

MANAGER'S REPORT by Connie M. Shireman



Shireman

Director election

SAT/ACT review

The nominating committees for Director Districts 1, 3 and 4 have met and selected candidates for the office of director of Jo-Carroll Electric Cooperative. This election is a very important part of a cooperative, as the democratic election process in selecting the people to represent the various districts on the board of directors gives members a voice in the affairs of their organization. The director posts are for three-year terms and the election will be held by mail prior to the annual meeting.

The candidates are as follows:

District 1: Leonard Ricke (incumbent), 6100 Ricke Dr., East Dubuque; and Ambrose Roth, 17630 U.S. 20 West, East Dubuque.

District 3: Roger W. Schlichting (incumbent), 3170 N. Scout Camp Rd., Apple River; and David G. Hughes, RR 2, 1027 S. Apple River Rd., Elizabeth.

District 4: Clarence Glasker (incumbent), RR 1, 7013 S. Blackjack Rd., Hanover; and Tom Richmond, 10094 S. Crazy Hollow Rd., Hanover

The Rural TV satellite television programming package offers student viewers a chance to prepare for SAT/ACT college examinations through their satellite television receivers. The half-hour College Exam Review Series is divided into three parts and can be seen on channel F3-2, The Learning Channel.

Verbal Review for the SAT-PSAT

First Wednesday of each month—10 a.m. (central)

Repeated on the following Friday—5:30 p.m. (central)

Math Review for the SAT-PSAT

Second Wednesday of each month—10 a.m. (central)

Repeated on the following Friday—5:30 p.m. (central)

Math and English review for the ACT

Third Wednesday of each month—10 a.m. (central)

Repeated on the following Friday—5:30 p.m. (central)

We do hope you high school students will take advantage of this opportunity to sharpen your skills for this important event in your scholastic careers.

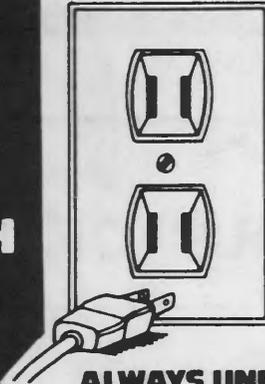
Jo-Carroll is continuing cash incentives

\$200 for any new dual fuel conversion

\$50 for any new electric water heater controlled by load management

Call 858-3311 for all details

**WARNING:
IF YOU THINK
THE POWER
IS OFF
WHEN THE SWITCH
IS OFF,
YOU'RE WRONG.**



**KEEP AWAY
FROM WATER.**

ALWAYS UNPLUG SMALL APPLIANCES.

Everyone knows that electricity and water are a dangerous combination. But did you know that an electric appliance is still electrically alive even if the switch is off? If the plug is in, the power is on. So when you keep appliances near water, keep them unplugged.

Public Service ad from Association of Home Appliance Manufacturers and Underwriters Laboratories, Inc.

Low voltage is still a danger

What causes electric shock?

Current's effect on the heart

A lot of people who would not go within 50 feet of a high-voltage power line fearlessly play around with 120-volt household current without giving a thought to whether it is dangerous or not. It is, and it can give a deadly shock.

About 1,000 people are electrocuted every year in the United States, and here is how some of these accidents happened:

- A do-it-yourselfer using a defective electric drill in the basement is electrocuted when he touches a metal laundry tub.
- A woman, whose basement was flooded by heavy rains, wades through the water to reach her freezer. She is electrocuted when she touches the lid of a shorted electric freezer.
- A child dies when he plugs one end of a detachable appliance cord into a wall socket and puts the other end in his mouth.
- Two children die when a radio falls into the bathtub where they are taking a bath. **Kay Fleener**

Actually, it's not the number of volts that causes shocks, but the amount of current (amperage) that enters the body, how long the shock lasts and the path which the current follows.

One milliamperere (1/1000th of an amp) passing through the skin creates a tingling sensation. Only seven to 10 milliamperes can rob you of muscle control so that you can't let go. One hundred milliamperes (just 1/10th of an amp) can kill if the shock lasts for one second or longer.

Usually, the current passes in a hand and out of a foot, which may not be too bad. The real danger lies when the current passes in one arm, through the chest area and out the other arm. When this occurs, the current can paralyze the respiratory muscles, causing breathing to stop.

Such paralysis may last even after the person is disconnected from the electrical source. Too, the current can strike the heart, causing fibrillation, resulting in instant electrocution. The heart goes into unsynchronized fluttering cutting off blood and oxygen circulation to body cells, including the brain.

Because the way electricity works, low voltages surprisingly can be more dangerous than high voltages. A heavier jolt can "clamp" the heart and prevent fibrillation. People have been known to recover from comparatively large jolts of electricity, while smaller amounts, under certain conditions, can kill.



NRTC
Member



JO-CARROLL ELECTRIC COOPERATIVE

SATELLITE DISH NEEDED

\$15.00 HOOKUP FEE

CHOOSE YOUR OWN PROGRAMMING

HBO/Cinemax/Disney — All three — \$20.95 per mo.

Disney — \$7.95 per mo.

HBO/Cinemax — \$14.95 per mo.

HBO — \$7.95 per month

HBO/Disney — \$14.95 per mo.

Cinemax — \$7.95 per mo.

Cinemax/Disney — \$14.95 per mo.

SELECTV — \$9.95 per month

Starion Premier Cinema — \$9.95 per mo.

Basic Package — \$9.95 per month

WGN Superstation-Chicago

WPIX Superstation New York

CBN Network

CNN Headline News

Lifetime

The Nostalgia Channel

The Travel Channel

Nickelodeon

KTVT Superstation Dallas

USA Network

CNN News

ESPN All Sports Network

Country Music TV

The Learning Channel

The Weather Channel

The Nashville Network

WTBS Superstation Atlanta — \$19.95 per year

Prime Time 24 — \$3.95 per month

WABC-ABC New York / WBBM-CBS Chicago / WXIA-NBC Atlanta

Special Offer—New subscribers in February and March of 1989 will have free hookup, a savings of \$15.

ALSO, Jo-Carroll's programmer, NRTC, has offered to give new subscribers to Rural TV a one-month, two-for-the-price-of-one package of HBO/Cinemax for \$7.95.

During February and March of 1989, a new subscriber can receive HBO/Cinemax for one month for only \$7.95, a savings of \$7, and can be hooked-up free of charge, saving \$15.

Power surges and home hi-tech

Ever notice all of your digital clocks suddenly flashing "12:00" and it's not lunch time? You probably had a power interruption.

Normal power interruptions we would never even have noticed before can now disrupt our use of computers, video recorders and the other sophisticated, electronic devices we have in our homes.

There is a variety of devices available for protecting your equipment. Knowing something about the power interruptions that are a normal of any utility's operation can help you choose the right protection.

A routine power fluctuation of less than 30 milliseconds can cause computer memory loss and even costly equipment damage. Your eyes, on the other hand, wouldn't even notice a power outage unless it was longer than 500 milliseconds, which is one-half of a second.

Transients are brief power impulses called spikes or surges. Sensitive electronic recording equipment is often needed to identify these problems because they don't last long enough for you to see them. These brief spikes can push voltage levels five to 10 times above normal.

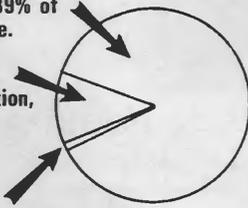
There are four main kinds of power disturbances that can effect elec-

What made my lights flicker?

Power surges or electrical noise, 89% of the time.

Voltage fluctuation, 10.5% of the time.

Power outage, 0.5% of the time.



Power surges and electrical noise are the most common type of power disturbance. Although they may last such a short time you wouldn't even notice, protective devices should be installed to protect sensitive equipment.

Protecting electronics from electrical disturbances

Office hours

7:30 a.m. to 4 p.m.
Monday through
Friday

Outages and emergencies

call 858-3311
24 hours a day

Reader prize

Each month, we print the name of a Jo-Carroll member who is eligible to win a monthly \$25 readership prize. If your name is printed in this month's edition, and not a part of any story, contact Jo-Carroll and claim your prize no later than the 10th of the month following publication.

tronic equipment—transient disturbances, noise, voltage fluctuation and power outages. Transients and noise account for nearly 90 percent of all power disturbances.

Transients can cause computer programs to stop running, erase data stored in memory and damage computer hardware.

The most common cause of low-level transients is the switching on and off of electric motors, such as air conditioners and fans. Very large transients are generally caused by lightning.

Electrical noise can be created by radio transmissions, fluorescent lights and light-dimming systems. Noise can cause unexplained "glitches" in computer programs.

Voltage fluctuations are usually indicated by flickering or dimming lights, or a shrinking computer display screen. Low or high voltage can result from overloaded circuits or the starting of large electric motors. Continued fluctuations can cause early failure of internal electronic parts and errors in data storage and retrieval.

Power outages involve the total interruption of electricity and generally results from damage to the utility lines or from circuit overloads in the home. Although power outages are the least common type of system disturbance, the effects on computer operations can be devastating. When power is unexpectedly interrupted, computer programs stop working. System "crashes" can occur, resulting in irretrievable losses of data and time-consuming reprogramming.

And remember, with even more electrical equipment being installed in our homes, you may be suffering from "low house power." That's the condition that exists when your home's electrical service and wiring are not adequate to handle all the load of the modern home.

If you have questions on power interruptions or want more information on how to protect electronic equipment in your home or business, contact the member services department at your electric cooperative.

You can protect your home computers and other sophisticated electronic equipment from the kind of routine electrical interruptions you wouldn't have even noticed a few years ago. There are two main kinds of protection: power enhancement and power synthesis devices.

Power enhancement equipment simply improves the incoming power. Power synthesis equipment uses incoming utility power to create an isolated supply of electricity.

Power enhancement systems reduce or eliminate the effects of electrical "noise," transient surges or spikes and voltage variations.

Surge or spike suppressors are the least costly enhancement devices that can be used, ranging from \$20 to \$40. They protect equipment from high-voltage impulses. However, they do not provide protection from long-term "overvoltage."

Another enhancement device is a power conditioner, which consists of a voltage regulator, an isolation transformer and a spike suppressor combined into one unit. A power conditioner can also regulate voltage levels and control noise. These units range in price from \$200 to \$1,000.

Power synthesis devices can provide complete protection against all types of power disturbances.

A motor generator is a synthesis device that uses an electric motor powered by the utility that in turn operates a generator to provide power for electronic equipment. These devices provide effective protection from noise and voltage transients but do not protect against power outages.

Uninterruptible power supply systems are synthesis devices designed to provide continuous protection from all types of power line disturbances and interruptions. Critical equipment is protected by a system of batteries, inverters and rectifiers that directly provide power to the computer's power supply. Although uninterruptible systems offer the ultimate in electronic system protection, they can be expensive.

Jo-Carroll Hi-Lines

Jo-Ca

Jo-Carroll Electric Cooperative, Inc., Elizabeth, Illinois — (815) 858-3311

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Shireman

The annual meeting of the members of Jo-Carroll Electric Cooperative will be Saturday, March 11, at 1 p.m. at the Mt. Carroll High School in Mt. Carroll.

The business meeting starts at 1 p.m., but members should come in early for the cooperative-provided lunch, which is prepared and served each year by the Jacobstown Community Club. This year will mark the 40th year that Jacobstown Club has prepared Jo-Carroll's lunches, which are always delicious.

Lunch starts at 11:45 a.m., and we have a local band from the Savanna area, the Blendonaires to entertain during the lunch period. They will begin their show at 11:30 a.m.

Also, an early bird prize of \$50 electric bill credit will be awarded just before the band starts, so don't be late!

The business meeting will include the reports of officers and manager of the cooperative. This year we will have a guest speaker from Arkansas who really promises to be exciting. Each member in attendance will be given a two-pound bag of Teelee Popcorn as an attendance prize, and as always we will draw for some excellent gifts. All in all, it should be a nice day. The members of the cooperative should make every effort to attend and take part in the affairs of the business that they collectively own.



Attendance prizes

The attendance prize at this year's annual meeting will again be a commodity that reflects the bounties of our service area. In the past we have given away cheese from Warren, honey from Jo Daviess County, and this year we are proud to give a two-pound bag of Teelee Popcorn. This firm is located in Shannon, and some Jo-Carroll members raised the popcorn on their farms.

R.G. Byers to speak



R.G. "Dick" Byers

R.G. "Dick" Byers will be the featured speaker for this year's annual meeting in Mt. Carroll. Byers has often been referred to as "The Electrical World's Billy Graham." His humorous and unconventional presentation promises to keep any audience, ages 9 to 90, interested and entertained.

Dick Byers is well versed in the rural electric cooperative tradition. He has spoken across the nation at more than 300 annual meetings.

Byers is a speaker the whole family will enjoy. His enthusiasm for his country and rural electric cooperatives is contagious. He is well worth the trip to Mt. Carroll.

Dick Byers says he knows and loves people, especially rural people. This is a love gained in 38 years of promotional work for Frigidaire, where he held positions as promotion manager, merchandising manager and major markets manager. He is now retired and lives in Bella Vista, Arkansas.

Prior to his work for Frigidaire, Dick Byers had a distinguished military career during World War II. He entered the service in 1942 and ended up flying 53 missions in B24 bombers for the 9th Air Force in Africa. He has recently published a book about his service experience entitled, "Death in the Sky Over the Middle East."

BE WARNED — Dick Byers' presentation is unconventional. Only the brave may sit in the front row seats at the annual meeting. Regardless where you sit at the meeting, you will come away inspired with your own role in the rural electric program, in your nation and in its destiny. **Lee Anderson**

This photo of the Jo-Carroll Electric Cooperative office was taken in the early days of the co-op. In September of 1939 the first office was established in the old Elizabeth Post Office building. Jo-Carroll's headquarters remained here for many years, until 1984 when the cooperative's headquarters moved to the new facility on Highway 20, west of town.



Remember when?

Jo-Carroll's 50th anniversary celebration will be June 10-11. The celebration will be held at the cooperative's headquarters and will feature building tours, refreshments, attendance awards, prize drawings, and a video tape celebrating Jo-Carroll's 50 years. A commemorative booklet is being prepared and will be mailed to all Jo-Carroll members.

Fifty years is a milestone that any organization can be proud of. The early pioneers and the many dedicated members and employees of Jo-Carroll have strived through the years to serve the growing membership. The 50th anniversary weekend in June will commemorate these dedicated individuals, and all of Jo-Carroll Electric's members should make every effort to attend.

Annual Meeting Member's Bargain Table

Name Brands Include:
Hamilton Beach, Proctor Silex, Presto, West Bend, Northern, Sunbeam, Vidal Sassoon, Jameston, Magnavox, Carol, Wester, ABCO, Wood, Sears, Skil, Duracell.

* Price does not include sales tax. Possible other select items to choose from on availability basis. May be paid by cash or personal check made out to local cooperative. Shopping bags provided for your convenience. Limited availability of some Bargain Table items. Cooperative has right to substitute.

