April 2018 Share Package
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Give Your Old Water Heater an Efficiency Boost

Top, wrap your old electric water heater with fiberglass insulation, then with construction foil, to block heat loss.

Above, drain about a gallon of water from the bottom of the water heater tank every several months to reduce sediment buildup.

Photos by James Dulley

To ask a question, write to **James Dulley**, Energy Report, 6906 Royalgreen Dr., Cincinnati, OH. 45244, or go to **www.dulley.com**.

Q: *My electric water heater is 18 years old, but still works. What can I do to make it more efficient and reduce heating costs?*

A: For a typical family of four, it is not unusual for water heating to consume 20 to 25 percent of the total annual energy use. New water heaters are more energy efficient than old ones, but many homeowners cannot afford to replace an older, less efficient one.

Electric water heaters are simple devices. There are two electric resistance heating elements in the water tank: one at the top and one at the bottom. They are not on at the same time because that would draw too much electric current. The bottom element keeps the tank water hot. When hot water runs low, the top element comes on to supply hot water faster.

Electric water heaters, even old ones, have nearly 100-percent heating efficiency. All the electricity used ends up heating water because the heating elements are submerged. The difference in the overall efficiency and your water heating costs are determined by how much heat is lost from the water tank.

In old water heater tanks, the lower heating element must come on fairly often just to make up the heat lost through the insulation to the surrounding air. The most energy-efficient electric water heaters have several inches of high R-value insulating foam between the water tank and the outer skin. Older tanks may have just a couple of inches of fiberglass insulation.

Increase efficiency by adding tank insulation. Test your water heater tank to see if it needs more insulation. Place your hand on other metal objects in your basement or utility room to get a sense for their temperature. Next, put your hand on the water heater tank near the top. I bet your old water heater will feel much warmer because it is losing heat.

Water heater insulating jackets are available at most home center stores. These wrap around the tank and cover the top. R-13 fiberglass batt wall insulation also works well. Face the vapor barrier to the outside and cover this with construction foil to create a low-emissivity barrier.

When insulating a gas water heater, do not block the combustion air inlet at the bottom and the draft diverter at the top.

Older water heaters may not have heat trap fittings in the inlet and outlet pipes as new water heaters do. Because hot water is less dense than cold water, it naturally circulates up into the section of the pipes above the water heater. This hot water loses heat and drops back down. This continuous convection current wastes energy.

Put tubular foam insulation over the pipes immediately above the tank to minimize heat loss. You can also have heat trap fittings installed in your old tank to stop this.

Drain a gallon of water from the valve at the bottom of the tank every several months. If you have not done it before, you may see a lot of sediment come out.

Check the temperature of the hot water at the kitchen faucet with a thermometer. A temperature of 110 to 120 F is adequate.

You will find two covers on the side of the water heater over the heating elements and thermostats. Switch off the circuit breaker and adjust the thermostats. Switch the power back on and let the temperature stabilize.

Install a water heater timer to switch it off during the daytime when away working. The water will stay reasonably hot. Set the timer to come back on late at night. This helps your electric utility control peak demand. Ask your utility if it offers an incentive program for them to install a water heater they can control during peak times.

If you decide to buy a new electric water heater, select a model with a 12-year warranty. These have higher R-value foam insulation in the tank walls than cheaper 6-year models. Most 12-year models have accurate electronic digital controls and a vacation-mode to help save electricity when you are away. ■

Play It Cool This Summer

Ceiling fans—indoors or on porches—provide air movement to cool anyone below.

Photo courtesy of Werner Ladder Co.

Since most solar gain enters through your home's windows, awnings and shade trees are effective ways to cool your home during summer months.

Photo by David Sawyer

To ask a question, send an email to **Patrick Keegan** at energytips@collaborativeefficiency.com.

Q: My energy bill was pretty high last summer. How can I keep comfortable without breaking the bank?

A: There are several ways to make your home more comfortable this summer. Some solutions are low cost, while others require a bigger investment.

The first step is to reduce your home's solar gains—the heat energy it collects from the sun. Since most solar gains originate through your home's windows, awnings are an effective solution. They reduce solar heat gain by as much as 65 percent on south-facing windows and 77 percent on west-facing windows.

Less expensive solutions on your windows include reflective films and solar screens. Heavy window coverings also work and have the added benefit of reducing heat loss in winter.

Two major sources of heat gain are skylights and attics. Reflective film or specially designed window coverings are potential solutions for skylights. Attics can become extremely hot and radiate heat through the ceiling into your living space. Abundant venting through the roof, gable or eaves helps, but you also need adequate attic insulation.

Another important step is to seal air leaks around windows, doors, plumbing and wiring penetrations to keep warm air out and cool air in.

Excess heat can also be generated inside your home. There are simple steps you can take to reduce heat generation and lower your electric use:

- Make it a habit to turn off lights and TVs in rooms not in use.
- Incandescent lightbulbs generate a lot of heat. Replace them with LEDs.
- Unplug devices you are not using, such as chargers, computers, monitors and consumer electronics. Many of these use phantom power, which keeps them on constantly.
- Maintain appliances for peak efficiency. For example, clean your refrigerator coils.
- Lower your water heater temperature to no higher than 120 degrees and your refrigerator to no lower than 38 degrees. Consider insulating your hot water pipes.
- Minimize use of your oven.
- Don't run the dishwasher or washing machine until they are full.

If you have central air conditioning, make sure it is working efficiently. Replace the filters regularly and check to see if your supply registers are open. AC systems must push an adequate amount of air into the supply ductwork to function properly.

If you do not have central AC, window units can be an efficient solution if they are Energy Star-certified and only used to cool part of the home, part of the time. Make sure to seal any openings around window units.

The least expensive way to cool yourself is air movement. A ceiling fan or portable fan can make a room feel up to 10 degrees cooler. Remember, fans cool people—not air. Turn them off when you are not in the room.

If you live in an area where the night air is cool and not too humid, you can exchange your hot air for cool outdoor air by opening the windows and turning on your kitchen and bath fans. You also can place a fan in one window to exhaust the warm air and open another window at the opposite end of the house to allow the cooler night air inside. The permanent—but more expensive—option is to install a whole-house fan.

Remember, there are several ways to keep cool and increase comfort. I hope these tips make your summer more enjoyable than the last. ■

This column was co-written by Pat Keegan and Brad Thiessen of Collaborative Efficiency. For more information on energy efficiency, visit www.collaborativeefficiency.com/energytips.

The Hardest Job I've Ever Loved

Years of training, dedication and a safety-first mindset are key traits of lineworkers

Moving to Northeast Oregon in 1988, I found myself with a bachelor's degree in music, but working at a local bank. Less than a year later, a job opportunity came up at the area's newly formed electric cooperative.

