

Jo-Carroll Hi-Lines

Jo-Ca

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

MANAGER'S REPORT by Connie M. Shireman



Shireman

Electricity is your best buy

How many advertisements do we see promoting gas as "best energy value" or ads saying "the future belongs to the efficient," as if gas were the most efficient way to heat your home. The gas companies spend thousands of dollars running these ads on television and in the local papers in order to entice people to switch from electric appliances and heating to their product.

Jo-Carroll, being a locally owned and controlled cooperative, cannot afford to match the large advertising budgets of the gas companies to tell its side of the story. Your cooperative has been quietly providing dependable, efficient electric energy at cost to our members, and providing information through the Rural Electric News and billing inserts.

Recent events in the gas industry may once again shift the focus of energy values back to electric appliances and home heating. The price of L.P. gas has skyrocketed, and in some areas the supplies are limited. This may be an appropriate time to remind our members:

When considering energy choices,—consider that:

- The most efficient heating and water heating systems available today are electric—the lowest efficiency rating on electric heat is 100 percent—many systems are rated much higher.
- The safest heating and water heating systems available today are electric—no flame is needed—no combustion takes place in the home.
- The cleanest heating system available today is electric—because no fuels are burnt in the home—no combustion materials are left in the air.

Jo-Carroll Electric is proud of its product. Electricity is your best energy value. Also important is that Cooperative ownership means that Jo-Carroll members will share in the success of the Cooperative. Rather than spending energy dollars with a firm that will send the profits to an owner in some distant place, members' energy dollars spent with the Cooperative benefit the owners of the Cooperative—Jo-Carroll members.

Other facts worth consideration:

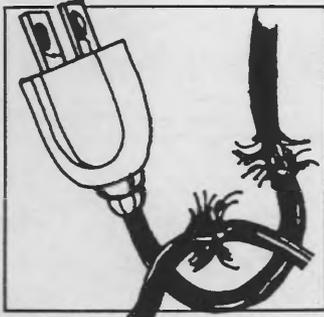
- The cost of some fuels can vary greatly—as much as 50 percent in the same year.
- Jo-Carroll has not had a rate increase in nearly six—raised last in May 1984.
- Jo-Carroll's preferred use rate for heating and air conditioning were lowered in 1989.
- Jo-Carroll offers preferred use rates and cash sign up bonuses for controlled electric heating, air conditioning, and water heating.
- New electric heating products available today make it easier to add electric heat, or control existing electric heat.
- Jo-Carroll's 3.0 cents per kilowatt-hour Dual Fuel rate is equivalent to 51 cents per gallon of propane in a standard-efficiency propane furnace.

For more information about your energy choices, contact Jo-Carroll Electric.

Practice electrical safety

When you think of how many times a day you flip a switch or plug in an appliance, you realize how important electricity is in modern life. But you should also consider its potential for harm. Hundreds of people are electrocuted each year, and about 15 percent of all home fires are caused by electrical problems.

The Consumer Product Safety Commission has been active this year promoting electrical safety. Part of this campaign is a home safety audit, a checklist for identifying and removing electrical hazards. The following tips can help prevent electrical accidents at home.



- Check the wattage of all bulbs in your light fixtures. A bulb of too high wattage can lead to fire through overheating. Be especially sure to check bulbs in hooded lamps that can trap heat. If you don't know the correct wattage for a fixture, use a bulb no higher than 60 watts.

- Check all lamp extension cords. Make sure they're not in traffic areas; aside from the obvious tripping hazards, a cord that is stepped on can become frayed, leading to a fire hazard. Also make sure furniture is not resting on cords. Replace any cords that are cracked or frayed. Cords should not be wrapped around themselves, nor should they be attached to walls with nails or staples.

- Extension cords that are not in use should be equipped with safety covers so children or pets won't be shocked. Don't overload extension cords; check the rating of both the cord and the appliance to make sure they're compatible and remember extension cords should only be a temporary measure.

- Check heating equipment. All heating appliances should bear the label of a recognized testing agency, such as Underwriters Laboratories Inc. (UL). Keep heaters on a stable surface so they won't tip over, and make sure they're away from drapes and other combustibles. If the heater has a three-pronged plug, don't defeat the purpose of the ground by snipping it. Attach the adaptor's ground wire or tab to the outlet.

- Check kitchen appliances. Countertop appliances should be unplugged when not in use, and placed so that cords will not come in contact with water or any source of heat. Large appliances should operate without excess vibration or movement; if they vibrate, have them checked. Keep combustibles from your stove-top range.

- Check your bathroom. All electrical appliances, including hair dryers, curling irons and razors should be unplugged when not in use. They should be used near water as little as possible—even a switched-off appliance can cause electrocution if it falls into water while plugged in. Don't use portable heaters in a bathroom. The combination of water and many grounded surfaces make a bathroom a risky place to use a heater.

- Check your bedrooms. If you have an electric blanket, make sure it is free of cracks or breaks in wiring, plugs and connectors. Check for charred spots on both sides of the blanket—these indicate that there is a problem. Nothing should be covering an electric blanket that is in use, nor should it be folded back; this can cause overheating.

- Check your garage, basement and workshop. All your power tools should be equipped with three-pronged plugs or be double-insulated to minimize the chances of electric shock. Consider replacing older tools that don't have these safety features.

Norman Bohnsack

- Check your wall outlets and switches all of them should be working properly, and any not in use should be equipped with safety covers. All outlets and switches should fit snugly; a loose plug can cause overheating.

- Check television sets, radios and other entertaining equipment. They should all be placed where the cords are away from traffic and where the air can circulate freely around equipment. Make sure the cords are in good condition and placed well away from any leakage or sources of water.

- Check your fuse box or circuit breaker box. Make sure fuses are the right size. If you have circuit breakers, "exercise" them periodically by turning them on and off about a dozen times. It's a good idea to have ground fault circuit inter-

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

rupters to prevent electrocutions, and they are required for some interior locations according to GFC codes. If you have GFCIs, test them periodically, following manufacturers' instructions.

- Check outdoor receptacles. Each receptacle should have its own waterproof cover. Current building codes require GFCIs on outdoor circuits. If your house was built before these codes took effect, consider having GFCIs installed as a safety measure.

- Check lawn and garden tools. All cords should be in good condition. Have cracked or damaged cords replaced. Any equipment that operates erratically or abnormally should be repaired or replaced. When using extension cords outdoors, make sure they are rated for this use. Tools that are equipped with three-pronged plugs should be used only with extension cords made for three-pronged plugs. Don't bypass this safety circuit.