Description	Suggested Retail \$	Cooperative Member Sale Price*
Can Opener/Knife Sharp/Bag Opener	\$18.95	\$14.75
Handmixer	\$17.95	\$13.25
Quick Drip Coffeemaker — 12C	\$29.95	\$15.50
Salad Shooter	\$49.90	\$27.00
Potpourri Pot	\$18.99	\$10.70
Hot Pot	\$18.95	\$10.50
Food Chopper	\$32.25	\$16.00
Food Processor	\$56.50	\$26.75
Heating Pad	\$21.20	\$11.90
Toaster — 2 Slice	\$17.95	\$13.45
Blender	\$28.00	\$21.00
Moist Heat Band	\$22.95	\$16.00
Brass Quartz Clock	\$24.95	\$13.45
Blow Dryer	\$17.95	\$11.50
Smoke Detector — Battery	\$12.00	\$ 5.50
Clock Radio — AM/FM	\$21.95	\$16.85
Extension Cord — 25'	\$ 9.00	\$ 4.40
Lamp Converter	\$11.95	\$ 7.30
Long Life Light Bulbs/130V (4-PAK) (40,60,75,100W Sizes Available)	\$ 3.50	\$ 1.65
Work Light	\$17.00	\$10.75
Jig Saw	\$54.99	\$34.50
Cordless Screwdriver	\$29.99	\$18.00
Cordless Drill	\$49.99	\$38.00
Battery — 9 Volt (6-Pak)	\$10.15	\$ 7.75
Battery — AA (12-Pak)	\$ 9.45	\$ 5.80
Juicer	\$25.50	\$11.50
Electric Skillet — 11"	\$39.95	\$21.75
Circular Saw	\$61.99	\$41.25

Annual Meeting Program

11 a.m. to 12:45 p.m.
Registration

11:30 a.m. to 12:45 p.m.
Music by the Blendonaire

11:45 a.m.
Drawing for Early Bird Prize of \$50 credit on an electric bill

11:45 a.m. to 12:45 p.m.
Lunch

Box lunch furnished by your cooperative, prepared and served by the Jacobstown Community Club.

1 p.m. - Call to Order Richard Reusch,
President

Pledge of Allegiance to the Flag

1:05 p.m. Invocation Rev. Orville Cole
Fairhaven United Methodist Church of Chadwick

1:15 p.m. Welcome Address Ray Bailey
Mayor of Mt. Carroll

1:20 p.m. Introduction of Special Guests
and employees Connie Shireman,
General Manager

Introduction of Board Richard Reusch

Reading of Notice of Meeting Leonard Ricke,
Secretary

Reading of Minutes of
Last Meeting Leonard Ricke

Report of Officers:

President Richard Reusch

Treasurer John Janssen

Manager Connie Shireman

Special Guest Speaker R.G. "Dick" Byers

Report of Nominating Committees Chairman, Credentials and
from Districts Election Committee

Director Election Charles Van Sickle, Attorney

Awarding of Attendance

Prizes Helen Spencer and Richard Larimore

Waterlogged pumps can produce unnecessarily high electric bills

Does the pump on your pressure water system start almost every time you run water? If it does, then the pressure tank is probably suffering from a common ailment known as "waterlogging." In other words, it is too full of water.

It is necessary to have a cushion of air above the water. The air is compressed as water is pumped into the tank and expands as water is withdrawn. The larger the air cushion, the more water the tank can deliver between any given extremes of pressure.

Most farm water systems have pressure switches adjusted to start the pump when the pressure drops to 20 pounds and stop it when it reaches 40 pounds. A 42-gallon pressure tank, the size used in many farm water systems, can deliver about seven gallons of water between pressures of 40 and 20 pounds.

The size of the air cushion will not remain constant. Water absorbs the air, so eventually the air cushion becomes so small that, by even drawing a very small amount of water, it will cause the pump motor to start and stop.

Manufacturers have devised various methods to solve this problem. One method is to have an air valve controlled by a float inside the pressure tank.

When the water level in the tank rises too high, the float opens an air valve and permits the pump to "sniff" the air, which is carried into the tank with the water.

Should the valve core begin to leak, do not replace it with an auto tire valve core. The auto tire core has a much stronger spring and the pump cannot suck air through the water.

Frequent starting and stopping also causes undue wear on the pump and motor.

Allowing the water pump to operate in a waterlogged condition means an unnecessary maintenance expense and a much higher electric bill.

Rob Headlee completes apprenticeship



Headlee

Rob Headlee, who has been employed with Jo-Carroll since July 1986, completed his apprenticeship training in January. The process of becoming a journeyman lineman is a four-year, on-the-job-training program. The title journeyman lineman certifies that an individual is competent in all phases of electrical line work.

Rob, who lives in Elizabeth with his wife, Julie, is originally from Davenport, Iowa. He attended Northwest Iowa Technical College at Sheldon, Iowa, and is a graduate of the Powerline Installers Program.

Rob has worked in several areas of Jo-Carroll's operation and has been on a pole change crew for the last several months. Rob says, "I really enjoy working for Jo-Carroll. I like the people, and my wife and I both like this area very much."

Office hours

7:30 a.m. to 4 p.m.

Monday through Friday

Outages and emergencies

call 858-3311 24 hours a day

Reader prize

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Jo-Ca

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Shireman

**Let us
hear
from you**

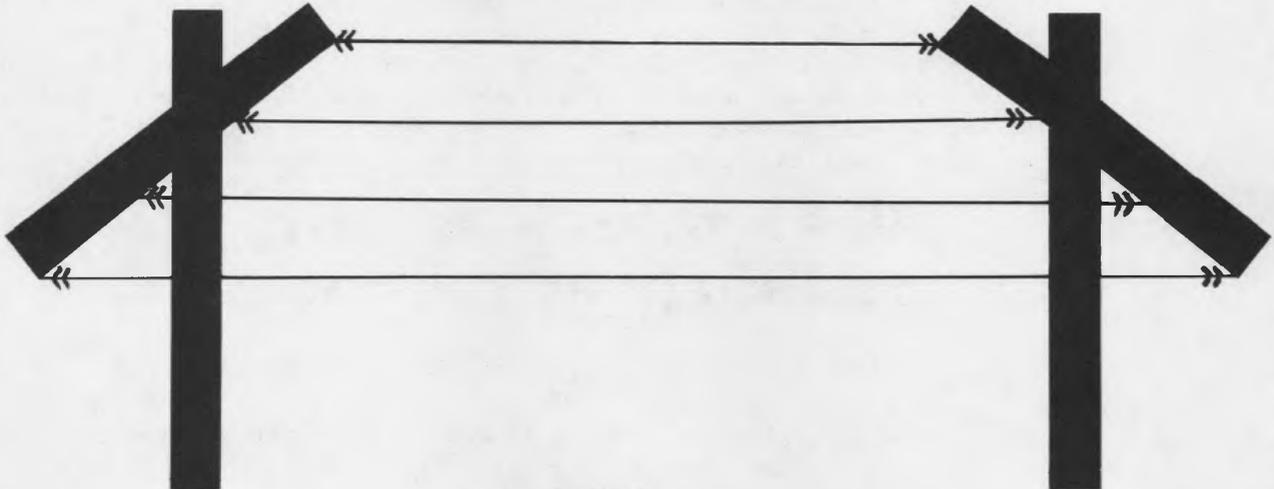
Keeping the members of a cooperatively owned business informed about the progress and activities of their business is an important task. As both members and owners, you have the right to know about progress of the cooperative. Jo-Carroll attempts to keep our members informed by the center pages of this magazine, bill inserts, the local media, and at the annual meeting.

Also, as owners, the members of Jo-Carroll have a say in how the co-op is operated. Your democratic right to vote for the directors in your local district means that your area is represented at each board meeting. The manager and staff of the cooperative are easily accessible at the headquarters building in Elizabeth, and members can keep in touch by either dropping by or through a phone call.

Sometimes in this busy lifestyle, it is difficult to find time to drop by the office, and many people work during our office hours. With this in mind, I am including the following form to invite all of the co-op's members to "speak their mind" about Jo-Carroll. Please feel free to jot down your comments, ideas, or suggestions. If your comment or question needs a personal reply, please include your name, address, or phone number and we'll get back to you. We will address the more general comments in future issues of the Jo-Carroll "Hi-Lines."

Open line to the manager

Questions feedback, new ideas—we want to hear from you.



Mail to:
Jo-Carroll Electric Cooperative
c/o Connie M. Shireman, Manager
P.O. Box 390
Elizabeth, IL 61028



Remember when

The Jo-Carroll line crew in 1964 during Jo-Carroll's 25th anniversary year in front of the old Pierce blacksmith's shop, which the co-op had purchased for storage. The crew consisted of nine linemen at that time, two of which, Dennis Wurster and Vic Mason, are still employed at Jo-Carroll. The cooperative now employs 16 linemen and operates from a modern headquarters building in Elizabeth. The celebration of Jo-Carroll's 50 years of service will be on Saturday, June 10, from 10 a.m. to 4 p.m., and Sunday, June 11, from 1 p.m. to 5 p.m. with an open house at the new building. The celebration weekend will include building tours, attendance prize drawings. A booklet commemorating Jo-Carroll's 50 years will be mailed to all Jo-Carroll members prior to the open house.

When there's an outage, it's lonely at the top

1:20 a.m.

A lot of things would be more comfortable than perching 30 feet atop a utility in a wind chill of 20 below. Dozing under a thick quilt comes to mind, but there's a lot of people down there who need heat in their homes, lights that shine and clocks that run. When the call comes, it doesn't matter if there's ice, snow, wind or sunshine. Electric service must be restored.

Even before the storm has stopped howling, the line crews of your electric cooperative are working with all the speed and skill of their many years' experience. Power must be brought back quickly, but safety must be the top priority. Our crews do their best in all weather conditions so that you have all the necessities and comforts that electricity provides.

Richard Vervaecke



Electric water heaters best buy

Water heating is the second largest user of energy today, and the following facts are important to know before a water heater is purchased:

- Electric water heaters need no flue, nor do they use air for combustion, therefore they can be installed close to where the hot water is being used. Not only does this minimize heat loss from the hot water pipes, it also shortens the waiting time for hot water when the faucet is turned on.

- Electric water heaters are rated at 100 percent operating efficiency because the electric element is immersed in the water so that all electric energy goes into the water. Electric water heaters have more insulation.

- A U.S. Department of Energy study projects that by 1996, most electric water heaters will cost less than gas or oil water heating.

- Electric water heaters have a good safety record. A report from the Fire Analysis Division of the National Fire Protection Association records the following:

Water heater home fires (1985)

Gas-fueled	10,100
Electric-powered	1,500

Water heater fire deaths (1985)

Gas-fueled	57
Liquid-fueled	8
Solid-fueled	0
Electric-powered	0

Water heater fire property damage in 1985 (in millions of dollars)

Gas-fueled	\$78.9
Liquid-fueled	\$5.3
Solid-fueled	\$0.2
Electric-powered	\$8.6

Jo-Carroll members can save \$3 per month by participating in the cooperative's water heater control program, and members can receive a \$50 rebate for installing a new electric water heater controlled by load management. Call 858-3311 for details.

The pallid romance of the quiet car

By Web Allison

Who forgot to plug in the car last night?

This is an outburst that may soon be commonplace in the American household. The reason is, of course, the interest in reviving the electric auto. I say "interest" because there is the likelihood, if and when, the family car will refresh itself at night in the garage through an umbilical cord to the closest outlet, to the tune of three or four thousand kilowatt-hours a year.

As the knowledgeable tell us, the electric car started out fast in the horseless carriage race, around the turn of the century. Recently, I came across a moldering old file in my forget-me-nots that included my college fraternity photo, the lyrics to "Stardust," the winning recipe in the great chili cook-off in Terlingua, Texas in 1962, and a most interesting article on the subject at hand, the "Electric Vehicle History," by Claud R. Erickson in Public Power magazine, September 1966.

Mr. Erickson reminds us that the electric car appeared to be the winner in the first years of the auto industry, competing against steam and gasoline. In 1899, for instance, McClure's magazine visualized "country touring stations ... long rows of vehicles will stand backed up comfortably to the charging bars, each with its electric plug filling the battery with power."

What, then, happened to the electric car? It had some very sound features — simple to operate, reliable and sturdy. The usual explanation mentions the cumbersome batteries, the limited driving range, and the minimal speeds, along with the improvement in gas-powered cars, such as the self-starter.

But Mr. Erickson in his article suggested something further: "Another reason for the demise of the electric car market was that it lacked excitement, which in its day was a very important factor. The electrics were actually too dependable, too quiet and too clean. The men of that day drove a car not simply as a means

of transportation but as a sport or hobby. They liked to hear an occasional backfire, and they liked the occasional breakdown."

So here is perhaps the major reason, according to Mr. Erickson, the electric auto failed to capture its market. The American male in those days was not seduced by the humming little runabout that reminded him of little old ladies in tennis shoes.

It may still be so. Just recall last Memorial Day, after you, a sober, sedate citizen, had hung out the flag and mowed the lawn, then relaxed in front of the TV and tuned in on the start of the Indianapolis 500. Remember that wave of goose bumps that chased up your backbone when the starter bellowed, "Gentlemen, start your engines!" and the drivers revved their little beasts into a full-bellied thunder. Even today, the very names of our autos — Cougar, Bronco, Cavalier, Mustang, etc. — are chosen to tease us with the promise of swashbuckling adventure. My firm guess is that you'll never see a car on the market named, for instance, "Three-Toed Sloth" or "The Warthog" or "Duckbilled Platypus."

Our young people in particular won't easily trade the tiger in their tanks for a stealthy pussycat of an electric automobile. They want to slip behind the wheel of something that at least looks like it could go VVVVVVVVRRRRROOOOMMMM.

American drivers of the future will probably make some sort of switch to the electric automobile simply because they can no longer live and perpetuate themselves in a haze of the carbon monoxide.

But they won't like it.

Web Allison is a columnist and cartoonist for Rural Electrification Magazine and editor for the San Luis Valley rural electric co-op in Monte Vista, Colorado. Reprinted with permission.

Living expenses

Have you ever asked yourself: "What happens to all my time?" These figures from the Tax Foundation, Inc. may help shed some light on the length of time the average U.S. taxpayer works each day to meet some typical living expenses:

Taxes	2 hours 52 minutes
Housing	1 hour 29 minutes
Food	1 hour 1 minute
Miscellaneous	47 minutes
Transportation	41 minutes
Clothing	22 minutes
Medical	20 minutes
Recreation	19 minutes
Electricity	9 minutes

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Monday through Friday

**Outages and emergencies
call 858-3311 24 hours a day**

Jo-Carroll Hi-Lines

Jo-Ca

Jo-Carroll Electric Cooperative, Inc., Elizabeth, Illinois — (815) 858-3311

MANAGER'S REPORT by Connie M. Shireman



Shireman

Annual meeting

The 50th Annual Meeting of Jo-Carroll Electric Cooperative was a resounding success. More than 575 members and guests were in attendance at Mt. Carroll High School Saturday, March 11, and a good time seemed to be had by all. The cooperative thanks each of those in attendance for taking an active part in the affairs of their cooperatively owned electric system.

This issue of the Jo-Carroll Hi-Lines includes a report on the activities of the day. The results of the mail-in director election are also included in this month's magazine. As you will read, we welcome a new director to the Jo-Carroll board this month, David Hughes. We are sorry to lose Roger Schlichting, who has been an excellent director for the past six years, but we feel David will do a fine job in his place.

David is a life-long resident of Woodbine Township, and David informs me that the land has been in the Hughes name for more than 120 years. David and his wife, Merri, farm, and David works at other "handyman" types of jobs. They raise



Results of the board of directors election were announced during the 50th annual meeting of members of Jo-Carroll Electric Cooperative. The meeting at Mt. Carroll High School drew more than 575 members and guests March 11. Manager Connie Shireman, right, welcomes newcomer David Hughes of Elizabeth to the board. From left are incumbents Clarence H. Glasker of Hanover and Leonard H. Ricke of East Dubuque, who were re-elected.

The early years

mostly hay and corn, for their cow-calf operation.

