or college.

Lisa Doublestein is a regular *Country Lines* freelance writer, educator and mom.



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Puddings & Custard

Most will agree, pudding is a simple comfort food. Delicious served warm, but many require time to set up fully. To prevent a skin from forming on the top, cover the bowl or dish with plastic wrap or waxed paper. Find hundreds of recipes at countrylines.com.

Party Meringue Pudding

5 egg whites (2/3 c.)
1 c. sugar
2 t. baking powder
pinch salt
1 t. vanilla
1 lb. dates, finely chopped
1 c. pecans
2 T. flour

Beat egg whites until stiff. Slowly add sugar, baking powder, salt and vanilla. Mix dates, pecans and flour, fold into egg white mixture. Pour into 11x7x2-inch baking pan. Set in larger pan of hot water. Bake 1½ hours at 325°. Cool to room temperature and scoop into dessert cups. Serve with whipped cream or ice cream and sprinkle with cinnamon. Makes 12 servings.

Emma Jean Bowerman, Lake Isabella

Delightful Tomato Pudding

1 10-oz. can tomato puree
1/4 c. boiling water
6 T. light brown sugar
1/4 t. salt

1 c. fresh white bread cut in 1-inch cubes (no crusts)
1/4 c. unsalted sweet butter, melted
Stir water and puree together in small saucepan and add sugar and salt, boil 5 minutes. Place bread cubes in casserole (or fancy 2-inch high round, fluted pie dish) and pour melted butter over them. Add the tomato mixture. Bake covered for 30 minutes at 375°. Great accompanying any meat dish.

Patricia Coyle, Watervliet

Easy-To-Make Custard

6 eggs
1/2 c. sugar
1/2 t. salt
1/2 t. vanilla
4 c. milk
nutmeg

Beat eggs, sugar, salt and vanilla. Heat milk to the boiling point and stir into egg mixture. Pour into a 2-quart Pyrex® baking bowl. Sprinkle with nutmeg. Set the bowl into a pan with about 1 inch of water. Bake at 325° for 60 to 75 minutes. To test for doneness,

insert a knife into the center of the custard. If it comes out clean, it's done. Cool and store in refrigerator.

Mary Ellen Wynes, Mt. Pleasant

Fruit Trifle

2 3.5-oz. pkgs. vanilla pudding
1 angel food cake
1 generous T. rum (optional)
1 20-oz. can cherry pie filling
1 15-oz. can peaches, drained
1 small can mandarin orange segments, drained
2 bananas
1 pint whipped cream
fresh kiwi, strawberries, blueberries, raspberries, as desired

Make pudding according to box directions. Cut angel food cake into 1-inch pieces. In a glass bowl, layer cake, pudding, sprinkle with rum, alternate fruits. Repeat cake, pudding, fruit until gone. Top with whipped cream and fresh fruit.

Doreen Lawrence, St. Clair Shores

Grandma's Rice Pudding

1/2 c. uncooked rice
2 c. milk
1/2 c. sugar
2 eggs, beaten
1 t. vanilla
1/2 c. raisins

Cook rice with 1½ cups water in a double boiler until the water is almost absorbed. Add milk and sugar and continue to cook in double boiler for 20 more minutes. Add eggs, vanilla and raisins (if desired). Continue cooking until almost as thick as you want the pudding to be. It will thicken slightly as it cools.

Mary Ellen Wynes, Mt. Pleasant

Tapioca Pudding

3 T. tapioca pearls (not instant)
5 T. sugar, divided
1 egg, divided
½ t. salt
2 c. 2% milk
3/4 t. vanilla

Soak tapioca pearls overnight, or 2-4 hours, in 3 cups water. Drain. In large pot, add

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pearls to 3 tablespoons sugar, egg yolk, salt and milk and heat to full boil, stirring constantly until pearls are clear and soft, about 30 minutes. In mixing bowl, mix egg white and 2 tablespoons sugar until foamy and soft peaks form. Mix this into the tapioca mixture with vanilla. Serve warm or chilled. For an extra-creamy pudding, add 8 ounces Cool Whip®. Serve with strawberries, if desired.

Laura Erickson, Calumet

Grape Nuts Custard

1/4 c. butter, melted
1 1/4 c. Grape Nuts®
3 eggs
1/2 c. sugar
3 c. milk
1/2 t. nutmeg
1/2 t. salt
1 t. vanilla
1 c. raisins

Mix melted butter and Grape Nuts. Beat eggs and add sugar; add to butter and Grape Nuts mixture. Stir in remaining ingredients and blend well. Pour into a 2-quart baking dish and set in oven in a pan of hot water. Bake for about 1 hour at 375°, or until knife inserted in center comes out clean. Stir cus-

tard several times during first 30 minutes of baking. Makes about 6 servings.