Peak alert time is upon us

Help control energy rates by trimming peak demand

Did you realize that a large percentage of your electric bill is used to pay for "peak demand" charges. Jo-Carroll is billed by Dairyland power Cooperative for each kilowatt-hour of power used by members, but the peak demand charges are only measured on the coldest winter evenings between 5 p.m. and 7 p.m.

Each member can help by turning off unnecessary electrical items, or lowering thermostat settings, or not using the clothes dryer or dishwasher until after the peak time is over. The peaks will occur on evenings when the wind chill is below minus 10 degrees, between 5 p.m. and 7 p.m. Listen to WJOD-FM in Jo-Daviess County or WCCI-FM in Carroll County for Jo-Carroll-sponsored peak alert messages on really cold evenings.

By changing your electrical use patterns a little bit, you can help your cooperative save you money on the electric rates.



Jo-Carroll Electric Cooperative Satellite TV Programming

16 PACKAGES TO CHOOSE FROM \$15.00 HOOKUP FEE

NEW **Satellite Sports Network**
9-Count 'Em-9
Channels
F1-7, F1-10, F1-11, F1-24, F4-6.
F4-20, F4-22, G3-21, W5-20
NEW **\$7.95 per month**

NEW **Basic Package - \$9.95 per month**
G1-3 WGN Superstation-Chicago **G1-18 WTBS Superstation Atlanta**
S3-9 WPIX Superstation New York **S3-5 KTVT Superstation Dallas**
G1-11 The Family Channel **G1-7 CNN News**
G1-8 CNN Headline News **G1-9 ESPN All Sports Network**
F3-17 Lifetime **G3-13 The Weather Channel**
G3-19 Nickelodeon-East Feed **G1-21 USA Network-East Feed**
G3-22 Nickelodeon-West Feed **F3-10 USA Network-West Feed**

HBO/Cinemax/Disney - All six feeds - \$20.95 per month
Disney East and West Feeds G1-4 & G1-24 - \$7.95 per month
HBO East and West Feeds F3-13 & G1-23 - \$7.95 per month
Cinemax East and West Feeds G1-19 & F3-23 - \$7.95 per month
HBO/Cinemax All Four Feeds - \$14.95 per month
HBO/Disney All Four Feeds - \$14.95 per month
Cinemax/Disney All Four Feeds - \$14.95 per month
S3-19 Starion Premier Cinema - \$9.95 per month
G2-2 Stardust Theatre - \$5.50 per month

G1-12 Arts and Entertainment - \$0.50 per month (only with Basic)
G1-18 WTBS Superstation Atlanta - \$1.75 per month
Prime Time 24 - \$3.95 per month
F2-4 WABC-ABC New York **F2-2 WBBM-CBS Chicago**
F2-12 WXIA-NBC Atlanta

Superstar Plus - \$3.00 per month
G1-15 WWOR New York/F4-7 WSBK Boston/S3-15 KTLA Los Angeles
F1-2-4-6-12-14 Netlink - \$5.95 per month

Phone (815)858-2207 for instant hookup
Special Offer - One month of free Basic Package for all new subscribers during January and February of 1990.

Director election

The nominating committees for Director Districts 2, 6 and 9 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 2: Elmer Malon (incumbent) — 3A-193 Gen. Bragg, Apple River, IL 61001; Steve Koehn — 3867 E. Lake, Scales Mound, IL 61075; and Blenda Wienan — 4472 West Stagecoach, Galena, IL 61036.

District 6: Fred Randecker — Box 287, Mt. Carroll, IL 61053; Robert Knuth — 13501 Diehl Rd., Savanna, IL 61074; and Tom Lundy — 6701 Airhart Rd., Savanna, IL 61074.

District 9: John Janssen (incumbent) — RR 2, Chadwick, IL 61014; and Mary Schneider — Mt. Carroll, IL 61053.

You may live or work in town, but you're still an electric cooperative member

For more than 50 years, the words "electric cooperative" have summoned images of farms and country homes changing over from kerosene lamps to clean, efficient electricity.

However, there has been a shift in recent years as the number of farms decreases and new subdivisions grow into rural areas served by electric cooperatives. New industries have also developed in these territories.

As a consumer-member, you have a voice in your cooperative's operation. Each member owns an equal share of the cooperative unlike an investor-owned utility.

The members elect a board of directors, which hires the manager and sets policies. The manager supervises the staff of employees, making sure that you are served a reliable flow of electricity as economically as possible.

In a cooperative, you're not just a customer—you're one of the bosses.

Electric motor kwh usage

Al Bierbaum, chief engineer of the Iowa Association of Electric Cooperatives, offers the following to estimate the usage for electric motors.

The most common kind and size electric motor in appliances and tools is the single-phase, fractional horsepower induction type. Those of one-half horsepower or less operate at about 50 percent efficiency. That is, only 50 percent of the electricity is used to turn the motor, the other 50 percent is wasted as heat.

Those from one-half to one horsepower operate at about 65 percent efficiency. Larger single-phase motors are about 75 percent efficient.

The most-used formula for estimating motor energy consumption is:

$$\frac{\text{horsepower} \times .746 \text{ kw}}{\text{efficiency factor}} = \text{kilowatt-hours}$$

Using the efficiency factors above, he has developed the following table for single-phase, induction motors:

Motor rating	Operating wattage	Kilowatt hours/hour
1/6 h.p.	249	.25
1/4 h.p.	373	.37
1/3 h.p.	507	.51
1/2 h.p.	747	.75
3/4 h.p.	860	.86
1 h.p.	995	1.0
1.5 h.p.	1492	1.5
2 h.p.	1989	2.0
3 h.p.	2984	3.0

Three-phase motors are assumed to operate at 95 percent efficiency.

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Annual meeting program

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

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

11:45 a.m.
Drawings for early bird prize of \$50 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.

1:00 p.m.—Call to orderRichard Reusch, President
Pledge of allegiance to the Flag

1:05 p.m. Invocation Father Anger,
St. John the Evangelist Catholic Church, Hanover

1:10 p.m. Welcome AddressDon Schaible, Mayor of Hanover

1:15 p.m. Introduction of Special Guests

and EmployeesConnie Shireman, General Manager

Reading of Notice of MeetingLeonard Ricke, Secretary

Reading of Minutes of Last MeetingLeonard Ricke, Secretary

Report of Officers:

PresidentRichard Reusch

TreasurerJohn Janssen

ManagerConnie M. Shireman

Special Guest SpeakerJoan Johanson, Iowa's Erma Bombeck

Report of Director ElectionChairman,

Credentials and Election Committee

Awarding of Attendance PrizesCarol Calahan and Dorothy Young



Johanson

The speaker for your annual meeting, Joan Johanson of Gowrie, Iowa, has been described as "Iowa's Erma Bombeck."