I submitted my application. Outside of signing up for electric service and knowing how to check my electrical breakers, I knew nothing about the electric utility business. I started as a clerk in the office, learning the ins and outs of the business from working with our members' accounts, taking outage and trouble calls and relaying information to linemen in the field.

Further opportunities came my way a couple years later as a meter reader/collector and then as a storekeeper. As storekeeper, I worked directly with the line crews to order and supply materials they needed for their jobs. When they needed an extra hand on a crew, I was able to work directly on the job with them. I began to wonder if linework was something I could do.

The idea of working out in the field all over our service territory really appealed to me. After five years as a storekeeper—which I really enjoyed—the co-op offered two lineworker apprenticeships. I decided this was an opportunity I could not pass up. I talked with the linemen I worked with and asked for their advice. With borrowed boots, tool belt and hooks, two foremen had me climb part way up a pole, drill a hole, hang a cross arm and reach out to hang insulators. After seeing me complete the task, and knowing me well enough, they said I could do the job.

This job is very physical for everyone. When you are a small woman, it can be even harder.

My journey had begun, as did the feeling of constantly being under a microscope. Many believed in and supported me, but there were many skeptics along the way.

I had to move to La Grande for the apprenticeship and to work with new crews. Traveling 120 miles each way every other Saturday for class throughout the three-year period was another part of that commitment.

Linework is dangerous, which is why it requires so much training, knowledge and commitment. High voltage, heights and inclement weather are just some of the challenges of the job. You are also a truck driver, equipment operator, flagger, troubleshooter, tree trimmer and emergency responder.

The variety the job offers was appealing to me. We built line extensions to dream homes and went to the tops of mountains with spectacular views. Of course, there was always the cat to rescue from the top of a pole or the baby osprey the Department of Fish and Wildlife asked me to return to its nest after it had fallen out.

One of the most important traits I believe a lineworker needs is a strong personality, and the self-confidence to speak up in any situation. Safety must be the No. 1 priority. The most important role on a line crew is the safety watch. This means there is a lineworker whose sole responsibility is to watch the crew when they are working near the lines. So when you see a line crew working and one lineman doesn't appear to be doing anything, they are not being lazy, but watching for any hazards the crew may encounter.

Due to unplanned outages and trouble calls, lineworkers have to figure things out as they go and don't have planned work zones set up. It is much appreciated when drivers slow down and stay clear of working crews. Access to our infrastructure is something everyone can help with. That includes not planting or placing anything that infringes on our access.

Notes and calls thanking lineworkers for restoring outages are always appreciated. Answering the phone at 3 a.m. when the wind is blowing and it is snowing sideways is never fun, but that is part of a lineworker's commitment.

The satisfaction of driving by a line I worked on, seeing the beautiful views from the top of a pole or getting the power on to our members after snowshoeing cross-country in the middle of the night makes it all worthwhile.

After nine years as a lineworker, I was able to take that knowledge to a new path creating our new dispatch center. I am proud of my new role, but it still comes in second to linework. ■

Kathryn Kennington is a system operator/dispatcher at the La Grande office of Oregon Trail Electric Cooperative, which is headquartered in Baker City, Oregon

Connecting Rural America

USDA Rural Development is committed to help rural communities prosper

John E. Huffman is state director for the U.S. Department of Agriculture's Rural Development in Oregon

Today, reliable access to electricity seems a foregone conclusion for most Americans. We use it constantly, with hardly a second thought, to keep the lights on for household chores and to connect to the wider world. That is a testament to the success of the Rural Electrification Act.

In 1935, electricity was largely unavailable in rural communities even as it became commonplace in larger cities. Nine out of 10 farms had no power for their homes or operations. The Rural Electrification Administration was created to bring electricity to remote areas where private companies considered the installation of electric lines not economically feasible.

The REA channeled funding through cooperative electric power companies, many of which are still in operation today. These member-owned cooperatives bought power on a wholesale basis and distributed it using their own network of transmission and distribution lines.

In 1994, the Rural Electrification Administration's utility programs were consolidated within a newly created agency at the U.S. Department of Agriculture: Rural Development. Today, these programs continue to provide capital for the expansion of the electric grid into remote areas and for improvements to existing rural electric transmission lines and generation facilities.

While there is still more work to do when it comes to rural electrification, we have made tremendous strides since 1935. Today, though, we face a new challenge. Just as electricity became a necessity for everyday life in the 20th century, we depend on reliable internet access in the 21st century for everything from paying our bills to communicating with friends and family, from marketing a business to researching for a school paper. Unfortunately, many rural areas have slow internet connections or none at all.

Just as we did with rural electrification, USDA Rural Development provides funding for broadband deployment into rural communities where it is not yet economically viable for private-sector providers to deliver service.

Residents of the rural towns of Molalla and Mulino in the Willamette Valley, for instance, have access to some of the fastest broadband services in the nation. With help from a $22.5 million loan from Rural Development through our Telecommunications Infrastructure Program, the Molalla Communications Co. built an advanced active Ethernet network, laying 375 miles of fiber.

The 6,000 residents, 300 small businesses and more than 25 anchor institutions in these communities now have gigabit broadband speeds that support the expansion of distance learning programs, the use of telemedicine at several local clinics, increased teleworking opportunities and the ability of local businesses to compete in the global marketplace.

In addition to high-speed internet access and the electric grid, Rural Development supports infrastructure improvements, business development, housing and community services such as schools, public safety and health care in rural areas. Our loans, loan guarantees and grants help expand economic opportunities, create jobs and increase prosperity in communities across rural America.

Rural Development's more than 40 programs touch the lives of almost everyone who lives in a rural area, whether through a home loan, upgrades to the community's wastewater treatment plant, construction of a new hospital or your ability to turn on the lights. We like to say that with all our programs, we can provide the building blocks for a thriving, healthy community.

But we can't do it without you, the support of the community you call home, and our partnerships with your electric provider and other businesses, cooperatives and nonprofits that are all innovating and striving to help our rural communities continue to succeed.

That is why I tell folks that I have the best job in the world! I get up every morning and build partnerships while managing Rural Development's program delivery in Oregon. Those programs help set the foundation for rural living, making it safer and more comfortable.

So, the next time you turn on the lights, fire up your computer or go about the many other parts of your normal day, you may very well be tapping into the results of USDA Rural Development investments in your community. Here's to rural living! ■

Guardian Angels

Utility personnel go above and beyond to respond to community problems and help neighbors in need

By Pam Blair

Brent Wiltbank and Chris Lee had finished lunch and were making their rounds, patrolling Graham County Electric Cooperative power lines near Safford, Arizona, looking for trees encroaching on the lines and trimming them.