The Hughes have three children, Lisa, who will graduate from college this spring; and Scott and Carrie, who are living at home and attend school at Stockton. David looks forward to his new position as a director for an electric cooperative and said, "There is a lot to learn, and I am very interested in becoming educated in the details of Jo-Carroll so I can represent the people of my district." District No. 3 includes all or parts of East Galena, Guilford, Thompson, Rush, Rice, Elizabeth, Woodbine, and Stockton Townships. David's district will also include parts of the Galena Territory and Apple Canyon Lake.

Jo-Carroll Electric Cooperative members will have a chance to meet David and the other board members as well as take tours of the headquarters building and view a 50th Anniversary video tape during the 50th Anniversary weekend. Please mark your calendars for Saturday June 10, from 10 a.m.-4 p.m. and Sunday, June 11, from 1-5 p.m. Attendance prizes and refreshments will be offered, as well as drawing for grand prizes. We are hoping for a large turnout of Jo-Carroll members to help us celebrate this milestone in the cooperative's history.

The early years of Jo-Carroll Electric Cooperative were recalled during the cooperative's 50th annual meeting March 11, but the half-century commemoration also looked back on a very busy year of construction in 1988.

The meeting drew more than 575 members and guests to the Mt. Carroll High School gymnasium in Mt. Carroll. A highlight of the meeting was word that, due to effective budgeting and successful load management programs, there will be no rate increase in 1989.

Manager Connie Shireman told the gathering that approximately 200 new services were installed by Jo-Carroll line crews during the past year—a 20 percent increase over 1987 and a much larger rise above the number of services connected in 1985.

"The cooperative's service area continues to grow and develop," Shireman said. "We are fortunate to have a considerable amount of new home construction."

The manager reported that Jo-Carroll completed a large construction project in the Pioneer Acres area near East Dubuque last September. Cooperative crews installed overhead lines in the area, which had previously been served by underground cable. Rocky soil had prompted the change to overhead lines.

Shireman also noted that members experienced a significant drop in power outage time in 1988 as compared to the year before. Several factors contributed to this decrease. Mild weather and improvements in Dairyland Power Cooperative's transmission outage average were among the reasons cited. Dairyland generates and transmits electricity to Jo-Carroll. Replacement of poles and line, and the clearing of tree branches from cooperative wires added to the reduced outage time.

The manager spoke about the more than \$60,000 in energy grant money that went to a segment of Jo-Carroll members last year. The cooperative, she said, has worked closely with the Illinois Department of Energy and Natural Resources to make these funds available to qualified members for home energy improvements.

A slide presentation narrated by the manager reviewed Jo-Carroll's history, comparing early facilities and equipment with those of today.

Board President Richard Reusch touched on the concept of cooperation as it applied to Jo-Carroll's founding in 1939 and how it affects today's members.

"Fifty years ago," he said, "the pioneers in this area took a chance. They gambled that by working together, they could bring the lights of the city to the rural homes and farms...Over the years, the cooperative has seen many changes, yet its goals remain the same. The cooperative strives to provide a dependable supply of electric energy and quality services to meet the needs of consumer-members at the lowest possible cost."

Reusch acknowledged that times are difficult for many Jo-Carroll members, as they were in the 1930s. **Don Volton**

"Electricity costs more than it used to, and I can't tell you that energy costs are going to decrease, but I can tell you that your cooperative directors and I are confident that wholesale power costs have stabilized and should remain relatively con-

stant through the rest of this century," Reusch said. "This is particularly good news, as a major portion of all cooperative revenue goes to pay the monthly wholesale power bill."

The results of the election of three members to the Jo-Carroll board of directors was announced during the business meeting, ballots having been cast by mail by the cooperative membership.

Re-elected were Leonard H. Ricke of East Dubuque, District 1; and Clarence H. Glasker of Hanover, District 4. New to the board is David Hughes of Elizabeth, District 3, who received more votes than incumbent Roger W. Schlichting of Apple River.

Following the members meeting, the board reorganized with no changes in the positions its officers hold. Serving another term as president is Richard Reusch. Charles M. Flikkema of Lanark is vice president. Leonard H. Ricke is secretary and John W. Janssen remains treasurer.

Jo-Carroll Electric Cooperative provides electricity to more than 4,200 members on 1,006 miles of line in Jo-Davies and Carroll counties.



Safety Certificate Presented

An outstanding record of safety has earned Jo-Carroll Electric Cooperative certification through the Rural Electric System Safety Accreditation Program. The certificate was presented during the cooperative's 50th annual meeting of members March 11 at Mt. Carroll High School, Mt. Carroll. Randall Rings, right, staff attorney for the Association of Illinois Electric Cooperatives, makes the presentation to Donald Schleicher, a Jo-Carroll lineman. Certification is based on a cooperative's safety record over the past three years. The cooperative undergoes a lengthy investigation, covering such areas as board policy of safety, employee education and training, maintenance, repair and work procedures. A very low injury-frequency rate must also be maintained during the three-year period in order to qualify. Each year, only a few cooperatives nationwide receive this special honor for their safety records. This safety accreditation program is sponsored by the National Rural Electric Cooperative Association, based in Washington, D.C.

Can you help?

Because of the non-profit cooperative nature of Jo-Carroll Electric, every dollar of payment by our members in excess of the cost of providing electric service is an investment in the cooperative. This investment is termed capital credits. All cooperative members are entitled to capital credits when the board of directors authorized the retirement, or return, of these capital credits. The Jo-Carroll board has authorized the retirement of capital credits for the past several years.

People who received electric service from Jo-Carroll in the years 1959 through 1965 have had the capital credits that were allocated to their accounts retired. Many of these members have received their capital credit checks. The capital credit retirements is one of the cooperative's most tangible evidence of true ownership in its electric utility.

Although Jo-Carroll has returned \$458,920.71 in capital credits, some of the former members are no longer at the addresses that we have on file. If you know addresses of the people listed below, or names or addresses of the relatives of the people listed below, please let us know as we have capital credit checks for them. Please address your correspondence to Helen Spencer, Jo-Carroll Electric Cooperative, P.O. Box 390, Elizabeth, IL 61028 (815) 858-3311.

John Allock
Mrs. Joseph Anderson
Frank Armistead
Milo Adleman
Ruby Bantista
James Beasley
W.H. Bowman
Harry Bouras
Donald Bruce
Mark Benny
Phillip Blycher
Lloyd Brock
Franklin Bell
Lorence Bauman
Joseph Baker
George Burkart
Ella Buck
Field Barnes
Elkanak Beaver
Edgar Beach
Amy Benda
Richard Bresse
James Browning
Vance Bittol
Joseph Berger
Joseph Baker
James Blythe
Ed Carlson
Dorrance Coyle
Robert Crackle
John DeBord
Barry Carroll
Laurence Brury
Ed Dalsing
Drake Bros
F.J. Eckel
Kenneth Ellis
Edward Edwards
Wm. Eversoll
Vern Eversoll
Fred Evans
Wallace Elsbury
Mary Edwards
Donald Fitzgerald
Robert Fulrath
Frederick Cement
Block Co.
Carl Freiderickson
Marshall Field
Franklin Freiburger

Rufus Freiburg
George Green
Goerge Goodwin
Gordon Gibbs
Alexander Gardner
Leonard Ginter
John Gaines
Jay Gantenbein
George Gotschall
Derre Goudreau
Wilbur Grossnickle
M.P. Geraghty
Ned Goldmacher
Pierre Gombert
Leonard Ginter
James Hodges
Paul Humphries
Roger Higgins
Mike Haney
Laurence Haupt
Clarence Hartson
John Harper
John Helt
Agnes Holy
Frank Harle
Wm. Haskens
Jean Howland
Vincent Hoftender
Charles Henebough
Clifford Hastings
George Haarman
Margaret Hendrick
Harry Hartleb
Jerry Izer
H. Joseph
Fred Jelderda
Sam Jones
Raymond Jeffrey
Emmett Kelley
Bernard Kelseu
Rose Kinney
Peter Kellogg
Leo Klass
George Kensinger
Peter Kasperek
Eldon Kaufman
Bill Kreisler
Gene Kelley
Harold Kierman
Cecil Kitson

Robert Latham
Arthur Lawrence
John Lock
James Levy
Harvey Lowe
Robert Leibenow
Richard Long
Wm. Leitzen
Paul Meany
Nelson Merchant
Dave Muhlenkaupt
Harold Morgan
John Moore
F.E. McFarland
John Mueller
John D. Miller
Helen Merchuck
Howard Massa
George Mitchell
Frank Matsuka
Robert Meana
Dwight Nicol
Paul Nowak
Carol Niles
Rachael Nelson
Wilbur North
Robert O'Niel
Ore Mining Co.
Richard Orford
Robert Ohlgart
Ralph Price
David Pence
L.A. Peley
Richard Pszanka
Donald Potter
Harry Peterson
Aaron Pieper
Wm. Paschal
Frank Pascoe
Moore Peregrine
James Redman
Silas Reynolds
Mary Rauwolf
Reuben Richardson
Merlin Roling
Edward Rios
Henry Raynolds
Ryan Inc.
Steward Richards
John Roddewig

Howard Robinson
Ronald Scheffert
George Salsler
Fred Shuck
M.G. Schweitzer
Howard Swift
Charles See
John A. Speer
Fred Schnell
Robert Stenstrom
Ed Sharpe
Ivor Smith
Harry Slouburg
Donald Sutton
Gus Smith
Douglas Seelye
Robert Smith
Harold Stoecker
DeWayne Storla
Frank Sarazin
S&L Muffler Co.
R. Paul Smith
Ray Tryba
Glenn TeSelle
Howard Thompson
Herman Targe
Oscar Tessendorf
United Electric
Nelson Virture
Wm. Van DeGejuchte
Bertha Virture
Howard Wills
Russell Wolf
Robert Weams
LaVerne Wullweber
John Wagoner
Lee Wallace
James Walters
Mildred White
H.R. Weis
Arnold Wiersema
Ed Weber
Wm. Weime
Harold Welcher
Joanne Wubben
Herman Yeager
Wm. Zaroff
Saddie Zewiski

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MANAGER'S REPORT by Connie M. Shireman



Shireman

Celebrate Jo-Carroll's 50 years

The booklet commemorating Jo-Carroll's 50 years of service to our member-owners will be mailed this week. I hope that everyone will take time to read this history of how a small group of people were able to take matters into their own hands and provide themselves with a much needed service.

The booklet will be of interest to many of our long-time members who remember living without electricity, and were involved with the struggle to electrify the rural areas of Jo-Daviess and Carroll counties. Our newer members, who have been in this area for only a short time, will also enjoy reading the history of their cooperative. Many of our newer members from the urban areas may not be aware of our beginnings, and the booklet will be quite informative for them.

I hope that both new and longstanding members will join us for the open house weekend. We have prepared a videotape that will be shown, and plan to serve refreshments and offer prizes. Also, since as members of Jo-Carroll, you are also owners, the tour of the cooperative's headquarters will be of particular interest.

The dates for the open house are Saturday, June 10, from 10 a.m. to 4 p.m. and Sunday, June 11, from 1 p.m. to 5 p.m. I hope that all of Jo-Carroll's members will be able to make it.

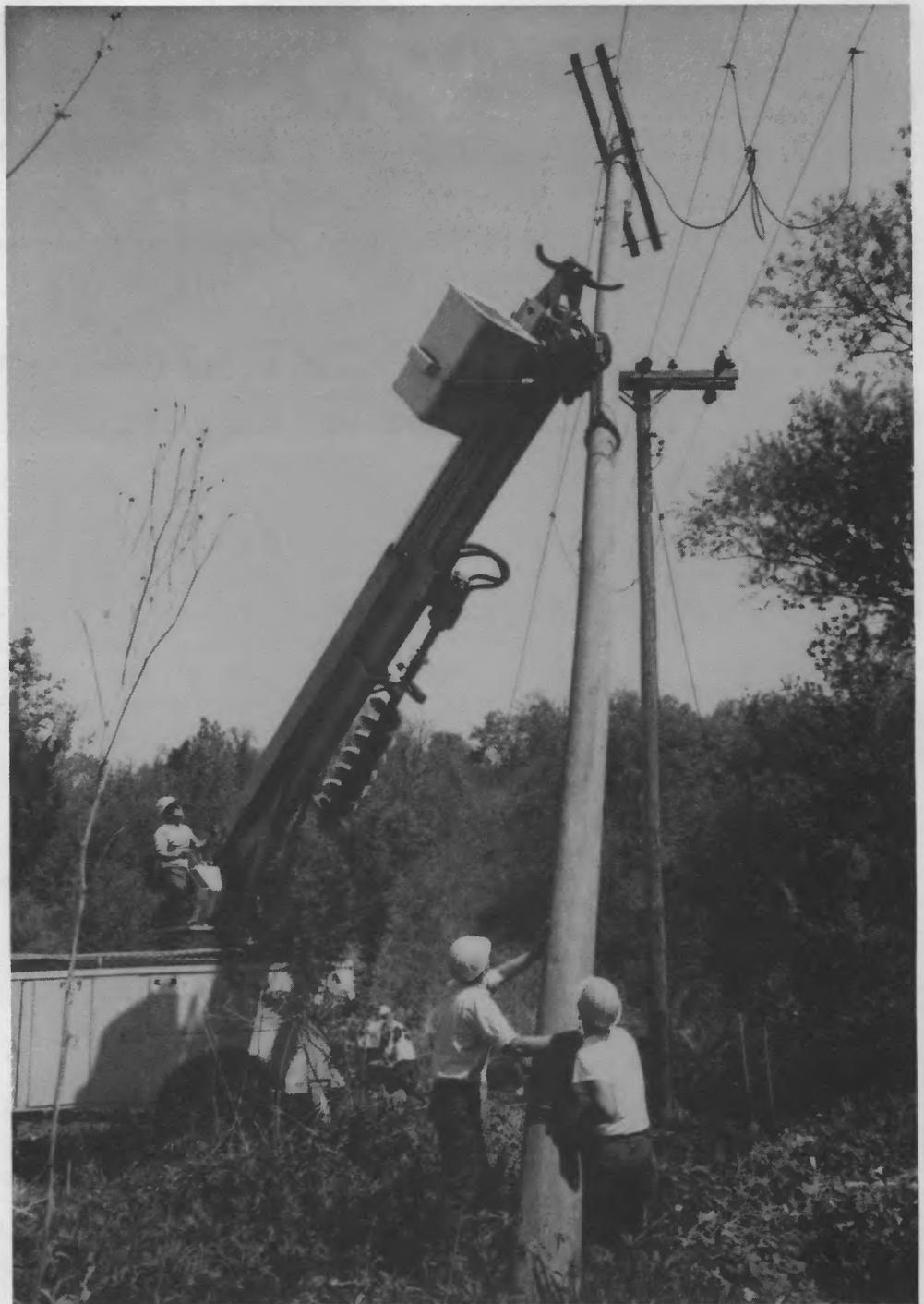
A contracting firm, Electric Laboratories and Sales Corp., will be in the area testing all of our three-phase meters this month. These large power meters are tested every three years. The meters are tested, cleaned and calibrated to ensure maximum accuracy. Our single-phase or residential type meters are tested every eight years, and we will be using Jo-Carroll's service men to perform test and clean 550 of this type in 1989.

The electric meter is one of the most accurate measuring devices in common use. It is important that they be so accurate to assure accurate billing for our members. The maintenance and testing program allows us to assure accurate billing, for the amount of electricity use.

Meter test under way



Let us know early about your building plans. Once again the "summer crunch" is upon us, and the cooperative crews are straining to get all of the work requests completed. We expect to complete about 200 new services and many service upgrades this summer in addition to the normal pole changes and maintenance jobs. If you plan work that will require the crews from Jo-Carroll, please call us early so we can schedule the work.