In hundreds of appearances in the United States and Canada, Joan not only brings laughter, but leaves a sense of betterment, a happier frame of mind, and a message not quickly forgotten: "Humor can lead to a happier, healthier, and more successful life."

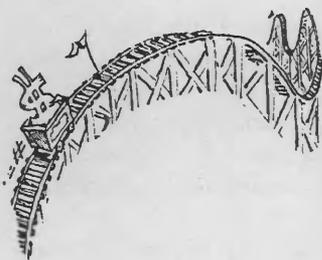
Joan is a lady who is happy her husband can't fix anything, consequently, everything in her home works. She's a mother, torn between loving her two children and wanting to sell them. She's typically a woman, fussing about "growing old," so when she comes out of the bathroom shower, she's glad the full length

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Safety is a top priority at Jo-Carroll Electric—the safety of our employees and the safety of the general public. The cooperative's safety program has won the coveted Safety Accreditation Award for a six-year period, and we plan to win this again in 1992. One of the strengths of our program involves a monthly safety meeting, where safety topics of every description are presented and discussed. In this photo, Stan Bissen, assistant system control supervisor from Dairyland Power in LaCrosse, speaks to the Jo-Carroll crew about the safe operation of the 69,000-volt switches located in Jo-Daviess and Carroll counties. Since the Jo-Carroll and Dairyland Power lines are interconnected, we coordinate with DPC on switching operations.

Tired of the heating bill roller coaster ride?



Propane gas and fuel oil prices are on the way up again, and they're never down for long! In fact, some have more than doubled since the heating season began!

But heating *electrically*—with all its advantages of safety, cleanliness and quiet comfort—lets you budget smoothly through the season, with stable prices and low, off-peak rates to save you even more money.

Get away from the ups and downs of heating bills. Contact Jo-Carroll Electric Cooperative today!

Member survey

During the next few weeks, Dairyland Power Cooperative, wholesale power supplier for Jo-Carroll, will be conducting a mail member survey. The survey questionnaire will go to about 450 of Jo-Carroll's members.

Information the survey will be asking will include the attitudes and opinions of our members, as well as detailed questions about energy usage patterns and appliances in use at the residence. Dairyland Power will use the survey information to evaluate the energy needs of its service area, as well as project the long-term trends and patterns of energy use. If you receive a survey form, please make every attempt to answer the questions as completely as possible. Serving the energy needs of our memberships is our No. 1 goal, and this survey is a small tool to help plan for the future.

James E. Foley

If it blinks—it's working

Jo-Carroll Electric is served by a complex system of electric distribution lines subject to many possible occurrences that cause momentary outages or "blinks."

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 against the 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, the cooperative line crews will be dispatched to clear the line. Were it 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 realize these blinks are a nuisance to our member because of the need to reset digital clocks and VCRs, etc. 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. Jo-Carroll Electric regrets these inconveniences, but is pleased that not all "blinks" were 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 most cases, if it were not for the clocks you would never know the power had "flickered" or gone off for a short time.

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 on the main lines, please contact us—we'll be out to cut the limbs out of the lines.

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

Dual Fuel a wise choice

Many members have taken advantage of the low rates for controlled electric use, and many more have inquired since the jump in L.P. gas prices. Jo-Carroll has not had a rate increase since May of 1984, and the cooperative lowered the price for dual fuel this past summer. In case you've forgotten, this is the ad we ran in June of 1989:

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.

Call Your Cooperative !!!

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

Electricity proves safest source of energy

The Energy Research Group (ERG), Waltham, Massachusetts, recently completed a study of the risks associated with use of various residential energy sources. The findings show that electricity is the safest fuel for use in the home. Risk of fatality from the use of wood or coal-fired systems is 15 times greater than from electricity. Gas-fired systems are nearly two-and-a-half times more dangerous than electric systems. The summary table represents the results of the risk assessment.

Annual risk of fatality per million homes from residential energy use by fuel type

Form or risk	Gas-Fueled	Solid-Fueled	Liquid-Fueled	Electric-Powered
SPACE HEATING				
- Fire	10	81	20	7
- Gaseous Poisoning	10	4	1	n/r
- Electrocution	<u>n/r</u>	<u>n/r</u>	<u>n/r</u>	<u>n/c</u>
Space Heating Total	20	85	21	7
COOKING				
- Fire	3	70	n/a	4
- Gaseous Poisoning	0	n/c	n/a	n/r
- Radon	0	n/r	n/a	n/r
- Electrocution	<u>n/r</u>	<u>n/r</u>	<u>n/a</u>	<u>n/c</u>
Cooking Total	3	70	n/a	4
WATER HEATING				
- Fire	1	n/c	1	n/c
- Gaseous Poisoning	0	n/c	n/c	n/r
- Electrocution	<u>n/r</u>	<u>n/r</u>	<u>n/r</u>	<u>n/c</u>
Water Heating Total	1	0	1	0
TOTAL	24	155	22	11

n/r: No risk correlation is found between the fuel type and the corresponding home activity. ERG therefore classifies the fuel type as having no risk of fatality in the home.

n/c: The risk is found to be so small ERG classifies the fuel type as a non-contributor to the risk of fatality.

n/a: Since no cooking appliances are found to be liquid-fueled. ERG therefore classified liquid fuel as not applicable to our assessment of risk related to home cooking.

NOTE: Risks are calculated based on 1985 data and a national average of 2.69 persons per household.

(Continued from page 16a)

mirror is all steamed over!

She has blended family life, a 19-year career in the telephone industry, active involvement in community and Iowa activities, still maintains a "perpetual student" status, and then—at an age when most people discover wrinkles—she initiated a "wrinkle" of her own by becoming an entrepreneur with her Joan Johanson Enterprises as a humorist speaker and expanding her teaching with seminars.

Some speakers educate—others motivate—still others entertain. Joan does all three. George Burns said, "Someone who makes you laugh is a comedian. Someone who makes you think and then laugh is a humorist." When you meet and listen to this fun loving, spunky lady, you will meet genuine enthusiasm, warmth, friendliness and joy in living.