It was business as usual—until an unexpected flash from the front window of a home caught Brent's eye.

Thinking it could be a fire, the lineworkers turned back to check it out.

"The front room was on fire," Brent says.

A lighted candle had ignited the drapes. Fire had spread to a hutch and the carpet.

"Our timing couldn't have been better," Brent says. "The fire was just starting to spread into the walls and attic."

As Chris called 911, Brent grabbed the fire extinguisher from the cooperative's truck, broke the glass of one of the home's windows and put out the fire, saving the house.

"There were kids' toys in the yard, so we were concerned children could be inside," Brent says. "Both of us went in a little ways. The smoke was really thick, like you see in the movies."

They hollered to see if anyone was trapped in the house. No one answered.

"The best news is nobody was in there," Brent says.

Each month, the Graham County Electric crew meets for safety training. One of the lessons was on how to use a fire extinguisher.

Brent remembered PASS, the acronym he had been taught for how to use a fire extinguisher: point, aim, squeeze, sweep.

"You never think you will have to use the training," says Brent, who is now the cooperative's safety and loss control coordinator. "I took a brief second to think, 'Should I break out the window?' Thankfully, everything worked out well. The extinguisher worked great. The fire department made sure everything was completely out."

All In a Day's Work

Providing assistance to people in need is all in a day's work for utility personnel—especially those who work in the field. They are often the first to encounter someone in trouble, or to notice something does not look right.

Because of their work-related training, utility employees often are equipped to render assistance.

Sometimes the good deeds save lives. Other times, they simply provide comfort and evidence someone cares.

CPR and first-aid training have equipped utility employees to help people they encounter who are in the midst of medical crises—both on and off the job.

Brent Wiltbank, loss and safety control coordinator for Graham County Electric Cooperative, in front of the house he saved from fire several years ago when he and a fellow lineworker were patrolling the power lines and trimming trees.

Photo by Kim Larkey

Among the "routine" aid offered is notifying police of accidents, fixing flat tires, jump-starting cars, providing gas and summoning help for stranded motorists.

Utility workers also have shoveled snow, filled woodboxes and rescued animals.

Familiarity with people on their routes gives workers the

desire and the opportunity to make a difference.

Some communities have formal gatekeeper programs, encouraging utility personnel to alert social service organizations to potential problems.

If something looks out of place or suspicious at a consumers' home, utility employees call for help or leave a message for the owner.

"We're in the neighborhoods all day, every day," says Brent, who has worked at Graham County Electric Cooperative for 19 years.

Heroes on the Road

Several Plumas-Sierra Rural Electric Cooperative employees have been beacons of hope—sometimes on the job, other times off the job.

Paul Erwin, who is based in Portola, California, arrived upon a rollover accident and radioed the office, which called 911. He stayed with the victims until the California Highway Patrol arrived.

Co-worker Joe Couto arrived on a rollover accident on a snowy, icy morning. A person flagged him down and asked for help. Joe turned on the vehicle's emergency lights and radioed the office, which called 911. A person inside the vehicle was badly hurt. Joe kept the person still and let him know help was on the way.

Justin Williams and Jason Harston were the first to spot a wildfire on Highway 70, close to Blairsden, California, that was threatening homes. They immediately called 911.

Even though it was the weekend, they headed to the office, retrieved the co-op's small water truck and returned to the fire. They thought about trying to extinguish the fire themselves with shovels, but it spread rapidly. By the time they returned, emergency personnel were on the scene.

"These acts happen all the time," Brent says.

Taking It in Stride

When it comes to kind acts and heroism, most employees do not want the spotlight to be shined on them, Brent says, noting they are just doing what they think is right and what they would want others to do for them.

"For the most part, the guys are humble and would tell you that anyone would do what they did," Brent says. "Our job is to keep people safe. Usually that's about electricity, but sometimes it isn't.

"Our guys lend a hand where they can—from people's animals caught in fences to kids that get away from Mom and run out in the street."

"The guys I work with are husbands and fathers—family guys. They care about human life and people's property.

"We want to help, and it doesn't matter if we have the uniform on or not." ■

Thank Your Lineworkers

Most of us can ride out a storm from the comfort of our homes. But while we hunker down, lineworkers put on their gear and brave inclement weather to restore power.

Although part of their job, it is another way utility personnel work to make sure you are safe.

April 9 is Lineworker Appreciation Day. Please let your lineworkers know you appreciate their hard work, sacrifice and commitment to keep on the lights and power. ■

Be Safe Around Electricity—Remember to Look Up!

With the irrigation season upon us and summertime activities just around the corner, Wasco Electric Cooperative wants to remind all of its members about the importance of electrical safety.

Throughout the Northwest, serious injuries or deaths occur every year from contact between irrigation pipe and primary power lines.

Irrigators need to pay particular attention to where overhead power lines are located in their fields.

The normal clearance between primary lines and the ground is 18 to 20 feet. The normal length of a piece of irrigation hand line is 20 feet. When held vertically, it could easily contact the primary lines, resulting in serious injury or death.

Any time you move irrigation pipe, first look up and make sure no power lines are in the immediate area. When storing pipe, do not store it directly under primary power lines.

Tree trimming, antenna installation and ladders are of particular concern when working around power lines. Any time you work near power lines, look up and be aware of their location in relation to the area in which you are working.

If a power line is too close to the area in which you are working, please call us for assistance before you start.

If you ever come across a downed power line, stay away from it. Call Wasco Electric at (541) 296-2740 and guard the area to prevent other people from contacting the line. ■

Eliminate the element of surprise each time you pay your electric bill by enrolling in Wasco Electric's budget billing program.

Photo by Andrey Popov

Gain Peace of Mind With Billing Program

Sign up for Wasco Electric Cooperative's budget billing program and receive the security of knowing your power bill will be the same amount each month.

We will total your previous year's use, then divide that amount into 12 equal payments for the coming year. The budget plan runs from May through the following April.

It is easy to qualify for the program:

- You must be a residential member.
- You must have lived in the same residence the past year.
- You must be current on your bill through April 2018.

To sign up, download an application at www.wascoelectric.com or call the office at (541) 296-2740. Return the application to the office before Monday, April 30.

We will set up your account for the plan. Your first budget payment will be reflected on your May bill.

If you have questions concerning the budget billing program, or any other questions concerning your account, please contact our billing department.

Payment Options

Wasco Electric Cooperative has several easy ways for you to make your payment:

- A recurring monthly charge to your checking account or credit card.
- By phone at (541) 296-2740 or (800) 341-8580.
- Online at wascoelectric.com.
- Mail to P.O. Box 1700, The Dalles, OR 97058
- At one of three pay stations:

—Wasco Electric Co-op Office, 105 E. 4th St., The Dalles.
—Maupin City Hall, 408 Deschutes Ave., Maupin.
—Warm Springs Market, 380 SW 5th St., Madras.