Dear dog owner:

Reading your electric meter is our job. We like our work and try to do it well. We're an important link in the operation of your cooperative, so we're out on the job no matter what kind of weather.

We really could use your help, though. If your dog is kept outside and doesn't like strangers, we may not be able to read the meter. Many members make arrangements with us to enable us to safely read the meter where they have a guard dog. It would be much easier to make such arrangements than for you to have to go to the expense of having your meter relocated to a location safe from your dog.

If you have a guard dog that is unfriendly toward strangers, please let the cooperative know what kind of arrangements we can work out. We work for you, and it's in your best interest for us to get our job done safely. Thank you.

—Your meter reader

Look up . . . and live!

A weekend project such as putting up an antenna may give you a feeling of accomplishment, but tangle with power lines and the result could be death. When working with tall objects like TV antennas, metal ladders and swimming pool cleaners, remember—be aware of the wires above you. Look up...and live to see another weekend.



**JO-CARROLL
COOPERATIVE
ELECTRIC**

**SATELLITE DISH NEEDED \$15.00 HOOKUP FEE
CHOOSE YOUR OWN PROGRAMMING**

HBO/Cinemax/Disney – All three – \$20.95 per mo.

Disney – \$7.95 per mo.

HBO/Cinemax – \$14.95 per mo.

HBO – \$7.95 per month

HBO/Disney – \$14.95 per mo.

Cinemax – \$7.95 per mo.

Cinemax/Disney – \$14.95 per mo.

SELECTV – \$9.95 per month

Starion Premier Cinema – \$9.95 per mo.

Basic Package – \$9.95 per month

WGN Superstation-Chicago
WPIX Superstation New York
CBN Network
CNN Headline News
Lifetime
The Nostalgia Channel
The Travel Channel
Nickelodeon

KTVT Superstation Dallas
USA Network
CNN News
ESPN All Sports Network
Country Music TV
The Learning Channel
The Weather Channel
The Nashville Network

WTBS Superstation Atlanta – \$19.95 per year

Prime Time 24 – \$3.95 per month

WABC-ABC New York / WBBM-CBS Chicago / WXIA-NBC Atlanta

clip and save

clip and save

clip and save

Does your neighborhood have underground wiring? Planning to plant or excavate soon? If so, call the office so we can mark the cable paths for you. Notify us at least two working days before you plan to excavate. The Cooperative does not subscribe to JULIE so don't expect them to notify us for you. Our phone numbers are (815)858-3311.

clip and save

clip and save

clip and save

Let us know if lines are low

In 1901 Congress passed a bill creating the National Bureau of Standards. The purpose of this Bureau was to create standard guidelines for a variety of industries. The **National Electrical Safety Code** was created as a guide to electrical industries. This code has recommendations ranging from the grounding of equipment to the clearance of electric lines above the ground.

The minimum ground clearance for electric lines that agriculture equipment will cross is 18 feet. This is the same height that is needed to cross public roads subject to truck traffic.

The minimum ground clearance for electric lines that cross residential or commercial driveways not subject to truck traffic is 15 feet.

The minimum ground clearance for electric lines that cross railroad tracks is 27 feet.

Jo-Carroll Electric Cooperative always constructs electric lines to exceed the minimum requirements of the safety code. However, Father Time and Mother Nature have a way of reducing the amount of ground clearance of some lines. If you are aware of any of your cooperative lines that are less than the above requirements, please let us know so that corrections can be made.

Check EER before buying air conditioner

When it comes to summertime electricity use, no appliance has more impact than your home air conditioner. Air conditioning in a typical home uses an estimated 50 percent of all the electricity consumed during these summer months.

That is why it makes sense to have the most efficient air conditioning system possible in your home. If your system is already in place, you can improve efficiency by maintaining adequate insulation, keeping heat-producing appliances from operating during the hottest part of the day and keeping your thermostat set at 78 degrees or higher.

If, however, you are planning to purchase a new air conditioning unit or system, then you have much greater control over how efficiently it operates.

Because of federal regulations, air conditioning manufacturers are required to assign an EER, or energy efficiency ratio, to each unit or system they sell.

We recommend that when you purchase an air conditioner, you purchase one with an EER of 8.0 or higher.

The EER is actually determined by dividing the BTU output of an air conditioner by the wattage or power demand of the unit. For example, a 36,000-BTU unit with a demand rating of 6,000 watts would have an EER of 6.0. But a 36,000-BTU unit with a demand rating of 4,000 watts would have an EER of 9.

In the latter example, the unit is producing the same amount of cooling but is requiring less electricity. This means you would get more cooling for your money.

We urge you to think about efficiency when purchasing an air conditioner or any other appliance. It might cost you a little more to start with but the energy savings will far outweigh the higher initial cost in most cases.

Have some respect

Especially near power lines!

Make sure you fly your kite in wide open spaces. Don't climb trees around power lines or raise a ladder or pipe without looking up. Be careful when you adjust your roof antenna.

Be smart and play it safe. Give power lines the respect they deserve.

And please contact us for more information about safety and electricity.

We're here to help. **addos uqof**

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Shireman

Rate reduction!

I am pleased to announce the promotion of Don Schleicher to marketing director for your cooperative. Don has worked for the cooperative for a number of years, and we look forward to working with him in this new capacity.

Marketing is a very important part of the cooperative's efforts to control the cost of electricity. By increasing sales we can spread the fixed cost of the cooperative over a larger number of kilowatt-hour sales. Also, and perhaps more importantly, our increased emphasis on marketing will attempt to lower the amount of electricity used during our peak times, and increase the amount of electricity used during the off-peak times. Substantial dollar savings are available by shifting the times in which the electricity is used.

Several new and different items are being introduced to the dual fuel program this summer that will make this important marketing program even more attractive to our members. A dual fuel home is one that has two meters: one for electric heat and one for the lights, refrigerators, etc. The home must also have an auxiliary heating system that can take over when the electric heating system is interrupted by automatic radio signal during peak periods.

The dual fuel concept is so important to the cooperative that we have lowered the dual fuel rate, in both summer and winter:

Old rate—3.3 cents per kwh during the winter
7.7 cents per kwh during the summer
New rate—3.0 cents per kwh during the winter
5.0 cents per kwh during the summer

What's more—the rate has been guaranteed for three years! Very few fuel suppliers can guarantee the cost of home heating until May of 1992.

Of course, the \$200 cash signing bonus is still in effect for all new dual fuel installations. The 5.0 cents summer rate will allow for members with dual fuel heating to add their air conditioners to the second meter and save while they cool during the summer months. The air conditioning unit will not be interrupted, or turned off, by radio signal. Jo-Carroll's peak time is still 5-9 p.m. during the coldest winter evenings.

Another expanded marketing program is the doubling of the cash bonus for new electric water heaters from \$50 to \$100 per unit. This means that if you get a new water heater and allow the cooperative to install a load management control, we'll pay you \$100 in cash.

If the new water heater is in a dairy operation, we will give you \$150. This is because most of the dairy's water heaters operate during the winter peak times, and are therefore more important to control. This offer also extends to preheaters and storage tanks.

A bill insert relating to these new programs will appear in all the July 1 bills, but anyone interested in the program can "beat the crowd," by giving Don a call at 858-3311. Several other new marketing ideas are being discussed, and it is hoped that with Don on board we can continue to improve the service to our membership.

Is your home safe from electric hazards?

Electricity has become such a big part of our lives that people take it for granted. They think the facilities that bring them electricity are permanent and don't give them another thought.

This can be costly and dangerous.

The wiring in your home or on your farm requires maintenance and regular inspection. Wiring wears out just like anything else.

Each time a new electrical load such as a water heater, dryer, range, freezer, motorized equipment or heating device is added to your home, you should review the part of your electrical system that will handle the new load.

You may need the expertise of a professional to help check the wiring requirements and capabilities of existing wiring in your home. If your home's electric wiring hasn't been professionally inspected within the past several years, contact a qualified electrician.

Indoor checklist

- I check electrical cords for frays and nicks.
- I make sure plugs and prongs aren't loose or worn.
- I don't place cords where they can be tripped over or receive excessive wear (like under rugs.)
- I never use an electric tool or appliance if my hands or feet are wet or if I'm standing in water or on damp ground.
- I know where my fuse box or circuit breaker panel is located.
- I equip my home with an approved fire extinguisher for electrical fires and check it periodically.
- I never attempt to do home wiring improvements myself.
- I insert specially designed plastic caps in low wall outlets when not in use to protect small children.
- I teach my children these simple rules of in-home electrical safety.
- I look for the Underwriter's Laboratory label on every appliance I buy.
- I don't risk overloading wall outlets with adapters.
- I turn off and repair any appliance that sputters, stalls, or gives the slightest shock. *Shirley Brown*

Member notice

The board of directors of Jo-Carroll has raised the charge for after-hours calls that are not Jo-Carroll's problem. This charge would be levied on a member who calls the cooperative to report an outage after 4 p.m. or on weekends and the problem turns out to be the member's own fuses or a problem on the member's side of the service. In this situation, it is not fair to have the entire membership pay for an electrical problem that should be taken care of by an individual's electrician. The cooperative is forced to charge the individual who calls out the crew. The new charge will be \$70 for each incident that the crews are called out on.

If you experience an electrical outage, please check your circuit breakers or fuses. Many times members will call and the crews will go to the scene only to find the member's main breaker has opened. Seventy dollars would be quite expensive to have a crew come from Elizabeth just to change a fuse or flip a circuit breaker.

Jo-Carroll responds to any outage or emergency 24 hours a day 365 days a year, and we urge cooperative members to call collect to report such outages. But, before you call, check to be sure that the problem is on Jo-Carroll's line.

Thank you



Jo-Carroll would like to thank Harold Hemminger. He lives on Jo-Carroll's lines north of Mt. Carroll, and he noted that a pole near his pasture had broken off and was leaning over. His call to the office allowed the crews to install a new pole before the situation caused an outage or an electrical contact accident.

Jo-Carroll maintains more than 1,000 miles of high-voltage distribution line. Even though the cooperative has a strong maintenance program, and our crews travel the system continuously, we cannot detect all of the potential problems as they develop.

We appreciate members like Harold Hemminger who will call in to report problems. If you see any damage to our electrical system please call the office and let us know. Whether it is a leaning pole, a broken cross arm or a low wire, a call from our members can save outages, and maybe even lives.

Don Schleicher is named Jo-Carroll Electric marketing director

Donald J. Schleicher has been named marketing director at Jo-Carroll Electric Cooperative in Elizabeth. Schleicher, who had worked as a lineman, will have a variety of duties in this newly created position. He'll work to promote the cooperative's Dual Fuel and controlled electric water heating programs and will assist area homebuilders, contractors and member-consumers with a variety of needs. Schleicher, who joined Jo-Carroll Electric in 1980, will continue to serve as safety director. He and his wife, Kim, and their daughter, Connie, 13, live near Elizabeth.



Schleicher

New Low Rates For Controlled Electric Use !!!

Dual Fuel Rate **lowered** to 3.0 cents per kwh in the winter, and **lowered** to 5.0 cents in the summer for air conditioning on dual fuel homes.

Rebates Are Doubled !!!

\$100 cash bonus for new water heaters that are controlled

\$150 cash bonus for new water heaters in dairy operations that are controlled

Wood/Electric Rate Instituted !!!

5.0 cents per kwh year-round rate for homes with both electric and wood heat that can be controlled.

Rate guaranteed until May 1992

Call Your Cooperative !!!

Call 858-3311 for all the details on Jo-Carroll's new marketing programs.

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Two new commercial accounts added to Jo-Carroll's line

A great deal of the recent growth and development of Jo-Carroll's system has occurred in the northern part of our service area. However, two new commercial accounts were added to our lines in the southern half of our system this spring. Both of these accounts are unique in their nature, and the cooperative welcomes this diversity among our membership.

Midwest Tactical Training Institute, or MTTI as it is known, recently opened for business at its new site north of Mt. Carroll and east of Route 78. This facility will be used to train police and military squads, and is also open to the public for small arms training.

MTTI has been in business for several years and its instructors have traveled throughout the United States training professionals in weapons use. The construction of this permanent site will give the organization a headquarters area to train units of 20-25 police or military personnel. Two unique jungle walk courses have been constructed that utilize steel targets for handgun training.

The facility will also be open to the general public and will offer an instructional staff for small arms training and hunter safety courses. A 100-meter range and 88-yard .22 range, trap and skeet field, and sporting clay shooting will be offered.

The summer hours for MTTI will be 9 a.m. till dusk during the weekdays and 8 a.m. to 6 p.m. Saturday and Sunday.

Another new commercial account in the southern half of Jo-Carroll's service area is located on Route 78 north of Mt. Carroll. Owned by Leo Lucchesi, this business features a new, 5,000-sq. ft. facility to house a giftware business. This firm is involved in the design, construction and importation of various statuettes made from plastic with marble dust or fiberglass. These items are molded in clay and then cast in plaster as models before the final product is manufactured.

Leo has been in this business for years in the Chicago area, and "wanted a change, and really liked this part of the country." He plans on building a house in this area in the near future. His business will initially be mainly mail order, but he may open a retail outlet at that location.

Jo-Carroll has for many years enjoyed a diverse membership, and the cooperative is pleased to welcome these new members who have found unique ways to use our services and aid in the development of our service area.

This new building will house the giftware business of Leo Lucchesi.



The MTTI will be headquartered in this building.



Jo-Carroll Hi-Lines

Jo-Ca

Jo-Carroll Electric Cooperative, Inc., Elizabeth, Illinois — (815) 858-3311

MANAGER'S REPORT by Connie M. Shireman



Shireman

A special weekend

The weekend of June 10-11 was something special for your electric cooperative. Members, employees, pioneers and friends of Jo-Carroll Electric Cooperative looked back upon 50 years of service during a golden anniversary celebration that weekend in Elizabeth.

Approximately 500 guests visited the cooperative's headquarters facility during a 50th anniversary open house celebration. Many of them reminisced about Jo-Carroll Electric's early years and the day when the lights came on at their farms.

A number of the early Jo-Carroll leaders returned for the event. Chuck Youtzy of Elizabeth, manager from 1948 to 1981, was the cooperative's lineman for five years before becoming manager.

"At first, everyone just wanted electricity and they were happy to get it," Youtzy said. "After most people got it and got used to it, they bought more and more



Many former directors and employees of Jo-Carroll Electric Cooperative returned to Elizabeth June 10 and 11 for the cooperative's golden anniversary open house celebration. Some 500 guests toured the cooperative's headquarters facility during the two-day event. A group of cooperative veterans took time to reminisce and look over the Jo-Carroll 50th anniversary booklet. From left are Bill Janssen, director from 1962 to 1974; Morris Birkbeck, director from 1939 to 1975; Chuck Youtzy, lineman from 1943 to 1948 and manager from 1948 to 1981; and Clyde Mizell, lineman from 1941 to 1943. Janssen, Birkbeck and Youtzy still reside in the area and Mizell returned to Elizabeth from his home in South Carolina.

appliances and used more and more electricity.”

The cooperative’s planners underestimated how much electricity farmers would use and it was often difficult to keep up with demand, Youtzy said.

Another pioneer, Morris Birkbeck of Council Hill, recalled the early years as a cooperative leader, organizer, director and member. Birkbeck, who served on the cooperative’s board of directors from 1939 to 1975, recalled that many people predicted that the cooperative would never succeed because the obstacles were so great.

Birkbeck also recalled that the cooperative could not obtain adequate wholesale power during the early years, so it purchased two mobile, diesel-powered generating units. These small units, which were located on a hillside near Elizabeth, provided all the cooperative’s electricity needs during the first few years of operation.