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.

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Shireman

Receiving the monthly electric billing from Jo-Carroll is probably not regarded as a pleasure by most members. At times members may say, "How could my bill be this much?" or "Was the power I used really worth what I'm paying?" This is understandable; most of us suffer from "sticker shock" when buying many items.

Jo-Carroll has been fortunate enough to operate nearly six years without a rate increase, so our members have not had to deal with any "rate shock." However, we often forget the real power we are purchasing with each kilowatt-hour, which costs only 7.7 cents from Jo-Carroll. The following are some examples of what it would take for a person to duplicate the power that is available at the "click of a switch."

In a home, a person would have to beat a batter mixture at an incredible speed, steadily, for 10 hours to generate energy equal to one kilowatt-hour. Using an old-fashioned treadle sewing machine, a person would have to pedal at top speed for 13 hours to generate energy equal to one kilowatt-hour. A person shoveling snow off a driveway 10 feet wide does about 23 foot pounds of work per shovelful. (Assuming one cubic foot of snow equals six pounds per shovelful.) A person would have to clear a driveway two miles long to generate energy equal to one kilowatt-hour. Imagine a 150-pound person climbing a 1,000-foot flight of stairs. He would have to climb the stairs nearly 18 times to generate energy equal to one kilowatt-hour. At Jo-Carroll's present rate of 7.7 cents per kilowatt-hour, it certainly seems a bargain to let electric energy do our work.

Another way to put the cost of electricity in perspective is to take a look at the costs of electricity and compare it to other costs:

The Cost

- of an electric blanket
- of one-half sheet of plywood
- of one pound of sirloin steak
- of a flashlight battery
- of a record album
- of one pound of coffee
- of a loaf of bread
- of a typical magazine
- of 12 square feet of carpet

Comparison

- will pay for the electricity to operate it for one year.
- will operate the electric saw used to cut it for one week.
- will pay for the electricity used by the skillet to cook it for over 50 hours.
- will pay for enough electricity to operate a clock radio for 117 hours.
- will pay for the electricity to operate the stereo to play it for over 650 hours.
- will operate the electric percolator for nearly 70 hours.
- will pay to operate a toaster for five months.
- will pay for the electricity for a 100-watt lightbulb to read it for over 250 hours.
- will operate the vacuum cleaner to clean it for 33 years.

We hope all of our members understand what the different lines and charges on the bill itself are representing. We have attempted to make the bill as easy to understand as possible, but it may be confusing to some of our members, so we have printed a sample bill in this issue, with an explanation of each line. If any members have any question about the monthly billing, do not hesitate to contact the Jo-Carroll office.

The electric bill

Know what each part represents

On the opposite page is a sample of a "typical" electric bill from Jo-Carroll Electric Cooperative. This bill is based on 1,000 kilowatt-hour usage, which is close to the "average" bill, but does not necessarily represent any particular household. Kilowatt-hour usage will vary greatly according to the amount and type of devices used that are powered by electricity and the amount of time they are used.

1. Member's name, mailing address and membership number—This name represents who has the membership in the Cooperative. This person is responsible for payment of the bill, and capital credits are accrued under this membership number. This may be a joint membership such as a husband and wife, or the name of a business.
2. Account number—This is the map location number. Our maps are set up to identify individual services, using a code number like this, and our crews utilize these numbers rather than addresses. It is helpful to use this number when reporting an outage.
3. Billing number—This is the number used for all billing information in the computer. In Jo-Carroll's office is a remote terminal, tied directly to the central computer by telephone lines. Our office personnel inputs all the meter readings and other information into the remote terminal and the bills are calculated and printed in LaCrosse, Wisconsin, by Dairyland Power Cooperative.
4. Billing date—The day the bill was printed.
5. Please pay on or before—The last date the payment may be received in our office without receiving a late payment charge. The penalty for late payment is 5 percent of the amount of the bill.
6. Amount of bill—This is the amount due if received in our office on or before the 15th.
7. After 15th pay—The date the late payment charge is assessed, and the amount due if payment is late.
8. Statement—This area shows the amount of the last bill and the payment made. The balance forward will be zero if the previous bill was paid in full.
9. Days of service—The total number of days in the billing period.
10. From-to—The actual dates the meter was read.
11. Facility charge—This charge is \$10.00 for single-phase service and higher for larger services. This charge covers the cost of our providing the necessary facilities (equipment) to receive electric service, such as poles, wires, transformers, meters, etc.
12. Readings—The actual meter readings taken at your location on the dates above.
13. Kwh's used—The total number of kilowatt-hours used during the billing period, multiplied by the rate.
14. Power cost adjustment—Based on the cost to produce the electricity by Dairyland Power Cooperative, the PCA will be either a charge or a credit. If a credit, a minus sign will be in front of it and it will be subtracted from the bill. The rate schedule account for a certain level of cost to make power and any more or less than that amount will be divided on a per kilowatt-hour basis.
15. Total electric service—This is the total of facility, PCA and Kwh charges for the month.
16. Load control refund—A credit of \$3 for having a control installed on electric water heaters, a savings all members should be taking advantage of. This area could also show charges for a rental security light.
17. State tax—The Illinois public utility tax is .0032 per kwh. This money is sent to Springfield.
18. Meter No.—This is the actual serial number of the meter at your location.
19. R 1—The rate schedule the account is billed under.

Don't forget the state tax

IF YOU HAVE ANY QUESTIONS ABOUT THIS BILL CONTACT:
JO-CARROLL ELECTRIC COOPERATIVE
 P.O. BOX 390, 793 US ROUTE 20 WEST
 ELIZABETH, IL 61028
 TELEPHONE: 815-858-3311



3 BILLING NUMBER 1234567890
 4 BILLING DATE 10/25/89
 PLEASE PAY
 5 ON OR BEFORE 11/15/89
 6 88.00
 7 AFTER 11/15 92.40

21 WE NEED YOUR SOCIAL SECURITY OR FEDERAL ID NUMBER FOR OUR RECORDS. THANK YOU FOR HELPING US UPDATE THESE RECORDS.
 SOCIAL SECURITY OR ID # _____

1 JOHN/JANE SMITH
 123 USA
 HOMETOWN IL 61028

1 09999 A
 2A11000011 2
 18 87654321

PLEASE RETURN THIS PORTION WITH YOUR PAYMENT. THANK YOU.