Paula Brousseau, Bellaire

Rhubarb Custard Pie

4 c. rhubarb, cut in 1/2-inch slices
1 1/2 c. sugar
3 T. flour
1/2 t. nutmeg
1 T. butter at room temperature
2 eggs, well beaten
1 9-inch pie crust, unbaked

Mix butter and sugar until creamy; blend in flour and nutmeg, then eggs. Set aside. Place rhubarb into pie crust. Pour mixture evenly over rhubarb. Bake for 10 minutes at 450° then drop temperature to 350° and continue baking for 30 minutes or until lightly browned. Serve cold or at room temperature. Enjoy plain or with whipped topping or ice cream.

Karen Richards, Wayland

Lemon Pudding Dessert

1 c. cold butter or margarine
3 c. cold milk
2 c. all-purpose flour
2 3.4-oz. pkgs. instant lemon pudding mix

1 8-oz. pkg. cream cheese, softened
1 c. confectioner's sugar
1 8-oz. carton frozen whipped topping, thawed, divided

In a bowl, cut butter into flour until crumbly; press into an ungreased 13x9x2-inch baking pan. Bake at 350° for 18–22 minutes, or until set; cool on a wire rack. Beat cream cheese and sugar in a mixing bowl until smooth; fold in 1 cup whipped topping and spread over crust. Beat milk and pudding mix in a mixing bowl on low speed for 2 minutes; carefully spread over the cream cheese layer. Top with remaining whipped topping. Refrigerate for at least 1 hour. Makes 12–16 servings.

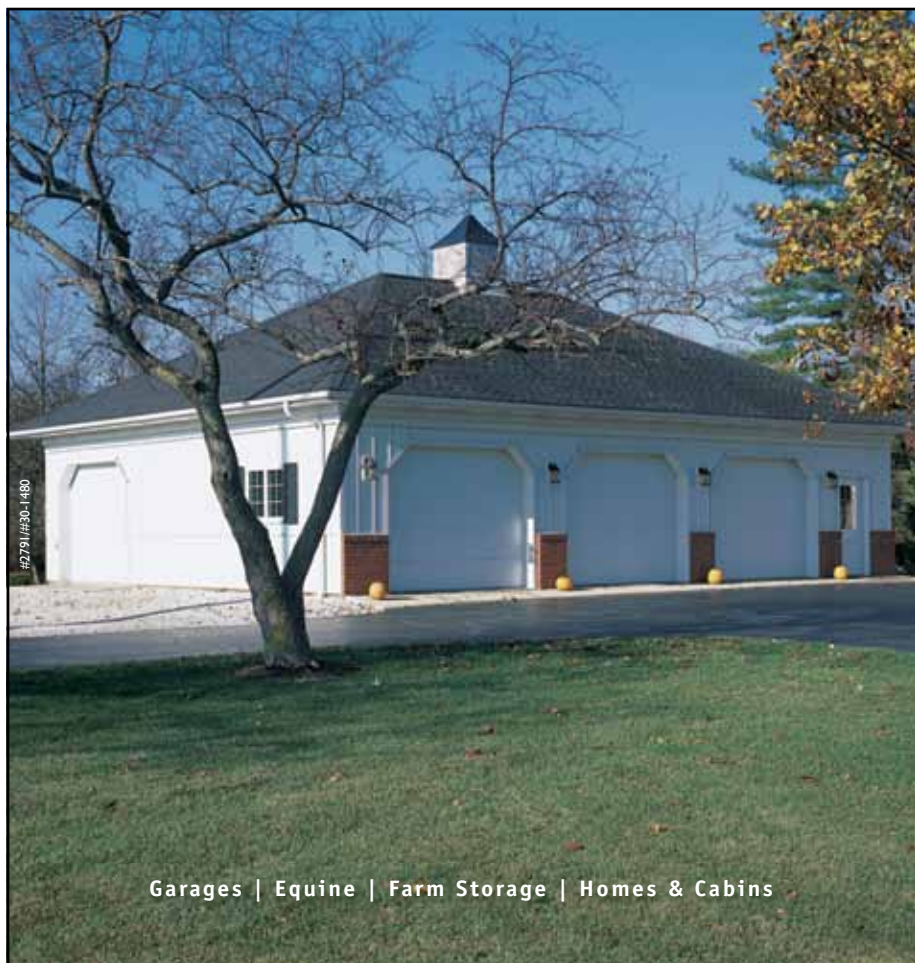
Kathryn Snell, Montague

Just Like Orange Push-Up Salad

1 3-oz. pkg. vanilla pudding, (not instant)
1 3-oz. pkg. tapioca pudding, (not instant)
1 3-oz. pkg. orange Jell-O®
1 11-oz. can mandarin oranges, drained
10 oz. Cool Whip®

Mix the dry pudding and Jell-O mixes with 3 cups water and cook until thick. Remove from heat; stir in oranges and Cool Whip. Refrigerate.