One of the cooperative’s first employees, Clyde Mizell, operated those generating units from 1941-1943. Mizell returned for the cooperative’s golden anniversary celebration from his home in South Carolina. Many other former directors and employees also returned for the weekend celebration.

Since those early years, Jo-Carroll Electric Cooperative has grown from serving a small handful of 60 consumer-members to more than 4,600 service locations in Jo-Daviess and Carroll counties.

Jo-Carroll Electric does more today than just provide electricity to farms. Times have changed and the cooperative’s membership has changed. Jo-Carroll Electric still provides service to many farms and that is an important part of the cooperative’s membership. But the cooperative also serves commercial businesses such as restaurants, resort areas, manufacturing facilities, suburban residential neighborhoods and hundreds of vacation homes.

Jo-Carroll Electric has also changed with the times, by upgrading its electric distribution system, building a modern headquarters facility in Elizabeth, obtaining modern, efficient equipment and employing a staff of highly trained personnel to serve the members.

We had a number of other special guests, including Gary Stuva, who was manager from 1981 to 1986. Several retired directors also returned for the celebration, including Bill Janssen, 1962 to 1974; Gus Haas, 1961 to 1982; Elmer Krug, 1975 to 1977; Wayne Krohmer, 1976 to 1981; Roger Schlichting, 1982 to 1989; and Donald Krug, 1969 to 1975. Many retired employees also returned for the celebration, including Harry Ehrler, Jim and Juanita Riley, Velda Gerlich, Chuck McClave, Arletta Meader, Richard Backenkeller, Bob Stanley, Vernon Youtzy, Niles Kevern and Ken Vandedrink. Many area cooperatives, suppliers and other

Below, from left: Employee Dorothy Young (center) conducts a tour of the board meeting room. Jo-Carroll employee John Selleck (right) shows visitors through the manager’s office. Former director Morris Birkbeck cuts the anniversary cake.





organizations were represented at the open house. Following a guided tour of the cooperative's facilities, guests were served lunch. A video tape produced by Jo-Carroll Electric and the Association of Illinois Electric Cooperatives was shown continuously, and several exhibits were on display. The cooperative event was featured on the KDUB-TV evening news. The Dubuque-based station covered the event on its Saturday evening news, utilizing an interview with your manager in the segment.

Ten members won 50th anniversary door prizes, which were new "old-fashioned" radios. They were: Paul Brunner, Roger Farrey, Sandy Groezinger, Violet Groezinger, Joyce Krohmer, Marie Lieb, Hugh Senneff, Florence Steffes, Russell Swanson and Peter Walter.

Visitors enjoy refreshments during a break in their open house tour.



Reader prize

Each month, we print the name of a Jo-Carroll member who is eligible to win a monthly \$25 readership prize. If your name is printed in this month's edition, and not a part of any story, contact Jo-Carroll and claim your prize no later than the 10th of the month following publication.

Office hours

**7:30 a.m. to 4 p.m.
Monday through
Friday**

Outages and emergencies

**call 858-3311
24 hours a day**

Rate reduction!!

Jo-Carroll has just lowered the dual fuel rate, added a new low rate for air conditioners, raised the cash bonus amounts for new electric water heaters, and guaranteed the rate until 1992.

How can the cooperative afford to do this?

What's in it for them?

What's in it for me?

What's in it for them?

What's in it for them?

Saving money for all Jo-Carroll members. Jo-Carroll buys all of our power from Dairyland Power Cooperative, which is concerned with the large amounts of power used during the peak times. The news media often report of the cost and trouble encountered in building new power plants, and Dairyland feels that by controlling the usage during the peaks, the power supplier can defer the need for a new plant.

Dairyland Power bills Jo-Carroll in such a manner to strongly discourage use during the coldest of winter days during the hours of 5-9 p.m. This billing is known as the demand charge, and Jo-Carroll members pay all year long on these winter peaks.

By installing radio controls on electric heating and water heating units, the usage during the peak times can be avoided, because the controls will turn the units off. This amounts to huge savings. More than 1,700 of Jo-Carroll's members have controls installed, saving the cooperative about \$150,000 each year.

What's in it for me?

All of Jo-Carroll's members save money through the radio control program, because the lower cost for peak demand means stable rates. But the members who have radio controls installed save the most!

A new program introduced this summer will promote the conversion to Dual Fuel heating by offering a special rate for air conditioning. During the summer months, from May to September, the kilowatt-hours measured through a Dual Fuel meter panel will be charged as 5.0 cents per kilowatt-hour. Normally, the rate of 7.7 cents per kilowatt-hour is charged during the summer for air conditioning. In addition, the Dual Fuel rate has been lowered from 3.3 cents per kwh to 3.0 cents per kwh and guaranteed until May of 1992. This will provide an additional benefit to those members who choose to participate in the Dual Fuel program.

A Dual Fuel heating system has a separate meter that records the usage of the electric heating. Now, the air conditioning unit of the home can be wired from the second meter, and the reduced rate of 5.0 cents per kilowatt-hour can be offered.

The air conditioning units will not be interrupted, or turned off, by a radio signal like the electric heating units are. The peak time is still during the coldest winter evenings from 5-9 p.m., but control of electric use during that time is so important that we are offering this savings as an incentive for our members to convert to the Dual Fuel heating method.

The cooperative also pays a \$3 per month bill credit for any controlled electric water heater. The controls are installed free of charge.

Cash bonus for having controls installed: Kathleen Smith

\$200 cash for any new dual fuel

\$100 cash for any new controlled electric water heater

\$150 cash for any dairy water heater or controllable pre-heater

The controls are installed free of charge. To get involved with the savings, complete the coupon and mail to:

Jo-Carroll Electric Cooperative

P.O. Box 390

Elizabeth, IL 61028-0390

1. I am interested in having a control installed free of charge, and receiving my \$100 bonus and the \$3 per month bill credit for my electric water heater.

2. I am interested in saving on my heating and air conditioning bills, and receiving my \$200 cash bonus. I presently heat with:

Wood

LP Gas

Oil

Electric

3. I have a dairy operation, and would like to receive my \$150 cash bonus, and my \$3 per month bill credit for my electric water heating equipment.

Name _____ Day Phone No. _____

Jo-Carroll Hi-Lines

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Jo-Carroll Electric Cooperative, Inc., Elizabeth, Illinois — (815) 858-3311

MANAGER'S REPORT by Connie M. Shireman



Shireman

Confusion about insurance

Some Jo-Carroll electric cooperative members are being confused by marketing methods of an Oklahoma insurance company.

Based on inquiries received by local members and the electric cooperatives' statewide service organization, many cooperative members may be led to believe that the company is affiliated with electric cooperatives.

That is not the case.

The company, Reserve National Insurance Company, apparently addresses mail solicitations to postal patrons and blankets an area with its mailings. The mail literature says that the company is gathering information about the need for or interest in group coverage through something called the NRC, or "A National Association of Rural Co-Operative Member." The term "rural co-operative member" is used prominently.

One piece of literature we have seen carries a disclaimer that says: "This plan is not affiliated with or endorsed by any particular rural electric cooperative." Another form the company sent out says: "This questionnaire not affiliated with any particular rural electric cooperative." While these disclaimers are present on the literature, the tone of the literature and the use of a group name similar to the electric cooperatives' national service organization, the National Rural Electric Cooperative Association, has a number of people confused.

This insurance company has no affiliation with any rural electric cooperatives, any of their national organizations or any of their state organizations. Its insurance programs are not endorsed by any rural electric cooperatives or any other rural electric organizations. We know of no electric cooperative that allows the company to use its mailing list.

The use of the terms "rural co-operative member" and "A National Association of Rural Co-operative Members" can give some rural electric cooperative members the mistaken idea that this insurance has the approval of the local cooperative or national or state organization. Don't be misled.

If you think there is something not quite right about mail you receive about insurance or anything else, double check. If a salesman suggests he represents a firm affiliated with rural electrification, ask questions and get written proof of any such affiliation.

Your electric cooperative's good will has been built on 50 years of trust. Don't let someone trade on that good will and trust to misrepresent what he is selling.

We are not saying that Reserve National Insurance Company is an unreliable company or that its policies are substandard. We simply want to set the record straight about any questions concerning the relationship of the company and electric cooperatives.

Paula McHugh

The Illinois Rural Electric News frequently has advertising from insurance companies. The acceptance of advertising for the publication does not constitute an endorsement. Some of these insurance companies may, however, have the endorsement of the National Rural Electric Cooperative Association, or one of the nation's 1,000 electric cooperatives may have endorsed a company.

That should have no bearing on your need to be a prudent consumer. Insist that any company you deal with be reputable, that any implied endorsement or affiliation be supported by facts, and that the goods or services are what you want and need.

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'URD' has pluses and minuses

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The crew has the faulted piece of line isolated, and they are hooking up the "thumper." The thumper is a device that sends a high-voltage charge down the URD line, and causes a loud thump when it reaches the faulted area. The crew can walk along the route of the cable and hear the thump, and know that the fault is under their feet.

Underground electrical service is more attractive than having wires draped overhead, cluttering up the pretty scenery. It's easier to mow, without having to go around the poles. It's safer than overhead too. The kids can fly the kites about anywhere, and you don't have to watch out for antennas or aluminum ladders. Another plus for selection of underground residential distribution (URD) wire were the manufacturers' claims that it would last for "40 or 50 years."

Jo-Carroll and most other electric suppliers evaluated these benefits, considered other good points about URD cable, and began to install lines using this method in about 1969. Jo-Carroll has more than 186 miles of underground line in service, or enough to run a line from Elizabeth to Rockford and back, and back to Rockford again. That amounts to a very long trench and a lot of line to maintain.

Unfortunately, all of the benefits were not as good as they seemed. Yes, it is more aesthetically pleasing, and yes, it's probably safer (although one must now take extreme caution when digging in the area of URD wire). The main drawback with URD is that it did not last 40 or 50 years. The newer wire, manufactured in the 1980s is far superior and will no doubt last a long, long time, but the 1960s wire began to fail rather quickly, often within 10 years of installation.

When an underground cable faults, an outage always occurs. On the overhead lines, a fault will be able to clear itself when the oil circuit recloser operates. This can be witnessed on any digital clock or VCR. After a "blink" or recloser operation. A tree limb in the line or lightning, or high wind, or a raccoon or squirrel getting in the line will cause this and the clocks will be blinking when you come home.

Not so with URD. When a fault occurs, the breaker or protective device will operate, and try to clear the line, but a faulted cable will stay faulted until it is dug and repaired. This points out the main problem with URD cable—when an outage occurs, it takes some time to "get the lights back on."

The accompanying photos illustrate the procedures that must be taken to repair faulted URD cable. They were taken during the repair of an outage that occurred earlier this year. The call that a member was "out of power" was received in the office, and a crew was immediately dispatched by radio. After hours, the calls to the office are automatically switched to the Jo-Davies Sheriff's Office in Galena, which has a pager to call our linemen. Jo-Carroll responds to any outage or emergency, 24 hours a day, 365 days a year.

Once the crew has received the call, and traveled to the area, the first step is to "sectionalize," or limit the area affected. The crews can test the equipment to see what specific area is faulted by checking the above ground points such as transformers and junction boxes. Normally URD wire is brought above ground every 2,000 feet or less. Longer, unbroken runs of wire would be difficult to operate. Once the specific area in which the fault has occurred has been "sectionalized," or narrowed down to the nearest above ground place, the crew can hook up the fault locating device.



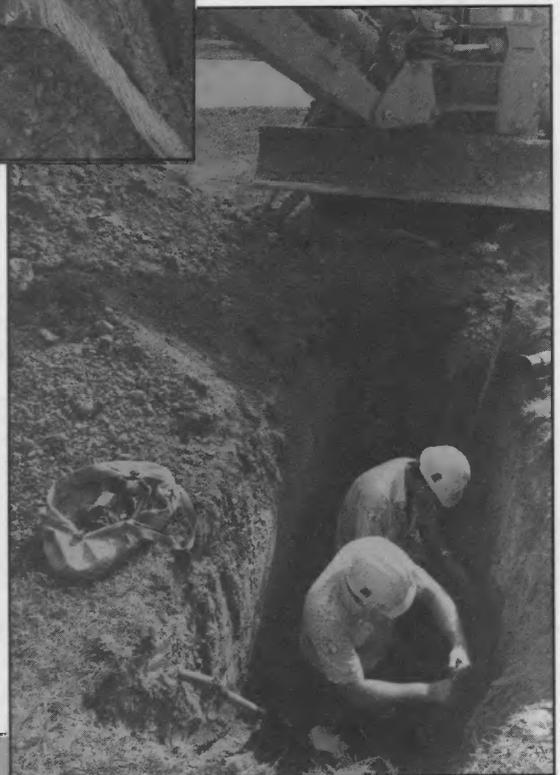
The fault has been located about 1,500 feet away from the last above-ground point, and the trencher is placed to remove the earth alongside of the cable route. The hole must be dug large enough for two men to work in and be located to one side of the cable, and dug deeper to enable the crews to excavate a clean area around the cable. ↴



↴ This is a completed splice as it appears in the bottom of the trench, just prior to backfilling. Notice that two other URD wires are in the same cable route, but did not fault. The cause of this fault was either a nick or break in the wire, that allowed moisture to enter the cable, or a defective place from when the cable was manufactured. This cable was installed about 13 years ago.



↴ The men have found the bad piece of wire. They will cut it out and install a splice of good cable to allow the electricity to once again flow down the line.



↴ The thumper is again used to test the splice and the rest of the cable in this section before the trench is backfilled. Careful records of all cable failures are kept in order to determine which areas will need to be replaced.

Jo-Carroll Hi-Lines

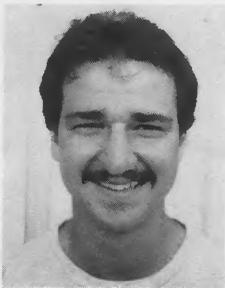
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Shireman

People serving people



Woods

An electric cooperative, in order to be successful, needs to have quality people. The quote "people serving people" is quite apt when describing electric cooperatives.

Jo-Carroll has been blessed with many longtime members who have been active in the affairs of the cooperative. Jo-Carroll is also experiencing a great deal of growth in new members. The new members have helped to strengthen the organization by offering a diversity of interest and an increase in sales.

An electric cooperative must have a dedicated board of directors. Jo-Carroll's board has several directors with many years of service to the board, as well as new board members who are also dedicated to the cooperative principles and success of Jo-Carroll.

Also important in a cooperatively owned electric system are the employees. Jo-Carroll's employees are highly trained, dedicated people who strive to serve the best interests of all the members. During the summer annual meeting at the Association of Illinois Electric Cooperatives, in Springfield, Dennis Wurster was honored. Dennis is Jo-Carroll's general foreman and has served the members of Jo Daviess and Carroll counties for more than 25 years. **Donald Berenschot**

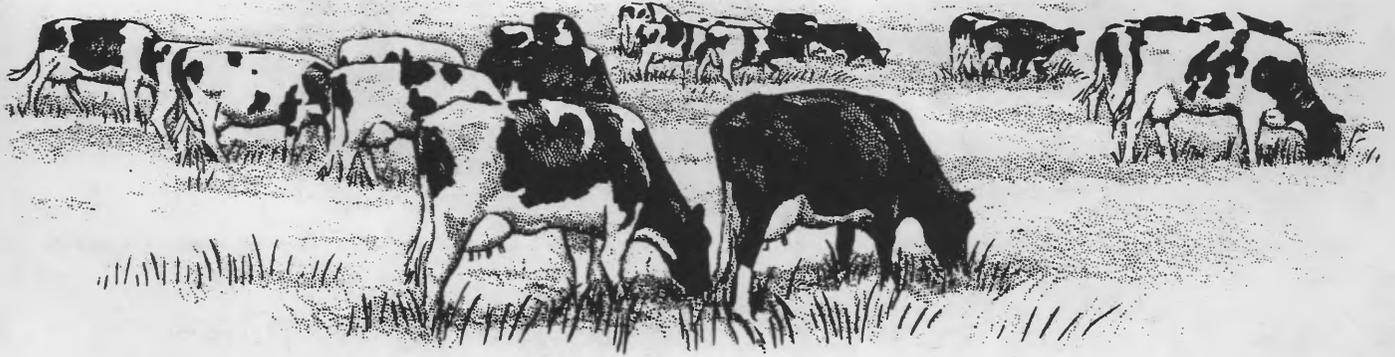
Dennis is a good example of the dedication of all Jo-Carroll's employees. During his 25 years he has covered innumerable outages, worked on system maintenance projects, and in general done everything possible to provide good electric service.