1 JOHN/JANE SMITH
 2 ACCOUNT NO. 2A11000011
 3 BILLING NO. 1234567890
 MEMBER NO. 09999
 1 DAYS OF SERVICE R 33 R 19
 9 FROM 09/15/89 TO 10/17/89
 10

STATEMENT
 PREV BALANCE 88.29
 PAYMENT ON 10/03 8 -88.29 THANK YOU
 BALANCE FORWARD 0.00

HEADINGS		MULTIPLIER	KWH'S USED	TYPE OF SERVICE	
CURRENT	PRIOR				
18 METER #87654321				FACILITY CHARGE	10.00 11
12 28888	27888	0	1000	KWH AT .07700	77.00 13
			1000	PCA AT .00080	.80 14
				TOTAL ELECTRIC SERVICE	87.80 15
				LOAD CQNTROL REFUND	-3.00 18
				1000 KWH AT 0.32% CONSUMPTION TAX	-3.20 17
				TOTAL CURRENT BILLING	88.00 6

2 YOUR SERVICE LOCATION: 2A11000011
 20 ALL BILLS ARE DUE IN OUR OFFICE BY 4 PM ON THE 15TH TO AVOID A LATE PAYMENT CHARGE.

ON OR BEFORE 11/15/89
 PAY 88.00 6
 AFTER 11/15/89
 PAY 92.40 7

REC JO CARROLL ELECTRIC COOPERATIVE 815-858-3311 1234567890 3
 KEEP THIS PORTION FOR YOUR RECORDS

20. Message file—Messages are printed in this area, normally a reminder to pay the amount due on time. **Donald Culbertson**
 21. Quick bill messages—This area can be used for a message on all bills or just for people whose information on a certain file is missing.

Attention: Farmers, electrical contractors, grain bin distributors

Jo-Carroll wants you to be aware of new changes in the National Electric Safety Code that have come about with its 1990 edition. These changes specifically address the placement of grain bins in relation to overhead power lines; whether alongside the road, up a lane, across country, etc.

Before your site location is final please contact the Jo-Carroll Engineering Department as to placement of the bin to determine the distance needed from the overhead power lines.

Failure to do so will result in additional charges to you or the owner of the bins if the cooperative is required to alter its facilities accommodating the grain bins to comply with the National Electric Safety Code.

Please don't hesitate to contact our Engineering Department.
We want to help your installation, not hinder it!

Complications with gas furnaces

High-efficiency gas and propane furnaces use secondary-condensing heat exchangers to remove waste heat from the exhaust gases and boost efficiency to more than 80 percent. Although this eliminates the need for a high-temperature chimney, it significantly increases the complexity of your home heating system.

More parts means more opportunities for something to break, fail, or otherwise disappoint the purchaser. A Canadian study of 600 reported complaints by purchasers of high-efficiency furnaces reported the follow major problems:(1) system shutdown due to component failure or unnecessary activation of safety switches (57%); (2) improper installation (16%); (3) furnace noise (7%); (4) service and maintenance (6%); (5) Condensation, corrosion or discomfort (14%).

from Residential Heating Systems by Ned Nisson



**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.

Reader prize

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Jo-Carroll Hi-Lines

Jo-Ca

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

MANAGER'S REPORT by Connie M. Shireman



Shireman

Jo-Carroll member consumers liked the news they heard Saturday, March 10, at the 51st annual meeting in Hanover. Jo-Carroll Electric leaders announced that consumers can expect to go another year without a rate increase.

Speaking to more than 450 cooperative members and guests at River Ridge School, manager Connie Shireman said that this will be the sixth straight year with no increase in electric rates.

"We cannot promise to go without a rate increase forever, but your board of directors, management and staff are doing everything they can to hold the line on rate increases," Shireman said. "One important tool in keeping rates down is our load management programs. Not only did we not have a rate increase on the Dual Fuel rate in 1989, we actually lowered the rate for controlled electric heating and included the ability to use air conditioning at reduced electrical rates!"

The manager urged cooperative members to fully utilize the services of the utility that they jointly own.

"If you owned part of a store, that's probably where you would shop," Shireman noted. "As members of Jo-Carroll, you are also the owners and you should consider purchasing your energy needs from where you are an owner."

As proof of ownership, the manager emphasized that during December,



Consumer-members of Jo-Carroll Electric Cooperative have elected two new directors and one incumbent to three-year terms on co-op's board of directors. Cooperative manager Connie Shireman, second from left, welcomes the two new directors to the board. From left are incumbent director John Janssen, Chadwick; Shireman, Blenda Wiene, Galena; and Tom Lundy, Savanna. Longtime directors Elmer Malon, Apple River, and Ward Dangel, Savanna, each retired from the board. The results of election, which was conducted by mail ballot, were announced Saturday, March 10, at Jo-Carroll's 51st annual meeting in Hanover. More than 450 members and guests participated in the meeting.

cooperative members received checks totalling \$138,118 in capital credits for 1966. "Because Jo-Carroll Electric is a non-profit, member-owned utility, any margins or "profits" are returned to the members," Shireman noted.

"Over the years, your cooperative has returned nearly \$600,000 in margins to you, the members," she noted. "This is another good reason why you should utilize your cooperative's services."

Jo-Carroll President Richard Reusch of Elizabeth told the members that their organization is in excellent condition, but will face many challenges in the 1990s. Jo-Carroll's power supplier, Dairyland Power Cooperative, is currently studying its future power supply needs and projects that an additional power generation facility may be required after the year 2000.

A second challenge, he noted, is the need to upgrade and maintain the cooperative's electric distribution system, rebuild old lines and make service available to the rapidly-growing areas in Jo-Daviess and Carroll counties.

"The cooperative way of organizing a business becomes very valuable when considering important decisions like these," Reusch said. "The board of directors is elected directly from the membership by their friends and neighbors from the various districts, and the directors are all members, so this ensures that the decisions they make will benefit all Jo-Carroll members."

Treasurer John Janssen, Chadwick, reported that Jo-Carroll Electric's membership is diverse and changing. During the cooperative's early years, most members were farmers, he noted, but last year only 32.1 percent of Jo-Carroll's electricity sales went to farms. About 47.3 percent of the cooperative's sales were made to members in rural homes or houses in rural developments.

"We are a changing cooperative, but this is still a co-op," Janssen said. "It's yours and it's mine."