Contact the co-op office or go to www.wascoelectric.com for more information. ■

Your Three Votes:

One at the co-op. One at the ballot box. One in the choices we make every day.

Question 3 leaves unanswered questions

By Christina Sawyer

When Nevada voters passed Question 3, the "Energy Choice Initiative," in November, it left many Mt. Wheeler Power members wondering how it will affect their power bill.

The answer is complex. Depending on how the legislature reacts to the many questions that have come up since then, it is safe to say it could dramatically affect members' pocketbooks.

Members should know that a cooperative's basic principles require it to seek and provide the best possible energy options available. In fact, members already have many of the opportunities Question 3 seeks for public utility customers. However, for Mt. Wheeler Power to provide a reliable energy solution, it has negotiated terms, contracts and rates with power suppliers, transmission options and distribution centers—essentially putting all the puzzle pieces together. Question 3 jeopardizes all of that.

The trend of deregulation is not new to the power industry. Retail competition often drives the cost, but it has proven to be detrimental in many instances.

Question 3 is not right for our members.

Mt. Wheeler Power supplies its members with a diverse, clean and reliable power source from multiple resources. Most are under contract through 2027. Negotiations for the extension of these contracts are ongoing. It is unclear if retraction of these contracts is permitted or if the third parties will terminate existing contracts if Question 3 passes.

Also unanswered, are questions regarding obligations to federal contracts—such as the one Mt. Wheeler Power has with the Western Area Power Authority and contracts used to serve Native American tribes.

Additional questions are raised regarding power supply and transmission. The issues of stranded investment, load forecast, cost of service, reserve responsibility and the rights to transmission paths all have been left unanswered in the rush to pass Question 3.

Your cooperative will help educate legislators on all of the overlooked issues. For instance, energy efficiency and renewables. What need will there be for net metering or a renewable portfolio standard? Will renewable energy possibilities diminish because of inconsistency, lack of reliability and pricing in a strictly competitive environment? What incentives will utilities have to promote or provide energy-efficiency and renewable rebates or assistance?

Questions have come up regarding metering, billing and service. Will metering be a web-based function along with real-time billing and load management? How will members be billed for their energy use? Will it come from the distribution provider or the energy provider? In the case of a delinquent account, which provider has the right to terminate service? Are you prepared to wait to initialize a meter or new service?

A unique quality of a cooperative is its willingness and ability to provide member programs such as energy assistance, weatherization loans, appliance rebates and renewable energy options. Under deregulation, what incentives will there be for these programs?

What we do know? The results of deregulation in other markets left low-income customers out in the cold. Doing away with the utility model eliminates important consumer protections for low-income households, disabled persons and senior citizens.

Fraudulent energy suppliers used high-pressure sales tactics to trick elderly and non-English speaking customers by making false promises of bill savings.

The bottom line: Energy rates were not lower. In most cases, customers paid much more.

Let's not forget the human connection—the individualized attention that comes from working side by side with your neighbor or friend. Question 3 can limit your access to quick restorative action,

No On Q3

friendly service and compassion when dealing with delinquent accounts, and intuitive individuals who are trained to help resolve your real problems with budget, efficiency and education about energy needs.

As a member of your cooperative, you receive the lowest rates available. If left to choose, do you believe you could negotiate the same rate? Do you have a trusted relationship with another provider you believe will put you first. Or do you fear you will become collateral damage to the investor-owned utilities as they fight for territorial control? Are you prepared to become an unintended consequence of Question 3? More importantly, is your pocketbook prepared for the system obligation fees that will be considered a way to pay for future upgrades, facilities and line extensions?

Most of Nevada was misled by the propaganda used to pitch Question 3 last November, including claims it will create a free market of energy allowing consumers to choose where they buy their power, therefore creating more jobs, more renewable energy and lower prices.

White Pine County, which is served completely by Mt. Wheeler Power Cooperative, was not fooled. In fact, it was the only county to defeat the initiative.

Mt. Wheeler Power is working on a strategy to defend, protect and enhance its position during the legislative vetting process. It is the co-op's hope that it's members, through adequate examination and education, will see the faults of Questions 3.

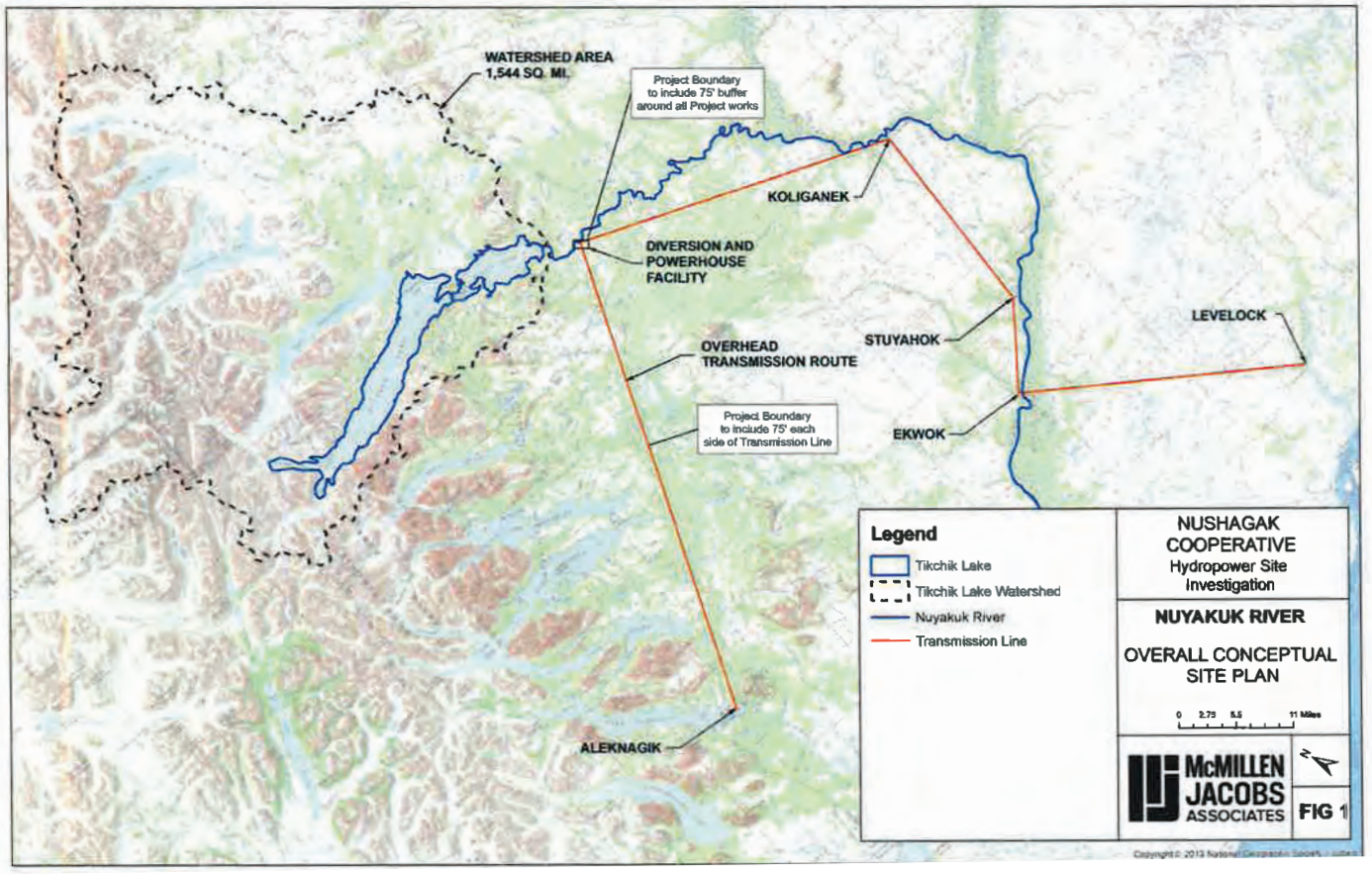
"Mt. Wheeler Power has given its support to the coalition to defeat Question 3," says Kevin Robison.