On August 28, Jo-Carroll welcomed a new employee to the ranks. Ron Woods, of Pocahontas, Iowa, will become Jo-Carroll's newest line worker. Ron is a graduate of Northwest Iowa Technical Institute at Sheldon, completing the powerline training before working for the Pocahontas municipal utility for three years. Ron, and his wife Joy, have a son Derek, who is 18 months old.

As Ron begins his career at Jo-Carroll, he will be following in the footsteps of many dedicated hard working employees who have strived to keep the lights on for the rural residents of Jo Daviess and Carroll counties for more than 50 years. During his first few months at Jo-Carroll, he will learn the true meaning of the quote "people serving people."

Dennis Wurster (right), general foreman, was honored for 25 years of service in Springfield by the Association of Illinois Electric Cooperatives. At the left is Thomas H. Moore, AIEC general manager.





Behavior changes in your livestock might be result of stray voltage

Dairy farmers may occasionally notice a change in the behavior of their cows, such as extreme nervousness in the parlor or a reluctance even to enter the parlor. Those are signs the cattle may be the victims of stray voltage stress. These symptoms—in addition to a number of others, such as uneven milk letdown, reluctance to drink water or reduced feed intake—can mean other problems as well, but dairymen might want to consider stray voltage as one possibility.

What is stray voltage and what can dairy farmers do to protect their herd and avoid management problems? Please read on for a discussion of a problem that is becoming more common among livestock farmers.

What is stray voltage?

Voltage is the electrical pressure or force necessary for the flow of electrical current. Just as a pressure is needed to make water flow through a pipe, voltage must be present to make electric current flow through a wire. Although proper voltage is a necessary element for the use of electricity on the farm, when it occurs in unwanted places, it can cause trouble. Stray voltage is the term used for a misplaced, low-level electrical impulse occasionally found in dairy parlors or other livestock facilities. In most situations, this low-level voltage (usually between .5 and 5.0 volts) is too small to be felt by humans or animals. But in dairy parlors and some swine facilities, there are special characteristics which cause stray voltage to be a problem. Because water, with its ability to conduct electricity, is present, animals' feet have a good electrical connection to the earth. Any small voltage on equipment, such as milking stanchions, cattle trainers or watering cups, will be conducted to ground through the animal's body. This will not harm the animal, but may stress them and not allow dairy cows to let down their milk.

What causes stray voltage?

The working voltage for most farmstead equipment is either 120 or 240 volts. This is measured between the "hot" wire and the neutral wire. The third wire in the system, the ground wire, is present in case of an electrical fault or short. Normally, there is no current traveling through the ground wire, but if a fault should occur this wire will provide an "easy path" to ground and allow the fuse or circuit breaker to open and safely de-energize the circuit.

Now let's turn our attention back to the neutral wire. The "hot" wire is the "delivery" wire of the circuit and the neutral wire is the "return" wire. It is normal to have a small voltage reading (of 5.0 volts or less) on the neutral wire as compared to true ground, and normally this low voltage cannot be felt by people or animals. But in the unique environment of the dairy parlor, this voltage difference between the neutral wire and true ground, now commonly called stray voltage, has been the subject of concern by livestock producers.

Basically, this is the situation that might exist. The neutral wire of the farmstead wiring system may carry a low-level current that is harmless under normal cir-

cumstances. As required by the National Electrical Code, the neutral wire is connected to earth through ground rods and through electrically grounded equipment and facilities in contact with the soil. All wires and electrical connections have some resistance to the flow of electrical current. Due to these resistances, whenever there is current flowing in the neutral wire, a voltage exists between it and earth. A cow's feet in contact with the wet concrete floor of the parlor provide a good electrical connection to the ground. When the animal's nose touches the stanchion or when the milking cups are applied to the udder, the cow provides a "better path" for this low voltage to return to ground. Although the farmer cannot feel it, the animal may be stressed by this low-level voltage.

This neutral-to-earth voltage difference is the most frequently cited cause of stray voltage. Other situations causing stray voltage are: induced currents, unbalanced electrical loads, improper grounding of service equipment, faulty ground rods, galvanic action, electrical shorts and primary neutral current.

When to suspect it

Unfortunately, there is no visual animal behavior unique to stray voltage stress. But as a guide, a farmer should watch for the following problems:

1. Uneven milk letdown
2. Cows extremely nervous while in the parlor
3. Cows reluctant to enter the parlor
4. Increased mastitis (infectious bacteria in the udder)
5. Reduced feed intake in the parlor
6. Reluctance to drink water
7. Lowered milk production

Although these responses may be caused by stray voltage, the farmer should first check the more likely causes. These include recent changes in herd diet, diseases, equipment sanitation problems, rough handling of animals and improperly adjusted milking equipment. The farmer should exhaust all possibilities before considering stray voltage as the cause.

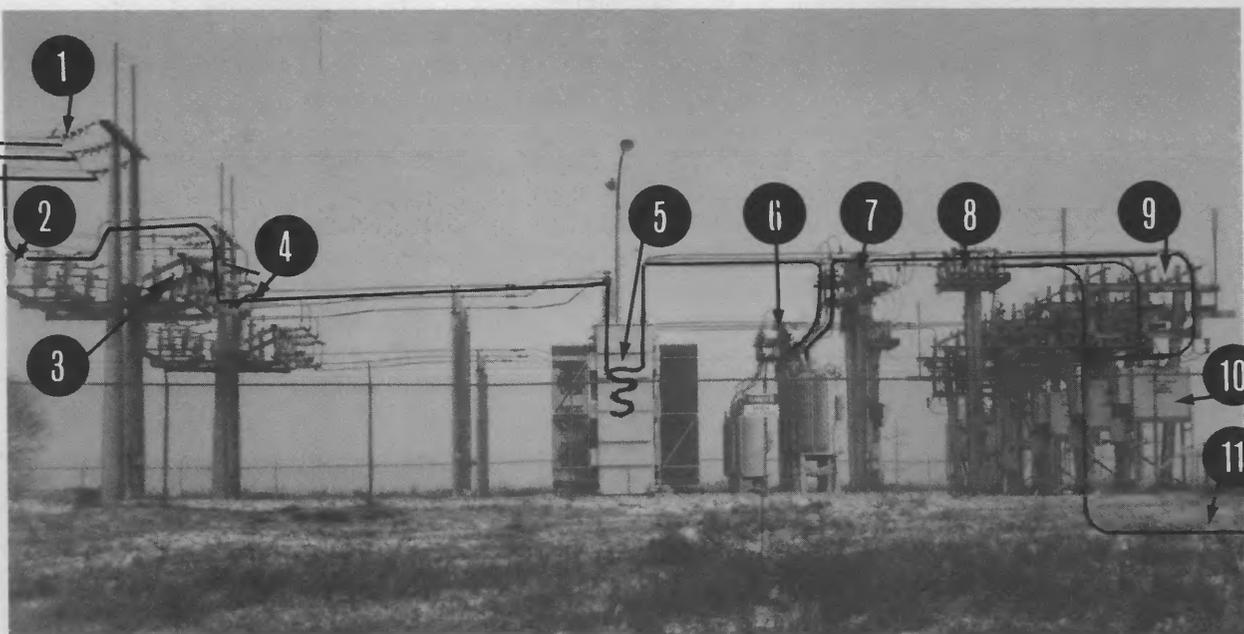
Research results to date

The stray voltage situation is a complex one and there are still many unanswered questions. Since stray voltage was first identified about five years ago, several teams of agricultural engineers, animal scientists and others have been involved in answering these questions. Under laboratory conditions, the scientists have simulated the conditions of stray voltage on dairy cows. Preliminary results of these studies have shown the following results:

- Considerable variation in sensitivity to voltage seems to exist between cows in a herd.
- Although distinct behavioral responses were shown, no significant reduction in milk yield occurred when cows were given mild electrical shocks in the laboratory.
- No significant difference in milkdown or residual milk retention in the udder was observed for cows subject to mild shocks
- Somatic cell counts (indication of infection) were not elevated due to application of low-level currents.

Summary

Although more research is needed, preliminary results indicate that there is no direct connection between the presence of low voltage levels and loss of production in dairy cows. But the reaction of dairy animals to these low voltage levels (nervousness in the parlor, kicking off milkers, reluctance to eat or drink) will almost assuredly result in management problems for the dairy farmer, and could indirectly affect milk production in the herd. If you feel that you have a problem with stray voltage on your farm, we recommend you contact the Cooperative Extension Service for assistance. Area agricultural engineers can assist you by making measurement and evaluating your farm's wiring. A milking machine representative should also be contacted to check the milking equipment. Your electric cooperative stands ready to assist you in checking out possible problems on the primary electrical system that serves your farm or your secondary farmstead wiring system.



- | | | | |
|---|-----------------------|--|---|
| 1. Incoming 34.5KV or 69KV
Transmission Line | or 69KV to 7.2/12.5KV | 6. Regulators to maintain constant voltage | 10. Breaker |
| 2. Switch | | 7. Metering | 11. Underground three-phase feed out to poles and distribution system |
| 3. Lightning Arresters | | 8. Switch | |
| 4. Fuses | | 9. 7.2/12.5KV Buss for Distribution Circuits | |
| 5. Transformer converts 34.5 | | | |

What is a substation?

We see them often—in town or in the country. They all look alike—high, chain link fences; warning signs; gray shapes behind the fences; lots of wire going in or coming out; sometimes a slight hum can be heard if we stop and listen. But what are they?

They're substations, and they serve two purposes. They change the voltage of the electricity, and they route it. They change or transform the voltage from a higher (69,000 or 138,000 or 345,000 volts) to a lower voltage (7,200). Electricity is cheaper to transport at higher voltages and costs more to transport at lower voltages.

In the picture, the high voltage enters the substation from the left, goes into the top of the transformer (1) where the voltage is lowered to 7,200 volts. From the transformer it flows to the voltage regulator (2). The regulator ensures that the voltage is constant and true.

It leaves the regulator to flow to the distribution center (4) where it is split into three or more circuits that travel along highways and streets to a transformer near a house. Here it is changed from 7,200 volts to 240 volts and then flows into the home to be distributed through the fuse or breaker box.

That's what they are and that's what they do. We need a new one when a circuit serving a particular area gets too many members connected to it. The new one then serves the area with three or more circuits instead of one.

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Shireman

Be careful around electric lines

An incident occurred this past month that pointed out the importance of taking extra precautions while working around high-voltage lines. I would like to share this experience so that similar occurrences can be prevented in the future.

The member involved was doing some road repair work. He had contracted a private trucking firm to bring gravel to the job site. The driver had extended his dump to spread the gravel when he contacted a telephone cable attached to a pole also supporting a Jo-Carroll Electric three-phase line. The result of the truck being entangled with the telephone line was that the high-voltage uninsulated power line was pulled down lower than the normal clearance requirements.

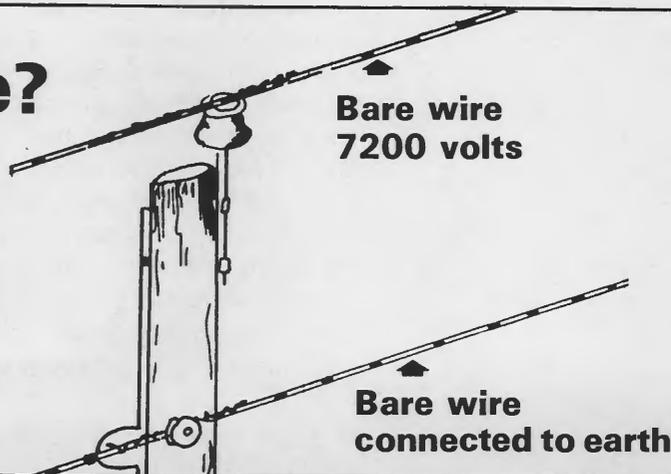
Someone else on the job decided to use a backhoe to unload the gravel from the dump truck before moving it clear of the telephone line. The boom on the backhoe contacted the high-voltage line during this operation. It was very fortunate that the contact with the high-voltage line was coincidental with the contact on the high-voltage line neutral, causing a short across the backhoe's boom. The line was faulted at that point, causing it to burn in half and interrupting service by opening a circuit breaker located several miles away.

This was fortunate, because if the neutral cable had not been contacted, all of the metal parts of the backhoe would have been energized at 7,200 volts. The rubber tires would have acted as an insulator, and anyone standing on the ground would have been electrocuted if he had come in contact with the metal parts of the backhoe. As it was, the damage cost to the Jo-Carroll Electric system was charged to the members. This was a small price to pay for what could have been a major tragedy if someone had been hurt or killed.

The message that can be learned from this incident is that the high-voltage lines are uninsulated and can be deadly. It should also be noted that Jo-Carroll will come to your job site and help to coordinate any work around our lines. Please call the cooperative at (815) 858-2207 any time you anticipate being in a position that our lines will pose a danger to you. It would be most unfortunate to have a serious accident that could have been prevented by a simple phone call to have the cooperative's crew come to assist.

Are you aware?

that electric lines
along roads and
through fields
are bare!





Paul Gillis, Dairyland Power ag marketing specialist, speaking to the group at the Jo Daviess County Demonstration Days September 20.

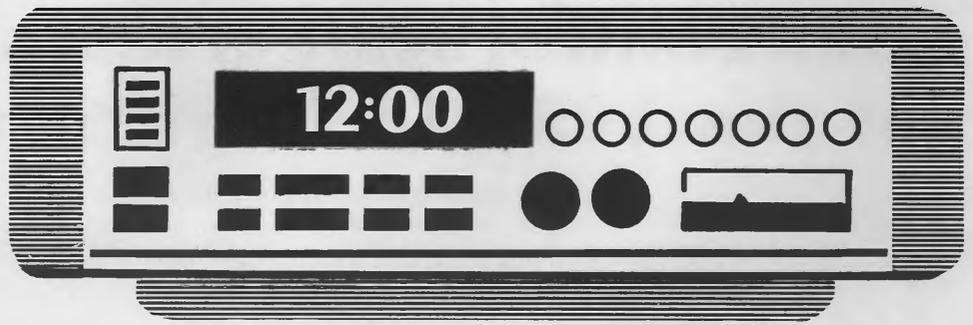
Low-temperature grain drying stressed during demonstration days

Jo-Carroll Electric member Vince Timpe was the host for the Jo Daviess County Extension Office-sponsored Seed Corn Demonstration Days September 29. Many seed varieties had been planted in a demonstration plot near the Timpe residence, and the performance of these various grains was demonstrated during the meeting.