During the meeting, members learned the results of a cooperative director election conducted earlier by mail. Incumbent John Janssen of Chadwick (District 9), who has served on the Jo-Carroll board since 1979, was reelected to the board. Ward Dangel, Savanna, retired after serving 28 years on the board in District 6. Replacing him is Tom Lundy of Savanna. Elmer Malon, Apple River, also retired from the board after serving as a director since 1977. He is replaced by Blenda Wiene, Galena. All three were elected to three-year board terms.

Following the business meeting, the directors met in a reorganizational session and elected officers for 1990. Reusch was reelected board president and Charles Flikkema, Lanark, was renamed vice president. Leonard Ricke, East Dubuque, was reelected secretary and Janssen was returned as treasurer.

Jo-Carroll Electric Cooperative serves 4,429 consumer-members on 1,014 miles of electric lines in Jo-Daviess and Carroll counties.



Those at the meeting follow a report in their annual meeting booklets.



Joan Johanson, a humorist from Gowrie, Iowa, practices her brand of "audience participation" humor.



A happy winner receives his attendance prize, an electric skillet.



**Richard Reusch,
president**



**John Janssen,
director**



**Connie Shireman,
manager**



**Leonard Ricke,
secretary**

New technology helps save money

Editor's note: This appeared in the April 1990 issue of the Territory Times. The information is applicable to all Jo-Carroll Electric members.

A European heating technology. Electric Thermal Storage Heating (ETS), was introduced in the Galena Territory in January, and can help property owners save on their heating and air conditioning costs.

ETS is a clean, safe, comfortable and reliable heating method used in Europe for many years. Developed due to the lack of electrical generation following World War II, the units are now being manufactured in America.

Three Galena Territory group home units had the ETS heaters installed. Two townhomes and a settler's cottage were able to take advantage of the new technology by having two conventional baseboard heaters removed and two ETS units installed in their place.

The savings are accomplished through a lower electrical rate offered by Jo-Carroll Electric Cooperative of Elizabeth. **Juanita Grindstaff**

The cooperative is involved in a load management program, designed to make maximum use of electricity throughout the day and night, instead of during periods

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of peak demand. the ETS units are designed to "store" electric heat to be used during the peak times.

Jo-Carroll's load management program involves the use of radio controlled switches that turn off the electric heat during the peak times. The existing baseboard electric heaters, the new ETS units and the air conditioning can all be included on the lower rate schedule, which is 61 percent less than the normal electric rate.

Many of the Galena Territory group units have a history of large electrical consumption during the winter months, and the heat storage program is a way to lower the higher electric bills.

Another advantage of the heat storage units is that in case of an electrical outage, the units continue to heat during the time the electricity is off because of the heat stored within the cabinets.

The installation on the Galena Territory group units was relatively easy because the existing baseboard heating wires were already in place. But the technology is applicable to homes heated with gas or oil as well.

The recent installations were performed by a local electrician, with the help of Jo-Carroll's service men. The cooperative performed an energy analysis of the units prior to the installation, which showed the amount of savings available for each unit.

The homes that had the installations are on the rental program, so comfort was an essential consideration, and the proper sizing of the ETS units assured the renters would not suffer any discomfort during the time the units were turned off.

In addition to the 61 percent less rate, Jo-Carroll offers cash incentives to its members who install ETS units. The units can be purchased through Jo-Carroll or local electricians and supply houses. It is recommended that the cooperative be notified prior to the installation so that the ETS units can be properly sized, and a payback can be calculated.

Don Schleicher, Jo-Carroll's marketing director, would welcome any inquiries about this program.



The separate meter for the electric heat



Don Schleicher, marketing director for Jo-Carroll Electric Cooperative, (right) and Dave Diercks of Moose Jaw Electric discuss the equipment sizing and payback for a rental townhome installation of an Electric Thermal Storage Heating (ETS) unit. In the background is the recently installed ETS unit. These units are designed to achieve maximum comfort while blending in with the ambience of the home. This program is available to all Jo-Carroll Electric members in the Galena Territory.

Jo-Carroll Hi-Lines

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

MANAGER'S REPORT by Connie M. Shireman

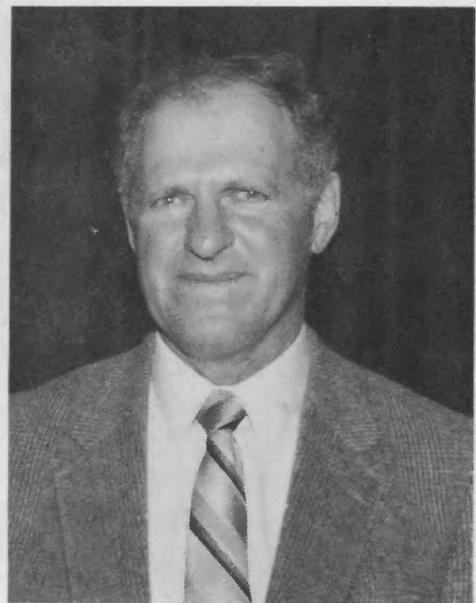


Shireman

New directors



Blenda D. Wienen



Tom Lundy

Blenda Wienen of rural Galena was elected to represent the membership from District 2 at Jo-Carroll's annual meeting in March. Blenda, who is a life long resident of the Galena area, is retired from Interstate Power Company. She worked in the office and also read electric meters until her retirement last year. Blenda's husband, John, works for Galena Stone Company. The Wienens have two daughters: Denise, who is a survey technician in the Galena area, and Wanda, who does research work for Maize Products in Hammond, Indiana. Blenda is a Scales Mound Lioness and a member of St. Mary's Parish in Galena. Her hobbies include gardening, travel, golf and fishing. She replaces Elmer Malon, who was on the Jo-Carroll board for more than 10 years. (District 2 includes parts of Rawlings, Vinegar Hill, Council Hill, Scales Mound, Guilford, Apple River, Thompson, Warren, and Rush townships).

Tom Lundy, a lifelong resident of rural Savanna, was elected to represent the membership from District 6 during Jo-Carroll Electric Cooperative's annual meeting in March. Tom and his wife, Priscilla, are actively engaged in farming. Their primary crops are corn and soybeans, but they also have beef cattle, hogs, and a few sheep. The Lundys have four children: a son who is a foreman with the Soo Railroad, two school-age daughters, and their youngest son, who helps them with their farming operation. Tom, who has a college degree in chemistry, enjoys woodworking and carpentry as a hobby. He is also on the church council of the Trinity Lutheran Church in Derinda. He replaces Ward Dangel, who was a director on the Jo-Carroll board for more than 25 years. (This district includes the rural parts of Rice and Hanover townships and part of Elizabeth Township.)