"1) As a voice of acknowledging the voting electorate position in White Pine County, as the only county in the state to not pass the question;

"2) As we have attended and participated in the proceedings (Governors Energy Choice Committee, and the Public Utilities Commissions Investigatory Docket 17-10001) we are not at all convinced that the language in the initiative, and the promises contained within that language is a guarantee for Nevadan's and, more importantly, our members. Large consumers (industrial) of energy, may find some financial advantages with the passage of the initiative, our belief is that the majority of our members will be armed greatly.

"3) Finally, We are deeply concerned about our Utah members potentially being severely impacted by the constitutional amendment in Nevada. Unlike NV Energy, several rural electric providers serve interstate, if forced to adhere to a constitutional mandate, will divide our service territories by the state borders, that will not be positive for anyone. Question 3 will result in winners and losers, our members, by way of their vote to oppose the initiative will remain winners, and retain the local control of their cooperative."

Your access to safe and reliable energy is too important to permit the unpredictable and uncontrollable cost increases of market deregulation. Mt. Wheeler Power has put all the pieces of this complicated puzzle together for you, and is confident you will not be motivated to seek alternative generation beyond your own cooperative. We encourage you to vote NO on this flawed ballot measure to ensure you maintain control of your energy needs. ■



Map of the proposed Nuyakuk River Hydroelectric project boundary.

Nushagak Proposes New Hydro Facility

If successful, the new plant could supply 100 percent of power, with excess available

As members of Nushagak Cooperative, you are well aware of the high cost of electricity in the area. The cooperative has been searching for alternative energy sources. Hydropower shows the most promise.

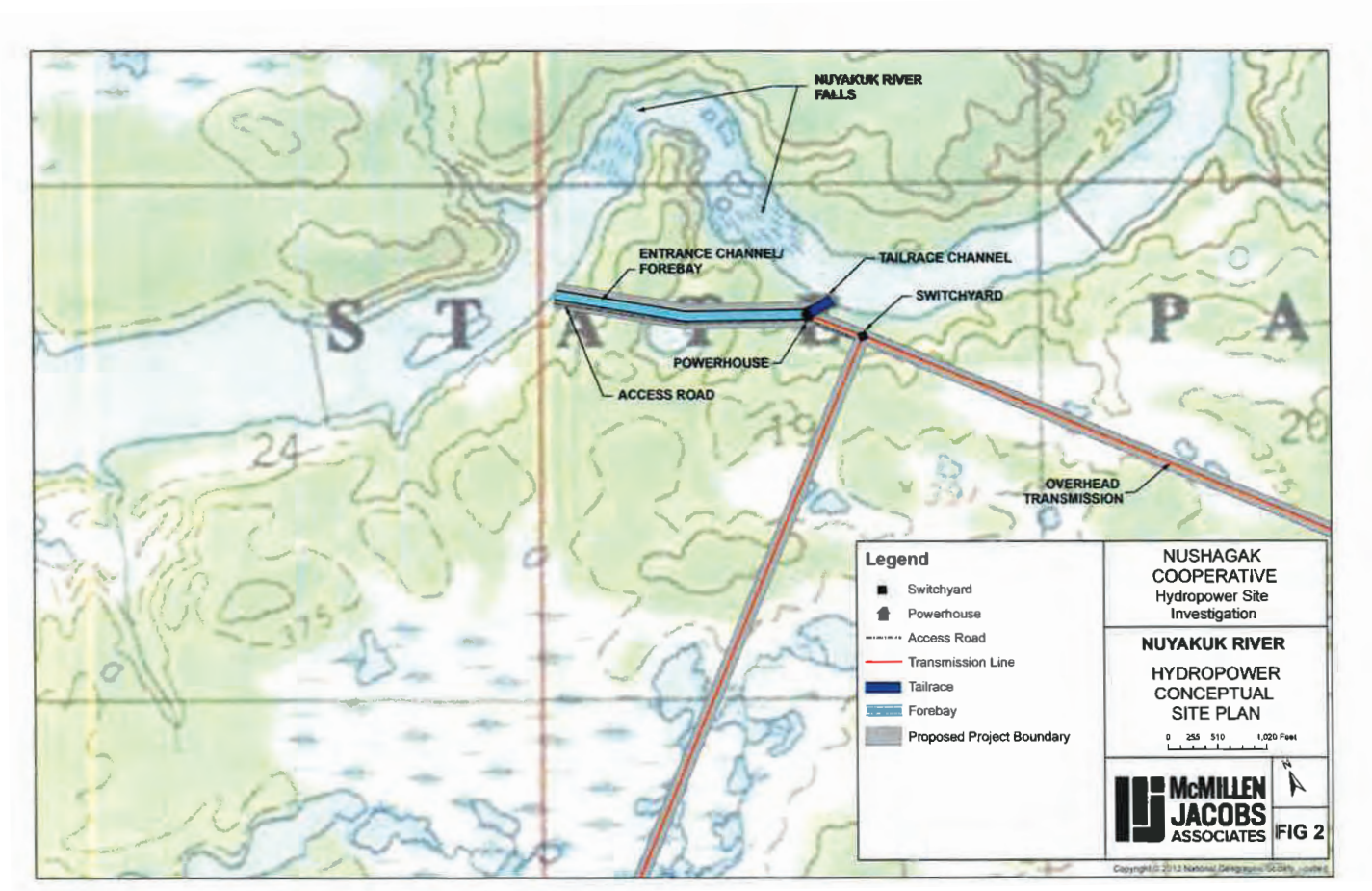
Nushagak has been exploring the possibility of developing a hydroelectric project at Nuyakuk Falls. We have applied for the preliminary permit with the Federal Energy Regulatory Commission.