Barbara Palzewicz, Daggett



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Eating Healthy

on the cheap

So many of us in Michigan are tightening our belts, trying to save money. Sticker shock is a common feeling, as most of our favorite foods have risen as much as 12 percent in the last year. But the good news is you don't have to live on just beans and rice. With a little planning and effort, you can save on your grocery bill and not sacrifice taste or nutrition.

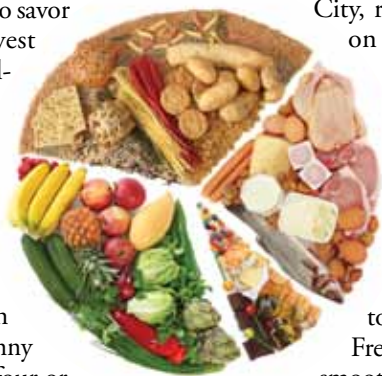
A Feast for the Eyes

October is the perfect time to savor Michigan's bountiful harvest without emptying your wallet. "Buy fruit that is in season, like apples, right now. You can buy in bulk since they don't go bad," says Silvia Veri, RD, nutrition supervisor at Beaumont Weight Control Center in Royal Oak. Northern spy, winesap, Rome and Granny Smith can be stored up to four or five months." Seasonal vegetables are less expensive, like squash for the fall and winter months," adds Veri.

Try roasting veggies such as potatoes, beets, sweet potatoes and squash for a hearty side dish. Cook cauliflower to make "mashed potatoes" or try sweet potato baked fries for an alternative to standard potato dishes. Visit localharvest.org to find a farmer's market or CSA (Community Shared Agriculture) farm near you.

Supermarket Sweep

Shopping the perimeter of your grocery store is your best bet, provided you can close your eyes while cruising by the bakery. In the fruit section, Connie Metcalf, RD CDE, at Munson Diabetes Education in Traverse City, recommends stocking up on bananas. "Add bananas



Whole grain pasta and brown rice are inexpensive too, with significant sources of fiber.

to any whole grain cereal. Freeze in chunks and add to smoothies." Buy grapes on sale and freeze them for a refreshing treat. Pre-packaged, cut-up fruits and veggies are almost always more expensive. Buy whole fruits and veggies, spend a little time cutting and slicing, and you'll have fast and accessible snacks at the ready.

The dairy case is filled with high protein, low-budget options. "Buy low-fat varieties of cottage cheese, yogurt and cheese in large tubs versus individual packs. Also, a block of cheese versus individually wrapped," sug-

gests Veri. Place yogurt and cottage cheese in individual containers for brown bag lunches and enjoy even more savings. Don't forget the always-budget-friendly egg. Veri recommends enjoying them in omelets, hard-boiled, scrambled or poached.

The cost of meat adds up fast on your grocery tab, so embrace a "Meatless Monday"! Metcalf suggests beans, which have protein and are rich in fiber. Cozy up with a hearty bowl of bean soup with in-season veggies.

Whole grain pasta and brown rice are inexpensive too, with significant sources of fiber. Fiber is a bonus because it fills you up and takes longer for your body to process, and is excellent for colon health. Whole-grain varieties have more fiber and the pasta is another nice source of protein. Add some veggies and/or chicken to create a one-dish meal.

It's Hip To Clip

To save even more, try couponing. The sluggish economy has made it "hip to clip" again. Coupons can be found in the Sunday paper and online at mycoupons.com or KrazyKouponlady.com. Simply print-and-clip to save! While healthier food options aren't as plentiful from the newspaper coupons, there are still ways to save on healthy food. Visit your favorite brand or health food store website—most have printable coupons available when you sign up for their newsletter (set up a separate email account so your regular email doesn't get flooded with junk mail). And, if you have a texting package on your cell phone, consider signing

up for text alerts for special savings from your favorite store.

"Read the food ads for sales. Choose local, in-season foods, and look for generics. Use coupons and shop from a list and stick to it," adds Metcalf.

