



CAPITAL ELECTRIC
COOPERATIVE

CAPITAL ELECTRIC COMMENTS

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JANUARY 2017

The elephant hidden in your electric bill — and what YOU can do about it

See pages C2-C3 for more information.

JANUARY 2017 IN THIS ISSUE

- Facts about on-peak usage
- Member survey opportunity
- Apply NOW for the Youth Tour and student scholarship
- Les Vietz retires
- Meeting minutes and more



MANAGER'S COLUMN

On-peak usage: The elephant hidden in your electric bill

BY PAUL FITTERER

Congratulations. Your pattern of electric usage is nearly identical to your neighbors ... and their neighbors ... and the vast majority of the members of Capital Electric Cooperative (CEC). Although it may feel good to have such similarity with others, it won't when you realize that your electric rates are being driven upward because as CEC members, we are nearly all using our electricity at the same time.

You may ask, "So why would it matter when I use electricity? After all, CEC only bills me for how much I use; not when I use it." In actuality for residential and small-commercial members, this is the elephant hidden in your electric bill and it's all about "on-peak usage."

To explain, let's first take a look at how CEC is billed by our wholesale power provider. Roughly 40 percent of our monthly power cost is determined by the total amount of kilowatt hours (KWH) that our members use and the other 60 percent is based on the single-highest point during the month when our members collectively use the most KWH. This highest-collective point is called the "monthly system peak," and it may occur on multiple days in a month and last for a few hours at a time. Electricity used during the system peak is called "on-peak usage."

So, why do our wholesale power rates work this way? Simply put, there must be enough generating capacity available to provide sufficient electricity to cover the monthly system peak requirements. Think of it as an availability charge. If there is not enough generation available to meet the system peak, expensive new power plants, transmission lines and substations must be built. As an example, if CEC normally tops out at 50 megawatts of power during a mild month, but on one very hot summer day during that month requires 80 megawatts of power, CEC will be billed on its system peak of 80 megawatts for the whole month — even if we only reached that level of demand for a few minutes.

Let's take a look at the typical CEC family on a hot summer day. Parents are at work and children are not hanging around the house. Few appliances have been used during the day, the lights were turned off, and the air conditioning was set to a higher daytime temperature. CEC's power requirements of 50 megawatts is low during this time. As the family returns home, they turn down the air temperature to cool the house, use the oven to make supper, turn on the TV and start the laundry. The family's single-highest point of electricity usage for that day has been reached between 4:30 and 6:30 p.m. Now suppose that 15,000 other CEC families have similar lifestyles and also reach their peak usage between 4:30 and 6:30 p.m. All of this power used at the same time has created a system peak of 80 megawatts, all of which will be billed to CEC on its monthly wholesale power bill. Subsequently, these costs are passed to you, our members.

So, why are charges for on-peak usage hidden on most of your bills? Historically, residential and small-commercial users have had very similar usage patterns, and it was more difficult to measure and bill for peak usage. In the past it has been more cost-effective and simpler to use averages of

residential peak usage and build them into a single KWH rate. In contrast, members with higher power requirements, such as larger-commercial and agricultural accounts requiring three-phase services, have unique usage patterns and sizing requirements. Because of this, they see separate charges on their electric bill for both KWH and peak usage.

Will our peak usage always be embedded in a single KWH charge? Well, probably not. Gone are the days of sending a meter reader to read each meter every month. Instead, CEC receives hourly electronic meter readings that are carried over the power lines back to our office. With this technology comes the ability to create new rate structures that reward members to use more of their energy during off-peak times. In fact, the electric industry in general is already adopting many innovative rate structures to help reduce the system peak by promoting off-peak usage. They are adopting time-of-use rates, on-peak surcharges and night-time only off-peak rates (think electric vehicle charging), and incorporating programmable thermostats into peak reduction. As a real

bonus, by taking measures to reduce the system peak and thereby reducing the pressure to build new power plants, we can also be considered to be environmentally friendly.