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The ropes are in place, and one worker pulls on the rope to pull the tree away from the line, as the other worker uses the chain saw to cut the tree down.

Maintenance programs important

The on-going maintenance programs at Jo-Carroll Electric Cooperative are continuing this summer. These important maintenance functions are being performed by contractors and are a continuation of long-term programs. Both of these programs are vital to providing reliable electric service, by helping to reduce outage time and avoiding unnecessary service interruptions.

The right-of-way clearing program is being performed by Stetter's Tree Service and involve tree trimming. Many of the areas where Jo-Carroll Electric's lines run are in the private right-of-way. These areas are heavily forested, and it is important that trees do not come in contact with the line. When a tree or branch makes contact with the line, an outage or service interruption usually results.

A systematic approach to tree clearing has been undertaken by hiring the contractor. The firm started two years ago in the western part of our service area and is continuing to the east, following all of the overhead lines. The procedure they are following requires that they ask each landowner for permission to clear the brush, then measure a specified amount on either side of the overhead line. The area is then cleared of all brush and trees.

Trees coming in contact with the line not only cause power outages, but also contribute to the line loss. Line loss refers to the amount of kilowatt-hours lost in the transmission of electricity from the substation to the member's meter. By reducing the number of tree contacts, the cooperative not only reduces the number of power outages and interruptions, but also saves money.

The second maintenance program under way is the pole testing program, being conducted by the Osmose Company. This firm began pole testing for Jo-Carroll six years ago, starting in the southern part of our system and working

north, testing about 3,000 poles per year.

The pole test is accomplished by first "sounding" the pole by striking it with a hammer. A very bad pole will make a hollow sound, and if this is the case, the contractor will drill a hole in the pole to determine if it is rotten; if so it is marked as a dangerous pole. Danger poles are changed out as quickly as possible, because they are no longer able to withstand the weight of the wire and the forces of the wind.

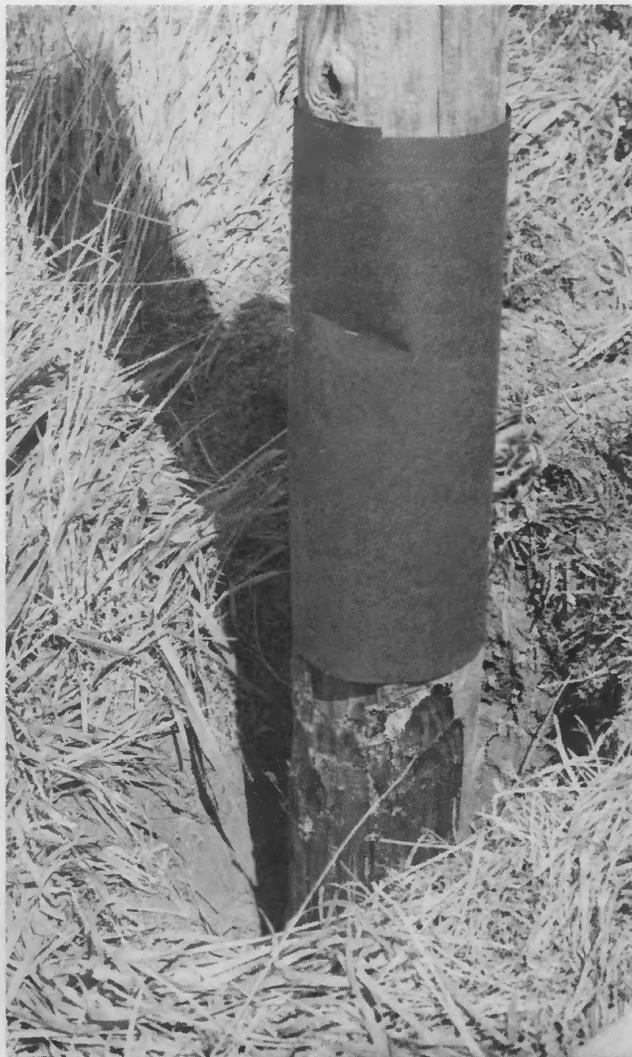
If the pole passes the sounding test, the pole treater will then dig around the base of the pole. The ground line is where the majority of the rotting or damage takes place. The excavated dirt is laid to one side, the pole is "shaved" back a bit, and the chemical treatment is applied. A piece of tar paper is then placed around the pole, and the pole is back filled.

This program is also very important in reducing outages, because a pole that falls will always result in a lengthy outage. It can be quite difficult to change a broken pole during a storm or at night. By pole testing, the bad poles are identified, and changed out under good weather circumstances. In addition to reducing outage time, the pole treatment portion of the program is instrumental in lengthening the life of the cooperative's overhead lines.

Maintenance programs such as these, and many others, are an important part of operating an electrical distribution system. It would not be a good business practice to wait until the trees fall into the line, or the poles fall over until you perform the repairs needed. It is by aggressively approaching the necessary system maintenance that the cooperative is able to continue to provide safe high quality service to our membership.



The pole has been excavated and the Osmose worker is applying the treatment.



The "tar paper" wrap is being placed at the ground line, the place where decay most frequently occurs.

Load management saves you money

The results of the 1989-1990 load control period have been tabulated by Dairyland Power Cooperative, the wholesale power supplier for Jo-Carroll Electric. The chart represents an average of the peak times that occurred on the days indicated during December, which were the coldest of the year. The numbers on the right side, 10.5 through 14, represent the number of megawatts used by all of Jo-Carroll's members totaled together from substation readings. The numbers along the bottom indicate the time of day.

Jo-Carroll is billed by Dairyland Power on a per kilowatt-hour basis, similar to how Jo-Carroll bills its members, and also on the basis of peak demand. The cost

of wholesale power is the largest single expense that Jo-Carroll incurs. The peak demand cost is more than 30 cents of every revenue dollar that Jo-Carroll receives from its members. The amount that Jo-Carroll is billed for peak demand is based on measurements taken during the coldest winter days, between the hours of 6 and 7 p.m.

In order to reduce this cost, Jo-Carroll has installed more than 1,800 load control devices on member's electric water heaters and heating systems. By turning off the controls prior to the peak demand period, Jo-Carroll can save on its wholesale power expense. More than \$215,000 was saved last winter during the peak demand period by turning off electric water heaters and heating systems.