Lisa Marie Metzler is a freelance writer and certified personal trainer. She is a monthly contributor for Healthy and Fit Magazine and her other credits include Women's Health and Fitness, Positive Thinking, and MetroParent.



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Glass-Block Windows Are Safe, Efficient Option

If you're concerned about security and energy efficiency at your home, you might consider replacing some of your old, inefficient windows with glass- and plastic-block units. Today's options offer a stylish alternative that any home improvement do-it-yourselfer can install.

Security

Safety and security is of particular concern on first-floor and basement windows where a would-be thief could quietly pry open or break a standard window. While it is possible for an intruder to break through a glass-block window, it would be very difficult, take quite a bit of time, and create a lot of noise. Most glass-block windows are hollow and a single block could be broken through, but the opening would not be big enough to crawl through. Solid, high-security glass blocks are also available, but they are very heavy and more difficult to install yourself.

In addition to security against break-ins from thieves, protection from severe weather is also a concern. Some standard pane-glass windows can withstand the force of the wind during a violent storm, but damage from flying debris often does much of the damage and can easily break through most pane glass. Block windows can withstand much more force.

Plastic-block windows are also available and look identical to true glass blocks. Most are molded from acrylic plastic, which is much more impact-resistant than standard double-pane glass windows. Acrylic plastics are often used for windows, such as block and storm windows, because sun exposure does not cause them to yellow, as may happen with other plastics.

Efficiency

Glass-block windows are an excellent, energy-efficient alternative because there is an insulating air gap sealed inside each block. This is particularly effective because the two glass halves are fused together under heat. When the glass blocks cool, the insulating vacuum is created inside the block.

Special coatings can be used to increase

efficiency. Most glass- and plastic-block windows use a low-E (low-emissivity) coating. Some Hy-Lite® acrylic plastic blocks have an efficient low-emissivity coating on a third pane inside the block, providing an R-3 insulating value. This can be combined with a tinted block for summer heat rejection of solar heat gain coefficient (SHGC) of 0.27, plus winter heat savings.

Another reason block windows are efficient is they are very airtight and remain that way throughout their life. There is very little, if any, air infiltration when the blocks are assembled properly in mortar or clear silicone. When installing a completed block panel, make sure to caulk well around the frame perimeter.

Do It Yourself

It's not difficult to install block windows yourself, but there is quite a learning curve to installing individual blocks. If you are a less-experienced do-it-yourselfer, select preassembled panels that can be installed similarly to any replacement window. Some of the strongest glass block panels, which meet International Building Code and hurricane impact tests, are framed by 2x6 pressure-treated lumber.

Glass block panels, such as from Pittsburgh Corning®, are available in 60 sizes and three patterns. Some minor framing of the rough opening is required to fit the panel. Plastic blocks, such as from Hy-Lite, can be customized to fit your existing window opening.

Do-it-yourself kits for installing individual blocks are also available. Corner spacers are used to properly position the blocks. When

the mortar sets up, the spacer ends are broken off and covered with more mortar. Kits for using clear silicone instead of mortar are also available for a more seamless appearance.

Send inquiries to James Dulley, Michigan Country Lines magazine, 6906 Royalgreen Dr., Cincinnati, OH 45244 or visit dulley.com.

James Dulley is a nationally recognized mechanical engineer writing about home energy issues for the National Rural Electric Cooperative Association.



Glass- and Plastic-block Window Resources

- Builders Accessories, 888-921-7086, acrylicblock.com
- Circle Redmont, 800-358-3888, circleredmont.com
- Glashaus, 815-356-8440, glashaus.com
- Hy-Lite Products, 888-256-2599, hy-lite.com
- Pacific Accent, 888-522-4527, pacificaccent.com
- Pittsburgh Corning, 800-624-2120, pittsburghcorning.com

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It Pays To Help Your Co-op Save

Buying a new appliance can be an overwhelming task. Which brand is best? What features do I need? What will this do to my energy bills?

When it comes to your next water heater purchase, Midwest Energy Cooperative wants to take the confusion out of your hands.

We are pleased to offer a program that will put a high efficiency water heater in your home with only \$100 out of your pocket. Comparable units are \$400 or more at most retail stores.

Co-op members who are homeowners and use a minimum of 400 kilowatt hours a month can now buy this high-efficiency water heater for only \$100 when they participate in our load management program. Load management allows us to remotely control the electricity to your water heater. As a utility, we have periods of peak use during which customers are using a lot of power at the same time. Because the charges from our power suppliers are based on monthly peak demand, all co-op members benefit when we can reduce peak use. We pass those savings back to those participating in the load

management program through a credit on their electric bills.