Today, CEC offers off-peak rates for irrigation, dual-fuel electric heat and large three-phase commercial accounts. We also provide a monthly bill credit to those members who are on CEC's controlled water heater rate. Those participating in these programs receive costs savings on their electric bills, and the co-op recognizes reduced peak charges on our wholesale power bill.

In 2017, a major focus by CEC's directors and employees is to implement additional programs to encourage each of you to reduce your on-peak usage and reduce your electric bill at the same time. We look to introduce a number of additional options that will help reduce "the elephant in your electric bill."

In closing, I want to acknowledge that this issue will reach you in early January, and I want to thank you for your patronage and support this past year. Stay safe and stay tuned as we roll out new money-saving and peak-reducing programs in the upcoming year. **CEC**



PHOTO BY CARMEN DENNEY

Keep snow and ice away from electric meters

BY JACKIE MILLER

We're full swing into the winter season and snow is piling up. Capital Electric Cooperative, Inc. reminds our members to inspect their electric meter on a regular basis; especially after a heavy snowfall like the blizzard experienced across much of North Dakota the first week of December. Heavy snow drifts can settle on your electric meter. It is important for you to carefully clear snow and ice away from the meter and surrounding area for these reasons:

- Accumulated snow places stress on your meter and wiring, and

may harm the meter or cause an unnecessary power outage.

- The weight of the snow can pull the meter off its mount.
- Capital Electric line crews may need you to clear access to your meter during an outage. This action alone lengthens the response time of an outage.

Meters are designed to withstand extreme weather conditions, but we must remain vigilant in protecting them from snow and ice buildup. The next time you bundle up to go outside, take a close look at the electric meter. If there is snow or ice

on the meter, gently brush it off with your hands or a broom.

Capital Electric shares these tips for safely removing snow and ice from your meter.

- Do not strike the meter with snow blades or shovels.
- Do not kick your meter to break or clear the ice.
- Remove overhead icicles and snow from eaves and gutters, to ensure they do not cause damage as they fall.

Thank you, members, for your attention to this matter. **CEC**

MEMBER SURVEY OPPORTUNITY

This survey and drawing prizes are only intended for those members currently receiving electric service from Capital Electric Cooperative.

In an effort to reduce the overall electric demand for Capital Electric and save money for our members, we are planning to initiate various peak-demand reduction procedures that you may be able to participate in. Please take the time to respond to the following questions that will assist us in evaluating what options would be available to you.

1. Do you currently have electric heat or any type of electric heater at your home? This would include electric baseboard heat, wall heaters, garage heaters and others.
Please circle: Yes No
If so, are you aware that you may be eligible for Capital Electric's discounted heat rate?
Please circle: Yes No
I am already on this rate.
2. Do you currently have an electric water heater in your home?
Please circle: Yes No
Capital Electric offers a load control credit program for water heaters in which a device is attached to your water heater and during times of peak energy demand, Capital Electric cycles your water heater on and off on pre-defined intervals. Dependent on factors such as water heater size, number of family members and other factors, the hot water requirements of the home can still be met. Best of all, Capital passes on savings in a monthly bill credit back to you. Would you be interested in learning more about this program?
Please circle: Yes No
I already receive this credit.
3. Do you currently have an air source heat pump for heating and cooling in your home?
Please circle: Yes No
4. Capital Electric is considering a new optional summer load-control credit program for air conditioning. Similar to the water heater program, Capital Electric would cycle your air conditioner on and off during times of peak energy usage. In return, a savings credit would be given to you on your monthly bill. Would you be interested in learning more about how you could earn a monthly bill credit for allowing Capital Electric to control your air conditioning during peak demand times?
Please circle: Yes No
5. Capital Electric is also considering implementing a second optional summer load-control program. Instead of an additional device to control your air conditioner, Capital Electric would connect to a Smart Thermostat (Nest, Ecobee, etc.) located in your house. Signals would go out to pre-cool your home just prior to a peak energy event. During the peak energy event itself, your thermostat would be turned up 4 degrees and then revert back to normal once the peak energy usage period was over. Pre-cooling allows your home to stay comfortable until the peak event is over and results in a savings to you because energy used outside the peak is less costly to the cooperative.
 - a. Do you have a smart thermostat such as NEST, Ecobee, Etc?
Please circle: Yes No
 - b. If you have a smart thermostat, would you be interested in learning how you could earn a credit on your bill by allowing Capital Electric to control your thermostat to reduce usage during peak demand times?
Please circle: Yes No
 - c. If you don't have a smart thermostat, would you be interested in this program if Capital provided you with a smart thermostat?
Please circle: Yes No
6. Capital Electric is considering implementing a new "Beat the Peak" program — proven to work at a number of other electric cooperatives across the country. Like the basic premise of a cooperative, it's all about working together to reduce our collective power bills. It is as simple as logging into your Capital Electric SmartHub account and signing up under the notifications section for "Beat the Peak." This optional program provides text or email notifications when Capital Electric is expecting to reach a period of peak demand. On a voluntary basis, members do their best to shift what electric usage they can to a time outside the peak period. It's as simple as programming your dishwasher to run later in the evening or run your clothes dryer at a different time. Best of all, the more usage we move off the peak, the less pressure there is to build new power plants; it's very environmentally friendly. Would you be willing to participate in this program and receive peak alerts by text or email when