The project is 3 miles in the Wood Tikchick State Park and requires a special park use permit, which we have applied for. This is part of the process that will get us started on environmental studies this summer. It will take several years to complete the studies and design to get to the construction phase.

The project has the potential to displace 1.5 million gallons of diesel that is used for electric generation not only in Dillingham but Koliganek, New Stuyahok, Ekwok and Levelock. It will also remove a large percentage of fuel barged up the Nushagak River, reducing the chance of a spill in the main artery of the fishery that we all want to protect.

The project not only provides hydropower, we can bring hardline fiber in on the transmission line from Levelock to Dillingham. The fiber network will increase capacity for higher internet speeds.

There is no need for a dam with this design—it will take advantage of the natural dam and spillway that exist at the headwaters of the Nuyakuk River about 4 miles downstream of Nuyakuk Lake. The



Map of the proposed Nuyakuk River Hydroelectric project infrastructure.

design will tap the river at the top of Nuyakuk Falls and divert a portion of the flow through a penstock (pipeline) and back in the river at the bottom of the falls. It has a small footprint and therefore a smaller impact on the environment.

A United States Geological Survey flow meter has been at this location for 60-plus years, and the data is one of the sources we used to determine the amount of potential for production. Using less than a quarter of the flow, we should be able to produce 4.5 megawatts in the winter. At high water in the summer, we expect 15-plus MWs. We currently use a little more than 2 MW in the winter and 4.7 on average in the summer. This should remove the need for diesel power production. The rest of the energy would be used for upriver villages and growth.

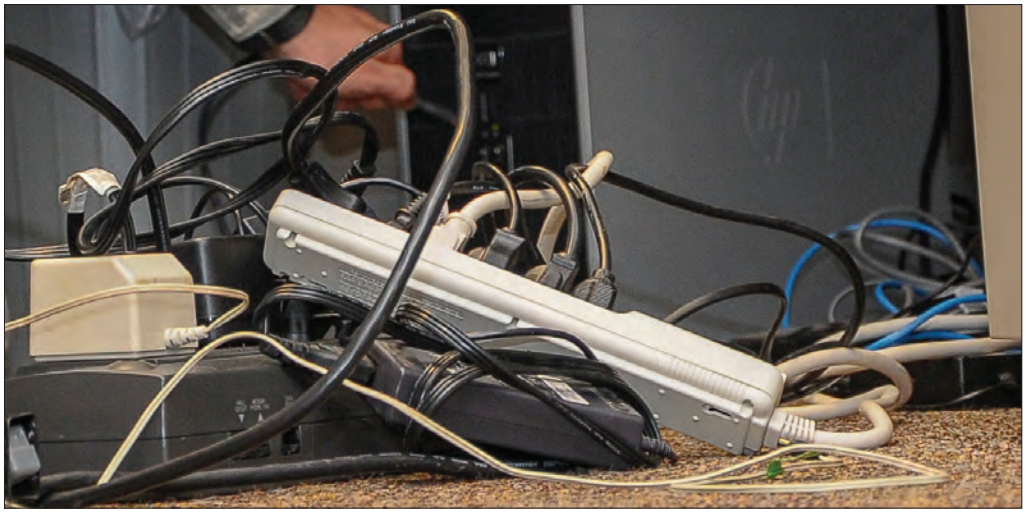
The demand on the system is at its peak when the river flow is also at its peak. This means when we need the most production, we have the smallest impact on water volume. Conversly, when river flow is at its lowest level, we have the least demand on the system. This shows that the flows match our demand and helps make sure we can develop and operate this project with little impact on the environment.

Adult salmon and smelt runs are ongoing during peak flow times when this project will use the smallest percentage of water flow. This will help mitigate the effect on the salmon fishery.

Our peak demand is high during the summer because that is when the cannery, which is our largest load, is processing salmon. A hydro facility will allow us to use water to process salmon and generate renewable power, ensuring continued success of an important part of the area's economy.

Establishing a utility grid will give the cooperative and the region the ability to become 100 percent renewable for our power needs . As an added benefit, broadband capabilities will be increased.

We will keep you updated on this project in future editions of your Ruralite magazine. ■



If you have a mess of electrical cords lurking behind your desk or TV cabinet, it is time for a little cord cleanup.

Keep It Safe

Clean Up Your Cords

If you pull your desk or TV cabinet away from the wall, you might find a tangle of cords, cables, wires and plugs.

That is not good for your electronics. It also could lead to a fire if all of the cords are plugged into the same overloaded power strip.

Here is what to do:

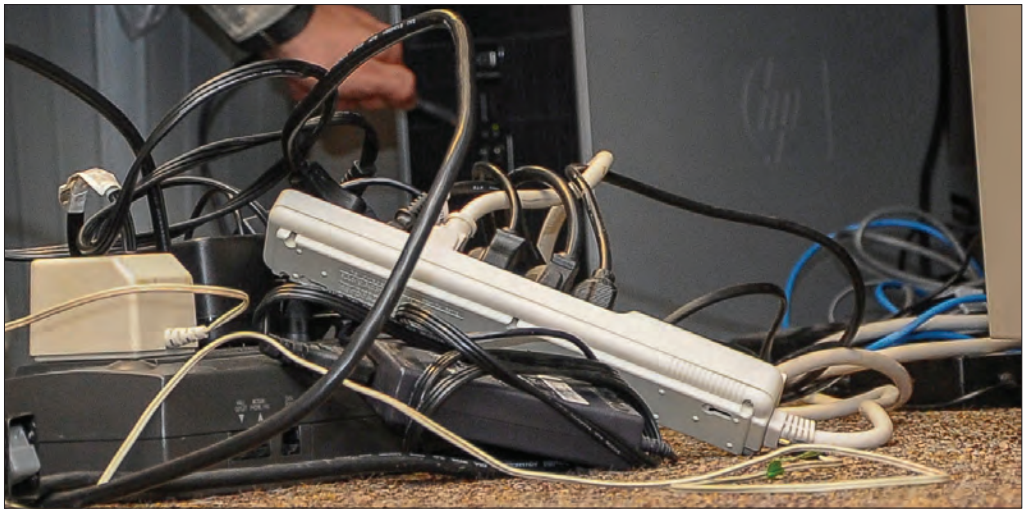
- Unplug everything—computer, scanner, phone charger, TV, speakers and printer. You likely will find cords not attached to anything. Weed out unneeded cords.
- Remove extension cords. They are not designed for permanent use. They are unnecessary if your plug or power strip is close to your devices.
- Dust the cords, vacuum the floor and wipe down the wall around the outlet.
- If you have more than one power strip plugged into a single outlet, move some to other outlets. You can overload a circuit and tax your electrical supply. If you do not have enough outlets, call a licensed electrician to add more.
- Invest in a few inexpensive Velcro cable ties. Bunch your remaining few cords together like a bouquet of flowers and wrap the tie around them. This will keep them neatly together.
- Drill a hole into the back of your computer desk or TV cabinet big enough for all of the cords to pass through. That will keep the cords together and off the floor. ■