With this program, your water heater load management credit will be applied to the cost of your water heater for 66 months. After that time, you will receive the full monthly credit under the load management program terms. The monthly credit is \$4 for a 50-gallon unit and \$8 for an 80-gallon unit. In the end, you pay only \$100 for a brand new high-efficiency water heater and begin pocketing a load management credit after 66 short months.

Water heater control does not exceed 5 hours daily and occurs mostly between the hours of 3 p.m. and 8 p.m., when demand on the system peaks. The hot water stored within your insulated tank will remain hot for a long time.

Water heaters are available for pickup from 8 a.m. to 5 p.m. in the Cassopolis and Adrian offices, and 8 a.m.–1 p.m. and 1:30–4 p.m. in the Paw Paw office. For more details or to see if you qualify, please call 800-492-5989 or visit one of our offices.

\$50 HVAC Rebate!

The water heater load management offer (left) combined with Midwest Energy Cooperative's Energy Optimization HVAC program could put a new water heater in your home for only \$50!

This program encourages residential members to install energy-efficient heating, cooling and water heating equipment. Co-op members are eligible for a \$50 rebate in the form of a bill credit when they replace an existing electric water heater with a high-efficiency (.93 or greater) electric water heater. Members must live in a single family dwelling in Michigan.

To get the rebate (equipment bought on or after Jan. 1, 2011), members must submit an incentive claim form (available at TeamMidwest.com or call 800-492-5989) and attach all required documents. Rebates are subject to change and availability.

Ask Propane Suppliers the Right Questions

When comparing prices among propane suppliers, it is important to ask the right questions in order to get the information you need to make informed decisions. At Midwest Propane we value our family of customers, and prospective customers. We want to provide you with as much information and as many tools as we can to help you make educated decisions about your propane partner.

It's not uncommon for a propane company to establish and promote a rate that seems very attractive, but then tack on various fees. Unfortunately, many customers only look at the promoted rate and aren't aware of the added fees until the first bill arrives.

When you are shopping for a propane partner, don't just look for the lowest price. Ask about other fees and how they impact your price-per-gallon. Midwest Propane makes available a free tool to help you know what questions to ask. Click on the "Midwest Propane" icon at TeamMidwest.com, or call our Customer Care Center at 800-492-5989 for your copy. By asking the important ques-

tions and tracking answers by provider, you will better understand how much you will *really* pay for service and be able to make the best decision for your own unique situation.

Among the questions to ask:

- What is your current price-per-gallon?
- Is this your regular price, or is it a special price for new customers?
- Is there a delivery fee or other charges?
- Do you offer a price protection program, and how much does it cost?
- Do you offer an auto-fill program?
- Do you offer a "no run-out" guarantee?

● What kind of program and payment options are available?

● Are your employees trained and certified?

● Will I be able to reach the company during evening and weekend hours if I have an emergency?

Things are not always as they seem

The following chart, based on the current pricing of some of our competitors, shows how added fees impact the actual price you pay per gallon. Costs are based on three deliveries of 200 gallons each, which represents annual average usage.

	Capped Rate	Lock-in Fee	Hazmat Fee	Delivery Fee	Total per gallon	Cost BEFORE added fees	Cost AFTER added fees
Provider A	\$2.20	\$49.99	\$0	\$17.84	\$2.37	\$1,320	\$1,423.51
Provider B	\$2.15	\$59.95	\$5	\$4.98	\$2.30	\$1,290	\$1,379.89
Provider C	\$2.24	\$49.95	\$0	\$0	\$2.32	\$1,344	\$1,393.95
Provider D	\$2.20	\$49.95	\$0	\$7.50	\$2.32	\$1,320	\$1,392.45
Midwest Propane	\$2.24	\$0	\$0	0	\$2.24	\$1,344	\$1,344.00

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MISCELLANEOUS

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GRAYLING ADULT FOSTER CARE HOME – Six private rooms. 231-649-6842.

BREVOORT LAKE, UPPER PENINSULA – 3-bedroom, 1-bath cottage. Stone fireplace, deck, storage shed, on 100' x 740' lot. 906-293-8770.

159 ACRES, MARQUETTE COUNTY – Very private, large cabin, great deer area, trout stream runs through property. Watch video under real estate at carvingsbyellen.com. 231-730-5053.

FOR RENT: TWO-BEDROOM HOUSE – Lots of closets, large utility room and gameroom. Walking distance to park and fishing. Atlanta, the elk capital of Michigan. 989-785-4110.