Capital Electric is expecting to reach a period of peak energy demand?

Please circle: Yes No

7. Ever wonder where your power comes from? Would you like to learn how your cooperative works? Capital Electric will soon be offering a forum for explaining the nuts and bolts of your electric cooperative, from the power plant to your meter and everything in between.

Would you be interested in attending quarterly meetings over a two-year period at Capital Electric to help you learn more about your cooperative and allow you to provide feedback on a variety of issues?


Please circle: Yes No

Member Name _____

By completing this survey, you will be entered into a drawing to win one of three \$50 gift cards.

Thank you for taking the time to answer these questions and support Capital Electric in our effort to reduce demand and save our members money! **CEC**


This survey can also be completed online, please visit our web site at www.capitalelec.com and click on the link on the home page to complete the survey. If you are filling out this form, please mail to our office: Capital Electric Cooperative, P.O. Box 730, Bismarck, ND 58502.



HIGH SCHOOL SOPHOMORES & JUNIORS

WRITE A WINNING ESSAY AND WIN A TRIP OF A LIFETIME!
An all-expense-paid trip to WASHINGTON, D.C.

- To enter the essay-writing contest, you must be a sophomore or junior in high school.
- You and your parents or guardian must be served by Capital Electric Cooperative.
- If you have a question, contact Wes Engbrecht, Capital Electric, at the address listed below, or call 701-223-1513 during regular business hours.
- The deadline is Jan. 31, 2017. Email entries to wese@capitalelec.com or mail to: Youth Tour Essay Contest, Capital Electric Cooperative, 4111 State St., Bismarck, ND 58502-0730.



ESSAY QUESTION:

Democracy is the foundation of our American way of life and of cooperative enterprise. The fundamentals of democracy include voter participation, political party affiliation, and public debate of issues. Describe what you think makes our current democracy strong, and provide suggestions for ways our democracy can be made stronger and more effective.

CHECK OUT THE ESSAY-CONTEST GUIDELINES AT
www.ndyouthtour.com
and **www.youthtour.coop**



Capital Electric offers student scholarship

Capital Electric Cooperative is offering a \$1,000 student scholarship, in partnership with Basin Electric Power Cooperative.

To qualify for the scholarship, seniors must be enrolled or planning to enroll in a full-time undergraduate or graduate course of study at an accredited two-year or four-year college, university or vocational/technical school. Their parents or guardians must be members of Capital Electric.

Our cooperative will assemble a panel of impartial judges to review all applications. The judges will select the winning application based on academic performance, potential to succeed, leadership and participation in school and community activities, honors, a statement of education and career goals, work experience and an outside referral. The scholarship will be awarded without regard to other awards, loans or financial assistance the applicant may have obtained.