#ThankALineman

April 9 is Lineman Appreciation Day. Escambia River Electric Cooperative recognizes electric linemen for their around-the-clock services in dangerous conditions to keep power flowing and protect public safety.

"Electric linemen do not often receive the recognition they deserve," said EREC General Manager/CEO Clay Campbell. "They work all hours of the day, often in hazardous conditions far from their families, going above and beyond to restore power to their communities. Our linemen, as well as linemen from across the nation, truly deserve this special day of recognition."

EREC invites members to take a moment to thank a lineman for the work they do. ■



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Value of Electricity Continues to Shine

Consider how much you rely on plugging in to satisfy your appetite for power

By Derrill Holly

How many of us remember dropping into a Glades Electric Cooperative office with our parents and grandparents to pay the light bill?

Whether you do that in person, by mail or online today, paying your monthly bill does a lot more than just keep the lights on.

Electricity keeps us connected to our modern world. Consider all the necessities and conveniences we enjoy in part because of the power lines running to the electric meter outside your home.

Count up your televisions, desktop, laptop and tablet computers, printers, your gaming consoles, music and video players and personal assistant devices.

Whether they are used every day or occasionally, the electricity that keeps them working comes from GEC.

Have you looked around your kitchen lately? Between the coffee maker and toaster and the microwave and electric skillet, a lot of us have added several other modern small appliances.

If you have a craft nook or workshop, the power tools and machines you use to cut and shape your projects are either plugged in or recharged from the outlets connecting your household wiring to GEC.

You use electricity to run all these devices, and still keep the lights on, use the stove, rely on heating and air conditioning, and get hot water from the tap.

The good news is, even as we rely more on electricity, it is still a bargain—especially compared to other things we pay for regularly.

Since 2011, medical care, residential rental rates and education have increased at rates of 3 percent or more a year. Butter, meat and egg costs have been up by more than 1 to 2 percent annually. Even bread costs have risen better than a half point, on average.

Electricity costs rise about 1 percent a year, but cooperatives across the country have reported a decline in average residential use per household since 2010.

That means we are doing more things with less energy.

Kilowatt-hour use per household dropped by 8 percent between 2010 and 2016—slightly less than the 9 percent decline reported by all electric utilities nationwide.

When it comes to value, electricity is a clear winner, and we are always looking for ways to work with you to make it even better. That is why GEC urges energy efficiency, encourages you to look for Energy Star appliances, and promotes technology designed to give members more control over their electricity use.

Energy performance dashboards, smart thermostats and power strips, and appliance settings that shift most water heating, laundry and dishwashing outside of peak rate periods help reduce the co-op's overall power demand. They also give you opportunities to control or even trim your monthly utility bills.

That is good for families, couples and individuals eager to live within their budgets.

It is going to become even more important as digital devices and internet-connected technologies become even more important in our lives.

The average home now has 10 Wi-Fi-connected devices. That number is expected to explode to 50 by 2020.

Technology and the gateways that keep it working use electricity, so you will depend on GEC for more than the power that keeps the lights on.

That is why we are always working to provide service that is reliable, keep it affordable and make it even more valuable to our members—you, your family and your neighbors. ■

The Cooperative Way of Business: Members Always Come First

In 1945, Glades Electric Cooperative was incorporated to provide safe, affordable, reliable electricity to our members. At the start, GEC's focus was the members. Fast forward 73 years, and that is still GEC's priority.

That is the value of being a cooperative. We are owned by those we serve. Cooperatives follow seven principles. Known as the Rochdale Principles, they not only benefit the cooperatives, but our member-consumers.

When introduced to the U.S. in 1874, these principles fueled a cooperative explosion. The seven principles state that a cooperative must provide:

- Open and Voluntary Membership.
- Democratic Member Control.
- Members' Economic Participation.
- Autonomy and Independence.
- Education, Training and Information.
- Cooperation Among Cooperatives.
- Concern for Community.

Cooperatives across the country abide by these principles, including Seminole Electric Cooperative—the generation and transmission cooperative that provides wholesale power to nine distribution cooperatives in Florida, including GEC.

Approximately 1.7 million people and businesses in parts of 42 Florida counties rely on Seminole's member cooperatives for electricity, which includes GEC's more than 12,000 members.

Like GEC, Seminole knows the value of being a cooperative and follows the seven cooperative principles.

Seminole's 27-member board of trustees is made up of the CEO and two trustees from each of its nine member electric cooperatives. Jeff Brewington, James Aul and Donnie Lundy represent GEC on Seminole's board. Similar to the way GEC's Board of Trustees oversees issues that affect our cooperative, the Seminole Board of Trustees oversees issues and topics affecting Seminole and its members.

Between technology and market conditions, the electric utility industry is constantly changing. One thing at GEC will remain the same: the focus on our members and the partnership with Seminole to keep our members' electricity safe, affordable and reliable in years to come. ■

For more information visit www.gladesec.com or www.seminole-electric.com.

The Power Behind Your Power

By Anne Prince

As April arrives, it brings with it the showers that produce spring flowers. It also heralds the beginning of a potentially stormy season that can include power outages. While Glades Electric Cooperative strives to provide reliable electricity to members, there are times Mother Nature has other plans.

Most of us can ride out a storm from the comfort and convenience of our homes. However, a group of professionals springs into action when the weather takes a turn for the worst: cooperative lineworkers.

Braving stormy weather and other challenging conditions, lineworkers often must climb 40 or more feet in the air, carrying heavy equipment to restore power. Linework is listed as one of the 10 most dangerous jobs in the U.S.

Lineworkers must perform detailed tasks next to high-voltage power lines. To help keep them safe, lineworkers wear specialized protective clothing and equipment when on the job.