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BUYING GUN RELOADING EQUIPMENT – Gun smithing, gun parts and related items. 517-623-0416.

WANTED: DOODLE BUG TRACTORS – Also 1935 to 1957 Ford, Chevy, Dodge/Plymouth cars and trucks. 231-652-6421, leave message.

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Seal Cracks to Save Energy, Money

Finding and sealing air leaks is an important step in weatherizing your home, and will help keep you cooler in summer and warmer in winter. It's an easy do-it-yourself project that reduces air infiltration and helps eliminate wasted energy.

The best way to identify air leak sources is to wait for a windy day and then carefully hold a lit incense stick or smoke pen next to your windows, doors, electrical outlets and other spots where outside air may infiltrate. If the smoke stream moves horizontally, you've found a leak that needs to be sealed.

Experts recommend using waterproof, flexible, long-lasting silicone caulk to seal cracks and gaps that are less than one-quarter-inch wide. Remove any old caulk and clean the surface before applying new caulk.

Fresh caulk takes several hours, or longer, to dry, so it's best to do the job on a dry day when humidity is relatively low and the temperature is above 45 degrees F. In addition to caulk, you can use low-expansion spray foam to seal leaks.

For other tips on how to save energy visit energysavers.gov or TogetherWeSave.com.



Weatherization Works! Managing your home energy use doesn't have to break the bank. Maintaining a comfortable, energy-efficient home can be as simple as identifying wasted energy and making easy, inexpensive changes.

Midwest Energy will host "Weatherization Works" seminars in November to share simple, inexpensive ways you can manage your home energy use. Professional energy auditors will explain how to identify wasted energy and make your home more efficient. The seminars are free and open to the public. For more information, please see the back cover of this month's magazine.

Don't Let Electrical Hazards Haunt Halloween!

Halloween is the most festively frightening night of the year. But don't make yours fraught with danger. Here are some safety reminders:

► As you're decorating, check for cracked sockets, frayed, loose or bare wires, and loose connections.

► Fasten all outdoor lights securely to trees and other firm supports. Do not use nails or tacks that could puncture insulating cords and damage wires.

► Make sure decorative lighting is well-ventilated, protected from weather, and remains a safe distance from anything

flammable like dry leaves and shrubs. Do not coil extension cords while in use or tuck under rugs or drapes.

► Make sure all outdoor electrical lights and decorations are plugged into an outlet protected with a ground fault circuit interrupter (GFCI). If your outlets aren't equipped with GFCIs, have an electrician install them or buy a GFCI adapter plug. Don't overload outlets with too many extension cords and strands of lights.

► Keep power cords off walkways and porches that trick-or-treaters may use to help prevent a fall.

► Leave the porch light on for trick-or-treaters, and be sure to turn out all spooky lights and decorations before leaving home or going to bed. This will also save energy.

For more tips visit SafeElectricity.org.

Source: Electric Consumer

Don't Miss the Deals!

In August, the Midwest Energy family of customers saved over \$3,600 on pharmacy costs using their Co-op Connections® cards. Since rolling the program out in March, our customers have saved well over \$18,000 with this great discount card program, offered free through your electric co-op.

By using your Co-op Connections Card, you receive 10 to 60 percent discounts on prescription drugs at over 60,000 pharmacy chain stores—including CVS, Walgreens, Wal-Mart, Target and many more. The program is simple and free to use. Log-on to TeamMidwest.com and click on the card image. This will direct you to an informational page with a link to a database of thousands of national, regional and local discounts—including the pharmacy program—that have been established by other member-owned electric co-ops.

Midwest staff members continue to work with businesses across our service territory to develop local deals for your benefit. We will publish these in the magazine as they join, and will also promote new deals on our

website. Check back often.

This month we're proud to welcome Porky's Party Place in Cassopolis to our Co-op Connections Family. Just show your card when you visit Porky's and you will receive \$1 off a 14-inch combo pizza.

If you are a business owner and would like to be part of this program, contact us at pr@teammidwest.com and a team member will contact you with details.