Application forms may be downloaded at www.capitalelec.com or picked up at co-op headquarters at 4111 State St. N. in Bismarck. Applications need to be completed and returned to Capital Electric on or before Friday, Feb. 17.



PHOTO BY CARMEN DEVNEY

Hired by Capital Electric Cooperative in 1976, Lineman **Les Vietz** started in the cartridge fuse days. Now the cooperative has arc reflection breakers and ground-fault interrupter outlets. It's a major difference.



When the Missouri River spilled over its banks and began pooling, residents relied on sand bags and sump pumps to protect their homes. The water eventually flooded transformers, vacuum fault interrupters and miles of underground conductor, and the Sandy River Drive development lost power for 10 days. More than 20 homes lost electric service, jeopardizing pumping efforts and requiring expensive replacement generators for power.

In a monumental effort to save their homes from devastation, area residents worked with Capital Electric's linemen to implement a method of restoring power even though the impacted electrical infrastructure was underwater. Under the guidance of veteran Lineman/Crew Foreman Vietz, they ordered an iron frame and ferried it by pontoon, along with a crane and sandbags, to an electrical site that had a submerged circuit breaker and switching equipment. After cutting off partial electric service to eliminate public safety risks, the linemen hoisted the frame over the circuit breaker and created a cofferdam around the equipment. They pumped out the water and rerouted switching equipment, which restored power to impacted homes. The temporary fix worked until linemen could return to the site after the water receded and make permanent repairs.

"Les has been a model employee for Capital Electric Cooperative. One time in his career where he really shined was the flood," says Rick Dressler, operations supervisor for Capital Electric. "Les did a phenomenal job getting the power back on and saving people's homes."

The go-to guy for work and home

Les graduated from McClusky High School and the Bismarck Junior College line school. He moved to Dickinson and took a job with Montana-Dakota Utilities, working as an apprentice for four years. He moved to Bismarck and accepted a job at Capital Electric as temporary help in 1976. The position, and his journeyman lineman status, soon became permanent.

A lot of what he learned was self-taught, on the job. "What was nice about working here, I had the time and opportunity to learn on my own. I was never pressured to hurry up and get the job done," he says.

Les has seen countless changes at the cooperative since

*In past years, member surveys have indicated that consumers believe co-ops fall behind in innovation, when compared to the "smart" technology used by investor-owned utilities and municipal utilities. **Les Vietz** reflects on substation relays and electronics, and says co-ops have everything their competitors do — yet they are humbler in the way they quietly go about their business.*

Vietz, crew foreman and "hero," retires after 41 years

BY CARMEN DEVNEY

Linemen are sometimes considered heroes because, at times, they work in dangerous conditions for long hours to restore electric service after a snow and ice storm. To residents in the Sandy River Drive development in northwest Bismarck, Capital Electric Cooperative Crew Foreman Les Vietz is a hero — because he helped save their homes during the flood of 2013.

Vietz, a dedicated cooperative employee for 41 years, is retiring Feb. 1.

1976. In the good-old days, Vietz left the co-op in the morning with his crescent wrench, hard hat and hooks. Now, he also carries a laptop so he can troubleshoot disturbances in electric service by connecting his laptop to a test meter and programming the breaker settings and related electronics.

The only crew foreman at Capital Electric, Les oversees the linemen and helps build and maintain the overhead and underground distribution system. He also helped build at least seven of the co-op's substations, and was instrumental in the installation of their TWACS and SCADA systems.

Les also works alongside the linemen to fix the occasional power outage. Out of the countless restorations he's worked over the years, the one he remembers most had nothing to do with inclement weather or late hours. It was memorable because after the power was restored, a little girl came out of the house and wrapped her arms around his legs in gratitude.

Both in the field and at the office, Rick says Les treats everybody fairly and with respect.

"He taught me everything I know about this trade. I owe a lot to him," he says. "He's the type of guy who can fix anything. That's what we're going to miss about him. His mechanical skills, and of course, his sense of humor."

Lead Lineman John Frey says Les is his go-to guy whenever he has a question.