This includes fire-resistant clothing that will self-extinguish, limiting potential injuries from burns and sparks. Insulated and rubber gloves are worn in tandem to protect from electrical shock.

While the gear performs a critical function, it also adds weight and bulk, making the job more complex.

In addition to the highly visible tasks lineworkers perform, their job today goes far beyond climbing to the top of a pole to repair a wire. They are also information experts that can pinpoint an outage from miles away and restore power remotely.

Line crews use laptops and cellphones to map outages, take pictures of the work they have done and troubleshoot problems.

While some of the tools have changed through the years—namely the use of technology—dedication to the job has not.

Being a lineworker is not a glamorous profession. It is dangerous, requiring work near high-voltage lines in the worst of conditions at all times of the day or night. During hurricanes, wildfires or storms, crews often work around the clock to restore power.

In our community, Glades Electric Cooperative lineworkers are responsible for keeping more than 2,676 miles of lines across four counties working, all to bring power to your home and our local community 24/7, regardless of weather, holidays or personal considerations.

While April is known for spring showers, there is also a day set aside to thank a lineworker. Lineworker Appreciation Day is April 9. During the month, if you see a lineworker, please pause to say thank you to the power behind your power. Let them know you appreciate the hard work they do to keep the lights on, rain or shine. ■

Tips for Better Time Management

Strategies to maximize the return on the hours you invest in your day

By Allison Goldberg

Are you busy? Need to do more with what little time you have? Stop wasting time and get to it with these six tips.

- **Eliminate time-wasters.**

Modern life has many distractions. If you know you will be tempted to check Twitter or anticipate too many knocks at your office door, take steps to limit interruptions before you start. Close all programs and tabs except those you need. Let co-workers know you need to focus, close your door or put on noise-cancelling headphones. Put your phone in a drawer.

- **Plan ahead.**

Before a big day or before beginning a complicated or multipart task, sit down and make a plan. Picking out what you will wear, prepacking your lunch, checking to make sure your bags are packed with everything you need and reviewing your itinerary—including transit schedules, directions, meetings, afterschool activities, places to fuel your car and body and making sure you have enough time between things—can make any day feel less stressful and frantic. Before a project, create a plan of action with estimates for how much time each task or portion will take to prepare yourself mentally for the work ahead, allowing you to notice and solve time-related problems ahead of time.

- **Prioritize and set goals.**

Once you have assessed all you need to accomplish, prioritize urgent and important matters. Set daily or project-based goals based on your priorities. For instance, finding new luggage for your trip can wait a few weeks, but you absolutely must call the plumber before the tiny leak worsens, schedule your semi-annual dental appointment and research Spacely Sprockets for your boss today.

- **Track your time.**

Put a clock in a prominent place or use a timer to stay on task. Stop when the time you have allocated is over and move on to the next task. Be sure you allocate time for breaks and transitions between tasks.

- **Focus rather than multitask.**

Studies have shown multitasking, or task-switching, is not as productive as focusing on a single task. Multitasking increases the time it takes you to complete tasks and the number of errors you make. The more difficult or complex a task, the more time is lost and the more errors you will make, losing up to 40 percent of your productivity. Group similar tasks together to further cut the negative effects that task-switching can have on your work. For instance, respond to emails, texts, chat messages and phone messages in the same block of time.

- **Delegate or outsource.**

Productivity is not worth your sanity. If you cannot reasonably accomplish everything on your to-do list, enlist help. Delegate appropriate tasks to co-workers, your spouse and children. Ask a friend or neighbor for help. Outsource big jobs that take too much time or energy, such as yard work, or use services that take tasks off your plate, such as grocery delivery or laundry services. ■

If you feel overloaded by the demands on your time, implement a strategy to manage the hours in your day.

HOW TO PREVENT ELECTRIC SHOCK DROWNING

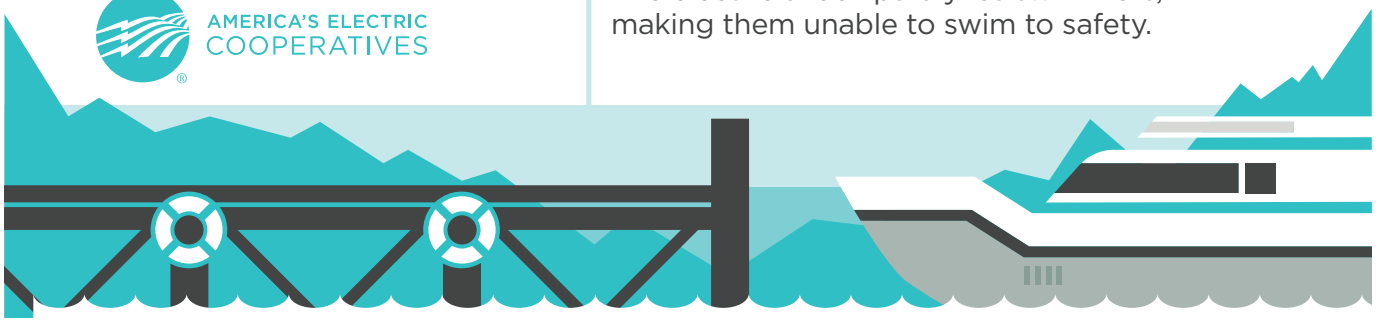
AMERICA'S ELECTRIC COOPERATIVES

Each year, 3,800 people die from drowning.

Electric shock drowning occurs when an electric current escapes boats, docks and lights near marinas, shocking nearby swimmers.

There are no visible signs of current seeping into water, which makes this a hidden danger.

The electric shock paralyzes swimmers, making them unable to swim to safety.



ELECTRICAL SAFETY TIPS FOR:

Swimmers

- **Never swim near a boat or launching ramp.** Residual current could flow into the water from the boat or the marina's wiring, potentially putting anyone in the water at risk of electric shock.
- If you feel any tingling sensations while in the water, **tell someone and swim back** in the direction from which you came. Immediately report it to the dock or marina owner.

Boat Owners

- **Ensure your boat is properly maintained and consider having it inspected annually.** GFCIs and ELCIs should be tested monthly. Conduct leakage testing to determine if electrical current is escaping the vessel.
- **Use portable GFCIs or shore power cords** (including "Y" adapters) that are "UL- Marine Listed" when using electricity near water.
- Regularly have your boat's electrical system inspected by a certified marine electrician. **Ensure it meets your local and state NEC, NFPA and ABYC safety codes.**

IF YOU SEE ELECTRIC SHOCK DROWNING TAKING PLACE:

TURN POWER OFF

THROW A LIFE RING

CALL 911

DO NOT enter the water. You could become a victim, too.