Other local deals include:

- Adrian Locksmith & Cyclery, 5% off any purchase
- Clipper Creations Pet Salon (Cassopolis), 10% off all grooming
- Cranky Hanks LLC (Dowagiac), 10% off all fishing tackle
- Discover Peters Travel (Cassopolis), Various discounts including upgrades and on-board credits
- Farm House Bakery & Restaurant (Vandalia), 10% off dining and retail



- Just Hair (Cassopolis), \$5 off any chemical treatment
- Lipstick Jungle Spa (Niles), 10% off any spa service (not valid with other offers or promotions or on soirees)
- MenialTasks LLC (Adrian), 10% discount on all offered services
- Porky's Party Place (Cassopolis), \$1 off a 14-inch combo pizza
- Sieler's Water Systems (Adrian), 5% discount
- Squeeze (Niles), 50 cents off any smoothie or food item
- Village Floral LLC (Cassopolis), 25% off any regular priced cash-and-carry purchase

Plumbing Contractors Meet Co-op Quality Standards

Choosing qualified and reputable contractors can be difficult. As a service to our members, we have compiled a list of Midwest Energy Cooperative Preferred Plumbing Contractors. As part of the qualification process, we researched, interviewed and checked references on a regional pool of contractors and included on our final list only those that we feel confident will provide the level of service that you have come to know and expect from your co-op.

Please contact any of these contractors with confidence if you are interested in more information about their services.

Southwest Michigan Territory:

Advantage Plumbing Inc.

2400 North 5th Street
Niles, MI 49120
269-687-7192

Aqua Plumbing Services

4508 E. Milham
Portage, MI 49002
269-720-1364 or 269-903-AQUA (2782)

City Plumbing & Heating

407 State Street
St. Joseph, MI 49085
269-983-6595

Southeast Michigan Territory:

Heritage Plumbing & Heating

3286 North Adrian Highway
Adrian, MI 49221
517-263-4300

Shoemaker Heating & Plumbing

5310 US Hwy 223
Palmyra, MI 49268
517-263-9940

Whitcher Plumbing & Heating

1500 W. Maumee Street
Adrian, MI 49221
517-265-1389

Meter Tampering Is Illegal

Meter tampering is not only a personal safety issue, it is an unacceptable practice that will result in discontinuation of service and possible criminal prosecution.

It is the co-op member's responsibility to use reasonable diligence to protect the co-op's facilities located on the member's premises, and to prevent tampering or interference with such equipment.

If the meter or wiring is tampered with or altered in any manner that results in theft of power, the co-op may discontinue service. In order for service to be restored, the member must agree to pay for the energy used, all costs of discovery and investigation (including rewards for discovery), and make provisions and pay charges for an outdoor meter installation or other metering changes as may be required.

If you suspect anyone of meter tampering and/or theft of power, please call Midwest Energy immediately at 800-492-5989.



A Good Night's Sleep

A person who should know tells me I snore.

So, I bought a special pillow that looks like the rolling hills of Appalachia. It gently forces your head and body into a position that lessens the likelihood of snoring. It seems to work.

Then I told my doctor during my annual physical that I sometimes felt tired during the day, so he scheduled me for a sleep study to see if I'm getting enough deep, uninterrupted sleep.

The day after my physical I noticed that my heartbeat was irregular. I was getting dizzy while I was working in the yard, carrying and laying bricks.

Barbara drove me to the local urgent care facility in Mason, where the nurses confirmed my heart beat was irregular and hooked me up to a heart monitor. They called an ambulance to carry me to Sparrow Hospital in Lansing. (Remember my column about the bad shape of our roads? That ambulance ride confirmed it.)

I had recognized the symptoms of atrial fibrillation because I had them twice before, the last time 11 years ago. For some people the problem, also called Afib, is more persistent. Afib is characterized by rapid, erratic beating of the heart's upper chambers. Roughly 1 percent of the population has the condition, which affects all ages but becomes more common and dangerous as we grow older.

After I was assigned a room, I told my story to the aide who wheeled me to my room, the nurse on duty, and the technician who hooked me up to an IV drip. The next morning, very early and after not sleeping, I repeated my story to the resident physician and an intern, a team of doctors from the MSU Health Clinic where my personal doctor practices, the new shift nurse, the chief of staff and her assistant, and finally to a heart specialist on atrial fibrillation. That's another nine stories.

Hospitals should give patients one of those recordable greeting cards so they can record their answers to the common question: What brought you here? Then everyone would get the same answer



Self-portrait: A sleep study requires a lot of wires and sticky connections.

while the patient rests.

I was given medication to bring down my heart rate. My heart converted to a normal rhythm during the second night of my stay. I know this because I was still awake at 4 a.m. when the nurse told me. After I passed a heart stress test, I was released to my wife's care.

(I thought about the old joke about the wife who finds out from the doctor that her husband's going to need a lot of ten-

der, loving care from her if he is going to survive. When the husband asks her what the doctor said, she says, "You're going to die." It's one of my favorite jokes, but it's not fair to Barbara, who is always watching out for me.)