"There are always different ways of doing a job, and it's nice to get another opinion. Les is always the first guy for me to call and say, 'What do you think about this, or how would you do that?' He has a lot of technical knowledge, and whenever there was something new, he always figured out a way to do it and take the lead role. I'll probably still call him once in a while after he retires," he says. "Les is



Operations Supervisor Rick Dressler says Les is the type of employee who keeps himself busy. "You don't have to worry about giving Les any work. All he's done his whole life is worked," he says.

always willing to help you out with anything."

That help extended into many of the linemen's personal lives. Lead Lineman Brad Johnson says Les is the type of guy you could work with all day, and the next, go fishing together on their day off. From teaching him much about the line trade to fixing his boat on occasion, Brad says Les has been a leader, mentor and friend.

"He'll be missed. That's for sure," he says.

Les says he has had a good life working at Capital Electric, and that he has enjoyed the camaraderie of the line crews. This parting thought was taken from one of the many Top 10 lists Les wrote over the years. He reflected, "You know you have been [at Capital Electric] for 40 years when you start realizing it has been a good way to make an honest living and be able to end it with a nice retirement."

Thank you, Les. You're going to be missed. **CE**

Top 10 things that indicate you've worked at Capital Electric for 40 years

BY LES VIETZ

1. You know you have been there 40 years if you helped build a line to a pasture well, and end up retiring it and replacing it with underground to a Walmart and a shopping mall.
2. You know you have been there 40 years if you can remember serving an area with a 10-amp fuse and now it is being fed with a 600-amp switch.
3. You know you have been there 40 years if you see the change from climbing a pole to switch a line, and now you can do the same job with the click of a mouse on a computer.
4. You know you have been there 40 years if your key for the office is so wore out it is sharp enough to use as a wire stripper.
5. You know you have been there 40 years if the topic at the coffee table is, "Where is the social security office?"
6. You know you have been there 40 years if your vehicle inspection includes checking if you have toilet paper in the truck.
7. You know you have been there 40 years if you climb a ladder to lend a helping hand and the guy asks you, "What do you think you're going to do up here, old man?"
8. You know you have been there 40 years if you think about a retirement date and realize it is going to take a pickup and a trailer to get your stuff home that you accumulated over the years.
9. You know you have been there 40 years if you were involved in building or rebuilding every substation on the system.
10. You know you have been there 40 years if you started when there were 4,000 meters and now there are about 20,000 meters.

**Board minute excerpts
Thursday, Nov. 17, 2016**

The regular meeting of the Board of Directors of Capital Electric Cooperative, Inc., was held on Thursday, Nov. 17, 2016, at co-op headquarters in Bismarck, pursuant to due notice to all directors.

All the directors were present at that time except Dwight Wrangham.

Financial review: Prior to the Board meeting, Directors Eckroth and Hilken reviewed the October 2016 check register and expenditures. They reported all checks were in order. It was moved, seconded and carried to approve October expenditures in the amount of \$3,030,156.79.

Business Department report: The Business Manager presented the financial and statistical report with the Board. The total kilowatt-hour (KWH) sales for October 2016 are over budget by 2.53 percent. The actual monthly electric revenue is above budget by 13.43 percent.

Year-to-date KWH sales are under budget by 2.2 percent and electric revenue is under budget by .5 percent.

The total margin for October was \$169,743 in comparison to the budgeted margin of -\$48,920, above budget by \$218,663. The year-to-date margin is -\$1,175,910 versus the budgeted amount of -\$1,474,938, above budget by \$299,028.

Capital Electric began billing 44 new services in October, bringing our active services to 19,735 versus 19,109 at this time last year, or a net increase of 626 accounts over the last 12 months.

The Business Manager reviewed the comparison of actual-to-budgeted expenses, cash flows, and monthly power cost for the month of October 2016. Accounts receivable balances as of Nov. 16, 2016, were also reviewed.

Pasture wells: The Board reviewed the pros and cons of billing pasture wells monthly versus annually. It was the consensus of the Board to stay with monthly bills. Members can still prepay and use the credit amount against the bill if they choose.