Several speakers addressed the group on the subject of drying grain. Tad Kerr, area engineer for the Cooperative Extension Service from Dixon, spoke about the various methods to dry corn. The comparison between high-temperature and low-temperature grain was examined with regard to cost and quality of grain. Kerr has had much experience in this area due to his involvement with farms throughout northern Illinois.

The next speaker was Paul Gillis, agricultural marketing specialist for Jo-Carroll's power supplier, Dairyland Power. He further examined the subject of low-temperature corn drying, with particular emphasis on quality of grain. Dairyland Power has been working closely with a Minnesota firm to develop a farm-to-market system that will take full advantage of high-quality grain. Gillis introduced Paul Gnadke, president of Advanced Grain Systems Incorporated, 609 8th Ave. N.W., Waseca, MN, 56093. Gnadke is developing a "quality grower program." This program will "identity preserve" the grain that meets certain quality specifications from each individual farmer. The long-range plan of this program will be to allow the quality grower to receive the highest possible price for the highest-quality grain.

This concept of "premium" grain came as a response to the poor-quality corn sometimes received at the markets, particularly overseas markets. Gnadke's program involves certifying growers and developing markets for the premium quality corn. Jo-Carroll Electric members involved in corn production who wish to have more information about this program should feel free to write or call Gnadke at the above address.



Blinks — they indicate the system is working

(This article is designed to help explain the reasons for the momentary outages commonly known as "blinks.")

Jo-Carroll is served by a complex system of electrical distribution lines that are subject to many possible occurrences that cause these blinks. Between July 20 and September 1, Jo-Carroll received 17 blinks from external sources. In addition to those 17, some blinks that originated on Jo-Carroll's lines may have occurred, due to high winds or lightning.

These blinks represent a nuisance to our members because of the need to reset digital clocks and VCR's. However, these blinks are a blessing in disguise. If it were not for the oil-filled reclosers (automatic circuit closers that reset after the blink), each of these instances may have been a long outage. The cooperative regrets these inconveniences, but is pleased that all of these blinks were not lengthy outages.

Electronic equipment such as microwave ovens, digital clocks, VCRs and computers are so sensitive that the slightest blink may cause interruptions. All electric utilities experience these brief outages, and these appliances are the biggest "tattletales" for electric utilities. In many cases, if it were not for the clocks you would never know the power had "flickered" or gone off for a short time.

Blinks in your electric service are usually an indication that something has come in contact with the electric lines. Usually these problems can be traced to tree limbs, squirrels, birds, lightning, and even cattle or horses rubbing on guy wires. When the electric line senses a problem, the breaker (which is located on the power line) goes into operation. The breaker will shut the line off for just an instant so the line may clear itself. If it doesn't clear the first time, it may blink two or three times before it shuts the whole line off. Then, crews from the cooperative will be dispatched to clear the line.

If it were not for these breakers out on the lines doing their jobs, lines and substations could be destroyed, causing many consumers to be without power.

We have no control over squirrels, birds, lightning, cattle and horses, but we can have some control over trees and tree limbs. If you see limbs in the main lines, please contact the cooperative. We will be glad to come out and cut the limbs out of the lines.

Remember, the next time you see your lights blink, you know the system is working right!

Office hours

7:30 a.m. to 4 p.m.
Monday through Friday

Outages and emergencies

call 858-3311
24 hours a day

Reader prize

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Load control system test scheduled for the 1989-1990 season

Jo-Carroll Electric Cooperative has more than 1,700 load management controls installed on members' electric water heaters and dual fuel systems throughout its service area. The system works on an FM radio receiver frequency and automatically turns off electrical appliances during peak times. A \$3 per month credit is given to those members with controls on electric water heaters, and a special 3.0 cent rate for heating and a 5.0 cent kilowatt-hour rate for air conditioning are available for those on the dual fuel program.

Dairyland Power Cooperative, Jo-Carroll's power supplier, controls the switch that operates these radio receivers. Each fall this system is tested by turning off the water heaters and dual fuel heating systems in November.

This year's test will take place on November 6 and 8, when the water heaters will be turned off from 9 a.m. to 11:30 a.m., and again from 6:30 p.m. to 8:30 p.m. Any members who experience any problems, such as a lack of hot water, during this period, should call the cooperative.

On November 9, the dual fuel accounts will be tested by turning off the electric portion of the dual fuel system from 2:30 p.m. to 7:30 p.m. Members with dual fuel are urged to check the back-up heating source to be sure that it is operational. Again, any problems with the system should be reported to Jo-Carroll.

The cooperative appreciates our members' assistance with this important program.

Water bed will use electricity

Many people are not aware of the cost of operating a water bed. A water bed is basically a water heater, due to the fact the heating pad lies under a water-filled mattress to bring the temperature up to a comfortable temperature. The average heater for a water bed draws between 250 and 400 watts, depending on the size of the bed.

Many complaints about high usage have been traced to a newly purchased water bed that is using 200 to 300 kilowatt-hours per month. There are several things that will determine what the amount of increase will be: (1) how warm you prefer the bed to be, (2) the temperature of the room in which the bed is located, and (3) whether the bed is protected with insulation.

The third item is one that most people never think of doing. Insulation board such as one-half-inch polyurethane is the best material to use. Generally, it will easily fit between the mattress and the bed frame and will change the height of the bed very little. You must also remember to keep the mattress covered completely with warm bed coverings at all times to help retain the heat in the water. The less heat lost from the mattress, the less it will cost to operate the heater.

Member memo:

One feature of Jo-Carroll's headquarters building that is under utilized is the night deposit box. This box, located under the drive-up window area, can be used for you to drop a bill payment off, saving a stamp. During working hours, it is not necessary to wait at the window to be waited on. If a bill stub and check are in the envelope, it can just be dropped in the box. On the weekends or in the evening if a member is traveling through the Elizabeth area it is a simple matter to drive through the circular drive and drop the payment in the box. This is a convenience that some members have taken advantage of, but it is there for all of Jo-Carroll's members any time of the day.

Herbert Berlage

Jo-Carroll Hi-Lines

Jo-Carroll Electric Cooperative, Inc., Elizabeth, Illinois — (815) 858-3311

MANAGER'S REPORT by Connie M. Shireman



Shireman

**Let us
hear
from you**

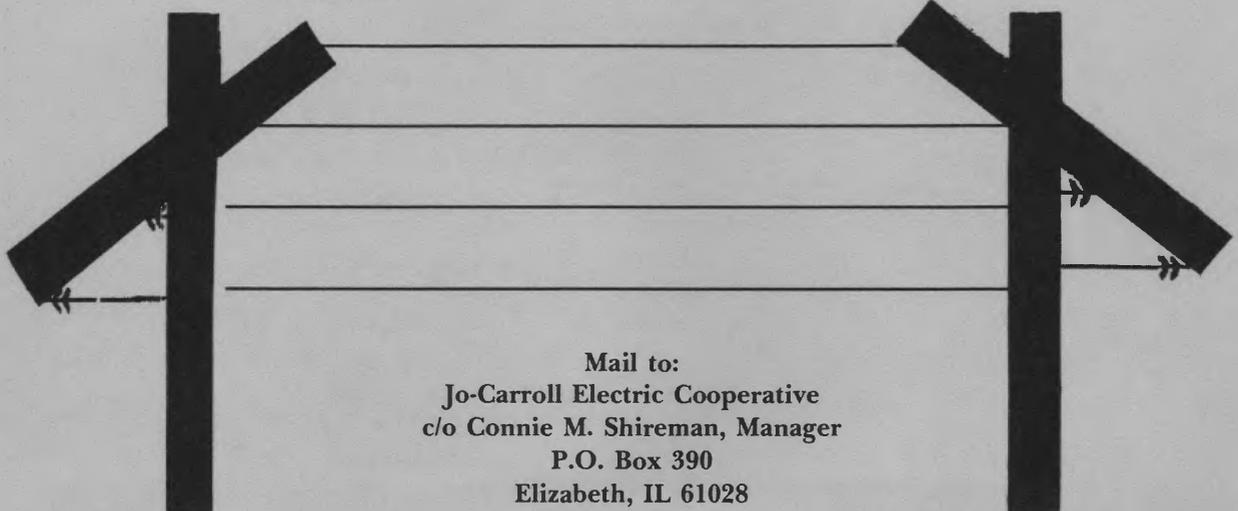
Keeping the members of a cooperatively owned business informed about the progress and activities of their business is an important task. As both members and owners, you have the right to know about progress of the cooperative. Jo-Carroll attempts to keep our members informed by the center pages of this magazine, bill inserts, the local media, and at the annual meeting.

Also, as owners, the members of Jo-Carroll have a say in how the co-op is operated. Your democratic right to vote for the directors in your local district means that your area is represented at each board meeting. The manager and staff of the cooperative are easily accessible at the headquarters building in Elizabeth, and members can keep in touch by either dropping by or through a phone call.

Sometimes in this busy lifestyle, it is difficult to find time to drop by the office, and many people work during our office hours. With this in mind, I am including the following form to invite all of the co-op's members to "speak their mind" about Jo-Carroll. Please feel free to jot down your comments, ideas, or suggestions. If your comment or question needs a personal reply, please include your name, address, or phone number and we'll get back to you. We will address the more general comments in future issues of the Jo-Carroll "Hi-Lines."

Open line to the manager

Questions feedback, new ideas—we want to hear from you.
Comments:



Four horizontal lines for writing comments are positioned between the two cross-arms of the utility pole graphic.

Mail to:
Jo-Carroll Electric Cooperative
c/o Connie M. Shireman, Manager
P.O. Box 390
Elizabeth, IL 61028

Look around!

Watch the overhead power lines in the farmyard and near the fields! These lines carry deadly, high-voltage loads. Any contact between the lines and augers, combines, antennas or other equipment might be deadly!

Don't fly kites . . .

. . . near power lines. Summer winds are often idea for kite-flying. But keep those kids and kite away from the utility lines. Electric lines and kites form a deadly combination!

Call before you dig!

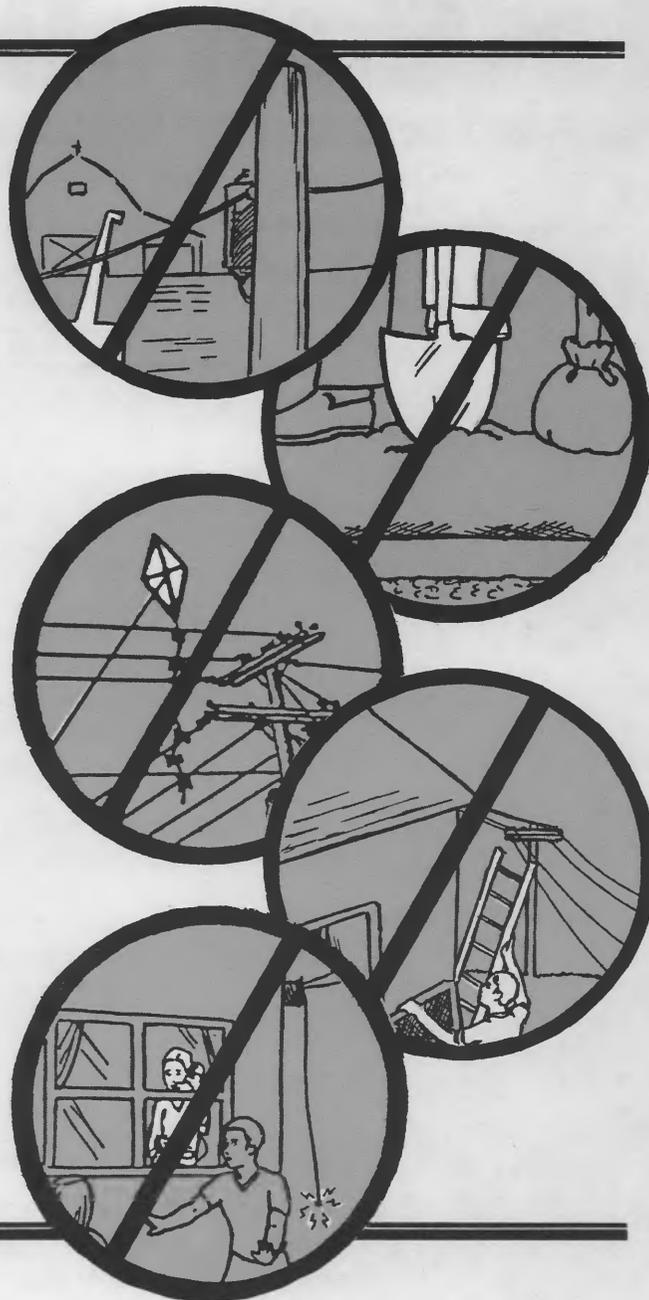
Putting in a brand new garden or planting trees this spring? Be sure that you don't plant or dig near underground power lines. You might be shocked to find buried cables by accident. If in doubt, call Jo-Carroll Electric to find the location of underground lines in your area. Remember: Jo-Carroll Electric Cooperative is not a member of J.U.L.I.E., which stand for Joint Utility Location Information for Excavators. You must call the cooperative!

Look up around the home or farm!

When you are carrying metal ladders, long boards, pipes or poles, remember to be on the alert for any utility lines in the yard. When you're on the roof making repairs, cleaning gutters or working on an antenna, be alert for any power lines within reach.

During emergencies . . .

stay clear of fallen electric lines. Call your electric cooperative immediately! Never assume that a fallen power line is dead!



Safety tips for using electricity

Don't overload circuits

—a major cause of home fires. Don't operate several high-powered appliances at once on the same circuit.

Turn off appliances

as soon as you finish using them.

Keep appliances clean

and in good condition. Have them repaired and serviced when necessary.

Don't let children play near wires or major appliances.

Avoid "octopus outlets"

which can easily overheat and could start of fire.

Inspect wires, plugs

regularly and replace any that are worn or frayed. Don't run cords under carpets or across doorjamb.

Economics of electric storage heat

Basically, load management is a program to make maximum use of electricity throughout the day and night instead of during periods of peak demand only. Generally, this means developing ways of shifting electric demand from evening "on-peak" hours to day and nighttime "off-peak" hours.

Electric storage heating provides one of the most promising means of providing this shift.

Is storage heat right for you?

If you now heat with gas or oil you should consider conversion to electric storage heating with economical off-peak electricity. Dramatic savings could result as gas and oil prices continue to rise.

No matter how you currently heat, an electric storage heat system could result in significant savings for you.

If you presently use electric baseboard heat, your electric wiring may already be suitable and the cost of conversion to storage heat will be greatly reduced. This makes the installation of storage heating even more economical.

Greater comfort for less

With storage heat you purchase electricity during "off peak" hours for as much as 61 percent less than normal electric rates. The heat is then stored for use as needed to keep rooms warm.

Another advantage of storage heat is that it helps delay the need for new generating capacity. **George Fox**

What is electric thermal heat storage?

Electric thermal storage heating is a clean, safe, comfortable and reliable method of heating your home.

This heating choice is growing in popularity because it is 100 percent efficient and provides consumers with considerable savings in heating costs.

These savings are realized by taking advantage of off-peak electric rates offered by Jo-Carroll.

Electric thermal storage heaters convert electricity to heat during off-peak times and stores that heat in specially designed high-density ceramic bricks capable of storing vast amounts of heat for extended periods of time. When the room thermostat calls for heat, fans in the heater circulate the stored heat evenly and quietly throughout the room.

Features of electric thermal heat storage

- Electric storage heat saves up to 61 percent of energy costs compared to conventional oil or electric heating systems.
- Reduced energy costs result in an average three- to five-year payback period on original investment for an electric storage heating unit.
- There's no plumbing. No chimney. No fuel tanks. No dusty duct system. No maintenance.
- Installation is easy.
- Electric storage heaters are ideal for vacation homes. Store heat while you are away; use it when you return.
- Individual room-by-room zoned temperature control improves personal comfort and allows you to lower your heating bills when rooms are not in use.