I was lucky. Treatment for me is simply one full-strength aspirin daily, to prevent the possibility of stroke resulting from blood clots traveling from the heart to the brain, which is the biggest danger with this condition. The new treatment for cases of long-standing, persistent atrial fibrillation involves using small bursts of electricity to destroy the patches of heart tissue that generate the erratic 'beat now' signals.

After two nights in a hospital I was more tired than ever.

The next week, I kept my appointment for the sleep study, during which I hardly slept. Just look at the picture and you'll see why.

We're said to be a nation of sleep-deprived zombies, and these studies do help people. They identify problems with snoring, sleep apnea and lack of oxygen. If you have a severe problem, there are solutions that work, including devices that help you breathe more freely at night, reducing the number of times you wake up gasping for breath.

And bad sleep can trigger Afib, which is why it was important for me to go through the study. Still, I'm not looking forward to repeating it, which is what the doctor wants me to do since my first try didn't involve any real sleep.

Everyone I met during these episodes are incredibly caring people. I was impressed with the level of care and professionalism of everyone from doctors to nurses to staff. I don't want to seem ungrateful, but as much as I appreciate what they do, I don't want to see them again anytime soon. I can only afford to lose so much sleep, and hospitals and sleep study 'bedrooms' are not the places to catch up.

Symptoms of atrial fibrillation

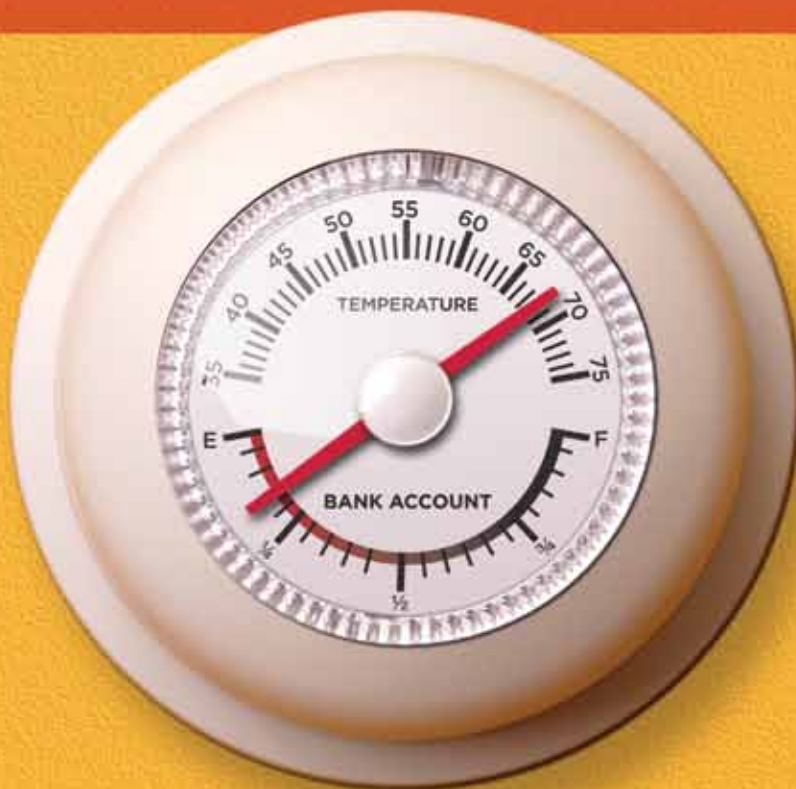
Afib is just a nuisance for some people, but for others it is a significant risk. Not everyone who develops Afib experiences symptoms, and for those who do, the following symptoms can range from mild to severe:

- Fatigue
- Palpitations (irregular, rapid or pounding sensation in the neck or chest)
- Shortness of breath
- Lightheadedness
- Dizziness
- Chest pain/discomfort
- Inability to concentrate

Source: John Hopkins Hospital Health Alerts

Mike Buda is editor emeritus of *Country Lines*. Email Mike at mbuda@countrylines.com or comment on his columns at countrylines.com/column/ramblings





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Dowagiac

Please RSVP to Lori at
269-445-1139 or online at
TeamMidwest.com

Thursday, Nov. 10, 2011

6 - 8 p.m.

Van Buren County ISD
Conference Center
490 S. Paw Paw St.
Lawrence

Please RSVP to Lori at
269-445-1139 or online at
TeamMidwest.com

Saturday, Nov. 12, 2011

9:30 - 11:30 a.m.

The Centre
1800 W. US 223
Adrian

Please RSVP to Patty at
517-266-4602 or online at
TeamMidwest.com



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