Federal Financing Bank (FFB) loan advance: Our most recent loan advance was processed on Nov. 14, 2016, in the amount of \$2,000,000.

Cost of service study RFP: It was moved, seconded and carried to retain Power System Engineering to prepare a cost of service study.

Estate retirements: Following review of the financial condition of the cooperative and recommendation by management, it was moved, seconded and carried to authorize payment of capital credits to the following deceased members' estates:

Andrew Schultze	\$1,866.52
Toni Pochant	\$403.97
TOTAL	\$2,270.49

Engineering and Operations report: The Manager reviewed the written report from the Engineering and Operations department. We

completed 63 work orders this month, adding 90 new consumers to the system.

Fisher Contracting and Gieser Utility Contracting continue to trench in new services. VIP continues to work on overhead and rural rebuild.

November to-date outages were reviewed. We have been working with Central Power Electric Cooperative crews on the new substation on Williamson Drive in north Bismarck. We are going to take four distribution circuits out of this new substation and convert the three-phase under-build to three-phase underground just south of the new substation so Central Power can put in a switch structure. The new switch structure will be placed in line with the existing transmission line and will supply power to the new substation.

Crews worked with the University of Mary to move the CT enclosure closer to their main building. Crews also worked with Cenex on an after-hours outage to change their transformer. They also converted Cenex and the new Holiday gas station on the southwest corner of Centennial Road interchange to the new underground cable.

Member Services department: The Manager reviewed the member services written report.

Capital Electric headquarters addition – Vacant Lot 1: An unsolicited offer to purchase has been received from a local realtor group. Following discussion, it was moved, seconded and carried to authorize management to take steps required to evaluate a potential sale of Lot 1.

Communications and Public Relations department: Topics of interest were discussed with the Board.

Plans for co-op member involvement: We are looking to begin a member engagement and education program during 2017. Our plan is to recruit members who would like to get involved with the co-op to learn more about what we do and to provide feedback on the issues we face.

Safety report: There were no lost-time accidents this month.

Steve Homes, Safety Instructor from the North Dakota Association of Rural Electric Cooperatives (NDAREC), was at our shop on Nov. 9, 2016, for a field visit.

Without objection, the safety report was approved.

2017 Budget: The 2017 budget and budget assumptions were reviewed. It was moved, seconded and carried to approve the 2017 budget and to approve the advance of \$1.7 million in 2016 from FFB.

Policies: Following review, it was moved, seconded and carried to approve Policy IV-1 “PG” - Parallel Rate Generation, as amended.

■ Proposed Vacation/Holiday Leave Policy: Following discussion, it was moved, seconded and carried to approve this policy.

■ The Proposed Company-Owned and Employee-Owned Wireless Phone Policy was reviewed. It was moved, seconded and carried to approve this policy.

■ Policy No. I-12 Use of Technology and Electronic Communication was reviewed. Following discussion, it was moved, seconded and carried to approve the policy as amended.

NDAREC: Vilhauer presented highlights of the Nov. 8 meeting.

Vilhauer left at this point of the meeting at 11:50 a.m.

Strategic planning: The draft Action Plan was reviewed.

Board members will review and provide a response to the draft by the end of November.

Basin Electric Power Cooperative: The Manager reviewed the notes of Director Presser.

Land lease radar tower site: Negotiations are ongoing.

CoBank: A special meeting is scheduled for Dec. 16, 2016, to obtain stockholder approval of 1) Capitalization Bylaw Amendment; 2) Deferred Stock Revolver; and 3) Governance Bylaws Amendment. It was moved, seconded and carried to vote no on all three matters.

Mid-West: Fitterer was selected to serve as delegate and Wrangham as alternate to Mid-West. It was moved, seconded and carried to vote in favor of the Mid-West bylaw change.

Western Area Power Administration: Following discussion, it was moved, seconded and carried to authorize the General Manager to execute the current and future Western/Garrison Diversion Project Use Power contract revisions.

Adjournment: There being no further business to come before the meeting, without objection, the regular meeting was adjourned at 1:10 p.m. **CEC**

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