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Weatherization hints

At Jo-Carroll Electric, we want to see you save your energy dollars. We all know it is expensive to heat and cool your home. By making a few improvements around the house, you can reduce these costs. Efficient energy utilization and conservation is the key to saving money.

Over half the heat that escapes from the house in the winter is through cracks and loose-fitting windows and doors. Weatherstripping materials will reduce air infiltration around these areas. There are various types of materials which you can use for weatherstripping. These materials have a wide variety of life, durability, and cost. Most of these materials are easy to install. The best way to decide what is most suitable for your home is to visit a hardware or a building supply store. You can also contact your cooperative office.

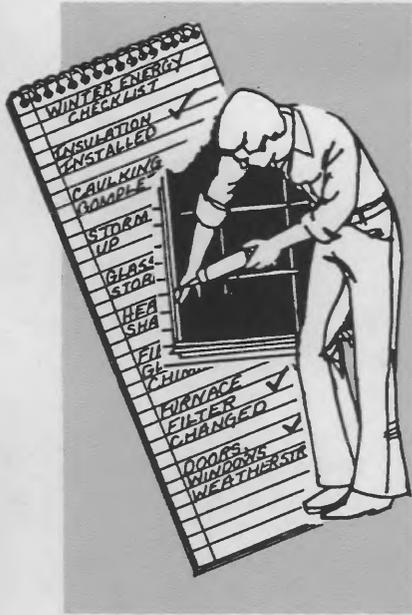
Caulking loose-fitting windows and doors is another way you can prevent air loss. Caulking compounds are materials used to fill, cover and seal cracks and construction joints. Again, there are several types of caulking compounds from which to choose. With caulking, you need to also consider the adhesiveness and the type of application that will work best.

Replace old caulking that is cracking or flaking. Clean out old joints first to get good adhesion. Caulking can be accomplished with a few low-cost tools and a little practice to get a good seal. Be sure to follow the manufacturer's instructions.

As a general rule, apply caulking wherever two different materials or parts of the house meet. Some of these are:

1. Exterior joints where windows and door frames meet siding
2. Corners formed by siding
3. Where exterior masonry fireplace chimney meets siding
4. Where porch meets siding
5. Joints between foundation and wall siding
6. Where the sill plate meets the foundation
7. All other exterior openings

Again, efficient energy use and conservation are the keys to saving energy dollars. By using these weatherstripping and caulking procedures, you will stop air and moisture infiltration into your home. These procedures will greatly decrease your home's heating and cooling bills.



“Remember — If you have a 1/16 inch crack around a standard door, it will let in as much air as a hole in the wall this size!”



The Jo-Carroll Electric Cooperative office will be closed Thursday, November 23, and Friday, November 24, in observance of Thanksgiving.

Jo-Carroll Hi-Lines

Jo-Carroll Electric Cooperative, Inc., Elizabeth, Illinois — (815) 858-3311

MANAGER'S REPORT by Connie M. Shireman



Shireman

Board election

One of the most important aspects of a cooperative is the democratic election process that decides which of the cooperative's members will serve on the Jo-Carroll board of directors. Prior to the annual meeting, a special mailing is made to elect the directors for a three-year term. Only the members who receive electric service in the district may vote for the director from their district, on the basis of one vote per membership.

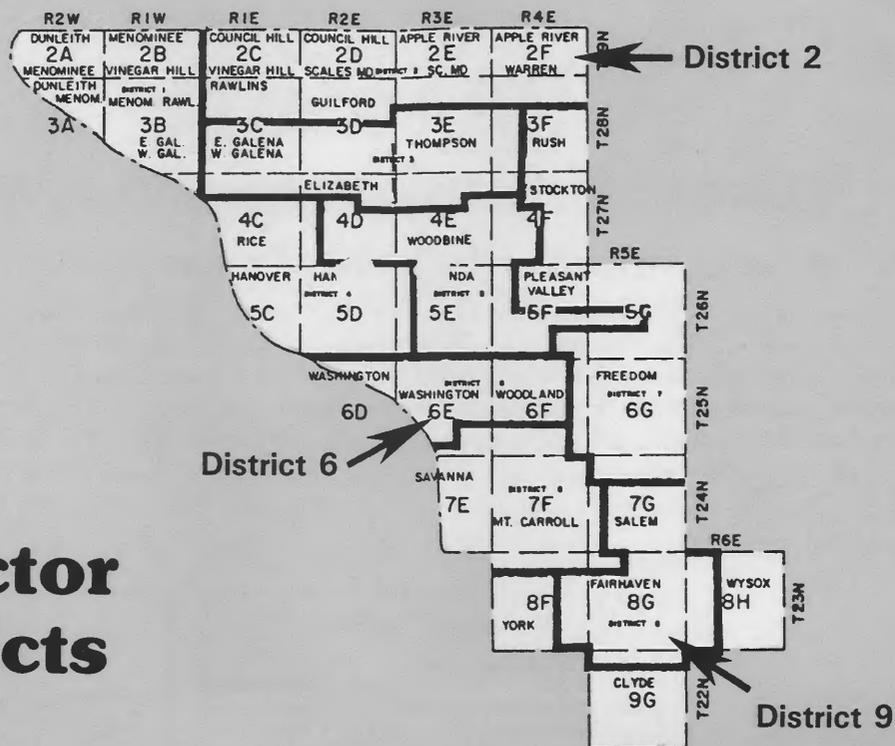
The nominees who will appear on the ballot are chosen by a nominating committee of Jo-Carroll members. This year's nominating committee will meet at the headquarters building Wednesday, January 3, to submit the names, and any interested parties should contact this committee. Directors are to be elected in Districts 2, 6, and 9 this year.

Members of the committee include:

DISTRICT 2: Orville Boldt, Lake Rd. No. 2, Apple River; Elmer Krug, 1120 W. Schapville Rd., Scales Mound; and Edward Troyke, 2A-45 Pioneer Dr., Apple River.

DISTRICT 6: Wayne Haas, RR 1, 6068 Ridge Rd., Savanna; Paul Rath, RR 1, 5103 Ridge Rd., Savanna; and Kenneth Knapp, RR 1, 6004 Camp Creek Rd., Savanna.

DISTRICT 9: Lyle Cartwright, RR 2 Box 132, Chadwick; Robert Kappes, RR 2 Box 67, Chadwick; and Mint Jilderda, RR 2 Box 79, Mt. Carroll.

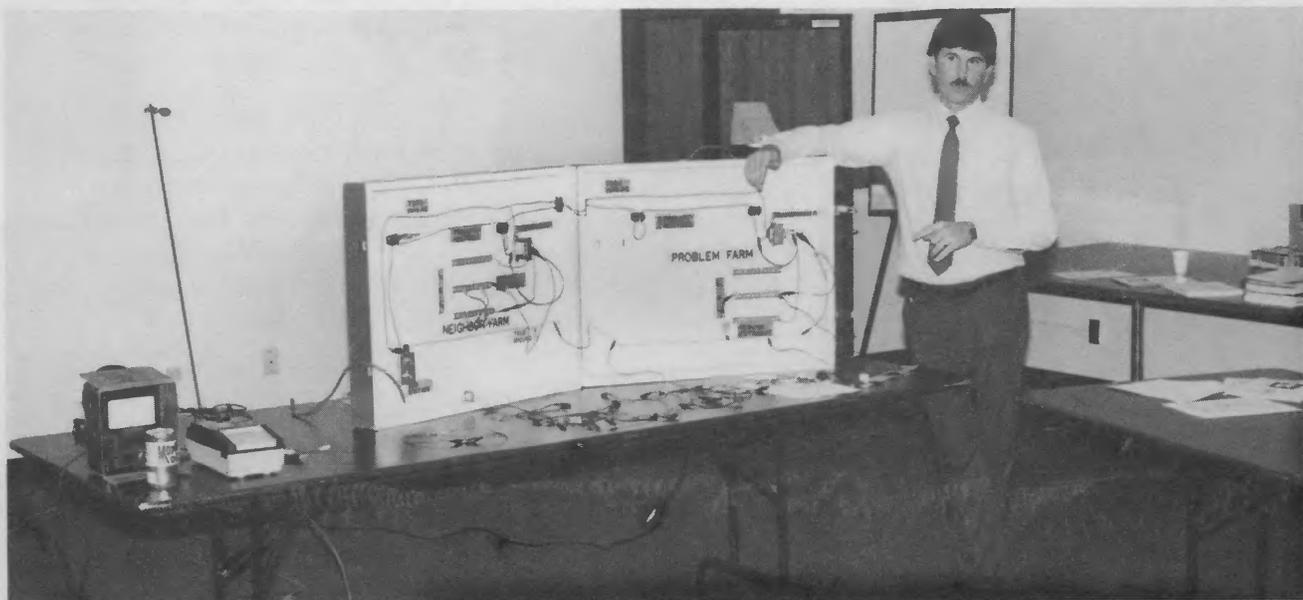


Director districts



New Town Hall built in Freedom Township

The old town hall for Freedom Township in Carroll County was built long before May 19, 1954, when Jo-Carroll first provided electric service. It served for many years as a polling place and the center of township activity until recently, when the township built its new town hall. The new building features a polling place with access for the handicapped, a board meeting room, and a spacious area for community meetings. The building also includes a heated shop area and a storage area that is unheated. Freedom Township supervisor Kenneth Kniss says, "We are very pleased with the new Township Building." The photos above certainly show the improvement.



Stray voltage seminar held at Jo-Carroll

Tad Kerr, Area Advisor for the Cooperative Extension Service, makes a point during a stray voltage seminar held at Jo-Carroll's office November 6. The display he is using is a stray voltage simulator, which simulates the electrical effects on a farm of various current and grounding conditions. The seminar was sponsored by the Jo-Daviess Extension Office. In addition to the day in the Jo-Carroll building, the dairymen, electricians, and other personnel in attendance spent some time at a dairy barn to see the effects of stray voltage in a milking operations. Jo-Carroll has been active in helping members with dairy operations to find solutions to stray voltage problems. If members suspect a problem with stray voltages in their farming operations, they are urged to call Jo-Carroll.

Reader prize

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Capital return credits

The Jo-Carroll Electric board of directors voted in November to return capital credits totaling \$138,118.21 to members who received electric service from the cooperative in 1966.

Capital credit returns are a cornerstone of a non-profit, member-owned electric cooperative in that the members have an opportunity to share equally in the success of the cooperative, based on patronage. If an electric cooperative has any excess after paying expenses in a given year, this money, or margins, is held until the time when the cooperative's board deems that the financial condition of the cooperative is strong enough to return the margins to the membership.

"We are very pleased to be able to retire the patronage capital from 1966 at this time," said Richard Reusch, president of the Jo-Carroll board. "The Jo-Carroll board is striving to keep the cooperative in a strong financial position while allowing the members to share in the success of their electric cooperative." General manager Connie M. Shireman explained that the amount each of the members spent for electricity at Jo-Carroll in 1966 is used to determine how much each member will receive. "Very careful records are kept with regard to patronage capital to assure that each member is treated equally based on the amount of electricity they used during those years," she said.

Jo-Carroll has retired \$599,984.24 to date in patronage capital. The checks were sent to the members during the first part of December. Before 1987, capital credits checks were distributed at the annual meeting, but since the meeting date has been changed to spring, the checks are mailed directly to the members.

"Sending the checks at this time of year makes a nice Christmas present for our members," Shireman added.

The capital credits return constitutes a major difference between cooperatives and investor-owned utilities. The stockholders in an investor-owned utility get the profit, and in a cooperative it is returned to the members of the cooperative in the form of a capital credits.

Peak demand affects rates

During the next six to eight weeks, Dairyland Power Cooperative will be measuring our substations to set a demand charge that will be in effect for an entire year. It is very important to make every attempt to avoid electrical usage between the hours of 5 and 9 p.m., on the coldest days.

Jo-Carroll's rates are directly influenced by the amount of power being used during these demand-measuring periods. Please avoid using appliances such as clothes washers, clothes dryers, electric space heaters, stoves or ranges, as well as unnecessary lights, rain-handling equipment and small appliances during the peak hours.

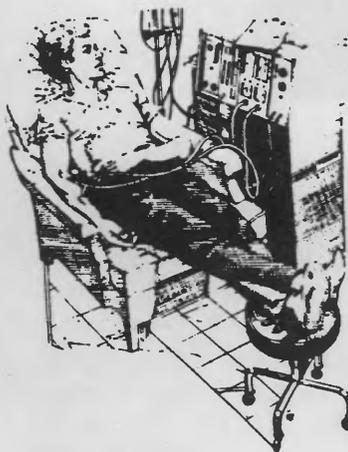
It can also be very helpful to lower thermostat settings on electrically heated homes. Many of Jo-Carroll's members are helping control demand costs directly by having controls installed on electric water heaters and through the dual fuel program. But even those members who do not have controls installed can accomplish significant power reductions during the peak alert times by shifting electrical usage away from 5 to 9 p.m.

**Happy
Holidays**

*from the board and employees of Jo-Carroll
Electric Cooperative.*

Jo-Carroll Electric Cooperative's office will be closed Monday, December 25, in observance of Christmas and Monday, January 1, for New Year's Day.

Life-support equipment



Jo-Carroll Electric Cooperative strives to maintain the best possible service to all of our members. Uninterrupted service would be a manager's dream—never an outage call. In reality, though, there are many factors present in the environment that are working against that dream: wind, lightning, ice storms, faulty equipment, trees, animals, and vehicles are a few examples of things that come into contact with the line to cause outages.

In addition, many of the maintenance jobs that our crews perform require the line to be de-energized. These are planned outages and are usually quite short. Nevertheless, if someone were dependent on life-support equipment that operates on electric power, the planned outage could be very serious.

In this issue we are running a clipout form to return to us if you are utilizing such equipment, as well as the steps to take in case of an outage. Your cooperative needs to know the names and locations of our members on life-support equipment, and we keep a registry of these on file in our office. We will make every effort to give priority to restore service on life-support systems.

Life-support registry

If you or a members of your family depend on life-support equipment, please fill out the form below and mail to us.

Name _____

Phone _____

Address _____

Location number _____

Type of support equipment _____

Days of use _____ Time of use _____

Do you have an emergency standby generator to operate this equipment?

Yes _____ No _____

Mail the above form to:

Jo-Carroll Electric Cooperative, Inc.

P.O. Box 390

Elizabeth, IL 61028

If your power goes off

1. Check your main fuses or circuit breaker. If some part of the house still has power, it is likely that a fuse is blown. Please check carefully to be sure that it isn't a fuse or breaker. If a line crew is called out, and the trouble is on the member's side of the meter, Jo-Carroll will bill you for this call.

2. If fuses and breakers are okay, call your neighbors to see if they are also out. This will help to determine if the whole line is out.

3. Call 815-858-3311 COLLECT—Jo-Carroll will accept collect calls for outages only. This number rings into our Elizabeth office during working hours and is switched to the Jo Daviess County Sheriff's Department after hours.

Any information concerning the outage is helpful to our crews. For instance, if a flash near the transformer occurred before the outage, this may tell crews that an animal has shorted the transformer. If wires are down, **DO NOT TOUCH** or even go near them. If you can see tree limbs in the line—**DO NOT** attempt to clear them. Call Jo-Carroll and stay away from the area. It can be helpful if you give the person answering the phone your location number, which can be found on your bill statement. Jo-Carroll has linemen on 24-hour-a-day call 365 days a year to handle any outage or emergency.

Dave Green