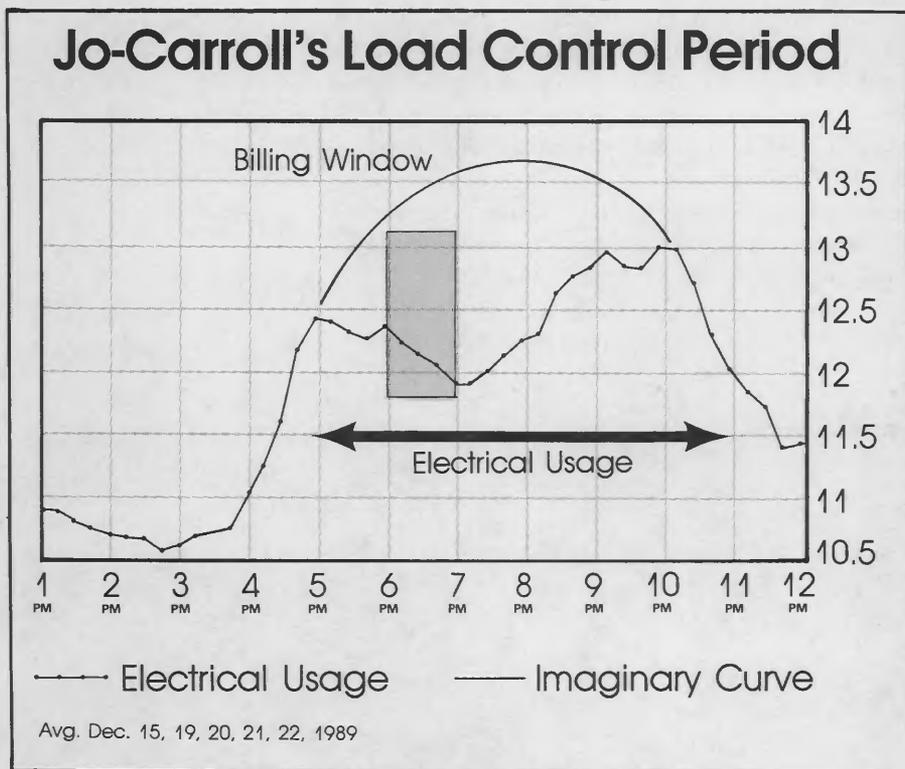
The electrical usage line on

the chart shows the number of megawatts used by all of Jo-Carroll's members. It begins a rapid climb around 4 p.m., and it starts to level off, and even drop from 5 through 7 p.m. The reason this line drops off, is because the load control devices have been activated, and the heating elements have been turned off in water heaters and electric heating systems. The line begins to climb again from 7 to 10 p.m., as some of the load control switches are being turned back on. The load control programs are designed not to cause any discomfort or lack of hot water to our members, so they are not turned off for the entire five-hour period.

The imaginary curve shown rising above the line indicating amount of electrical usage is what may have happened if we were not involved in load management program. The billing window is outlined to show when the peak demand measurements were made. As can be seen, what might have been a 13.5 megawatt peak, became in actuality a 12.25 megawatt peak, reducing the peak by 1,250,000 watts. This was considered to be a great success, and we are very pleased with the results. It is through this program, and other money saving measures that the cooperative has been able to operate for over six years without a rate increase. It is only through the cooperative efforts of all Jo-Carroll's employees and members that we are able to accomplish such significant savings.

Any members who have electric water heaters without load controls installed are urged to contact the cooperative office. Cash incentives and monthly credits are provided in addition to helping the cooperative to save on wholesale power costs. Low preferred usage rates are available to any members with electric heating that can be interrupted. Don Schleicher, Jo-Carroll's marketing director, can provide all the details for installation.

Roger Farrey



Jo-Carroll Hi-Lines

Jo-Ca

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

MANAGER'S REPORT by Connie M. Shireman



Shireman

Accuracy counts Your meter doesn't lie

One of the most accurate and dependable pieces of equipment made is mounted on your home or a nearby pedestal or pole.

Your electric usage meter records each kilowatt-hour of electricity you use with great precision.

Jo-Carroll Electric is committed to keeping all meters properly registering and recording usage on a timely and cost-efficient basis. To accomplish these goals, your cooperative has implemented several programs that allow the efficient and accurate collection of usage data.

Meter testing

Each year, 10 percent of the cooperative meters are changed out by Jo-Carroll employees and tests sent to an independent laboratory. The test lab checks the meter for accuracy, cleans, and calibrates the meter for re-use. Results of the yearly field tests consistently show very high meter-accuracy ratings.

Meter testing is conducted for the best interest of you and your cooperative. Accurate meters mean fewer usage adjustments and a more cost-effective and efficient method of doing business. A regular program of meter testing also ensures the soundness of the metering system.

In addition to regular field tests, meters that appear to be turning too fast or too slow—based on weather and the member's electric load—are tested when identified, so problems with the equipment can be corrected as quickly as possible.

Test meters are available from your cooperative for members who want to see how much electricity is used by a certain appliance or piece of equipment.

Meter readers

Another vital link in efficient usage data collection is Jo-Carroll's meter reader program.

Prior to 1983, cooperative members read their own meters and forwarded the reading to the office. Starting in 1983, billing records and other data were tabulated, stored and retrieved by computer, and the need for meter readers developed.

The move to computerized data processing and meter readers has not added to your bill, but it has kept costs below what they otherwise might have been. Greatly reduced labor requirements and paperwork involved are advantages to computerized billing.

Computerized data processing made it necessary for all meter readings and billing assessments to be entered and processed at the same time each month. Therefore, meter readers were hired to read meters on a regular monthly basis.

Without data processing, Jo-Carroll would need more employees in the billing department to handle the time-consuming process required to issue accurate bills to members and maintain their accounts. Combined with the savings of the computerized data processing system, the meter reading program is more economical for your cooperative than having members read their own meters.

Tamperproofing

Your electric metering equipment is designed to withstand the elements of nature, and more. However, meter tampering does occur, and it costs all members. Jo-Carroll encourages all members who see evidence of meter tampering to report all details to the office. Your meter readers are also on the lookout for loose or broken meter seals and other damage to cooperative equipment. A policy of charging \$50 for broken meter seals is in place for the protection of the cooperative and all its members. Our first priority is to make sure all service-related equipment functions properly. The result means savings to you.

If it blinks—it's working

Jo-Carroll Electric is served by a complex system of electric distribution lines subject to many possible occurrences that cause momentary outages or "blinks."

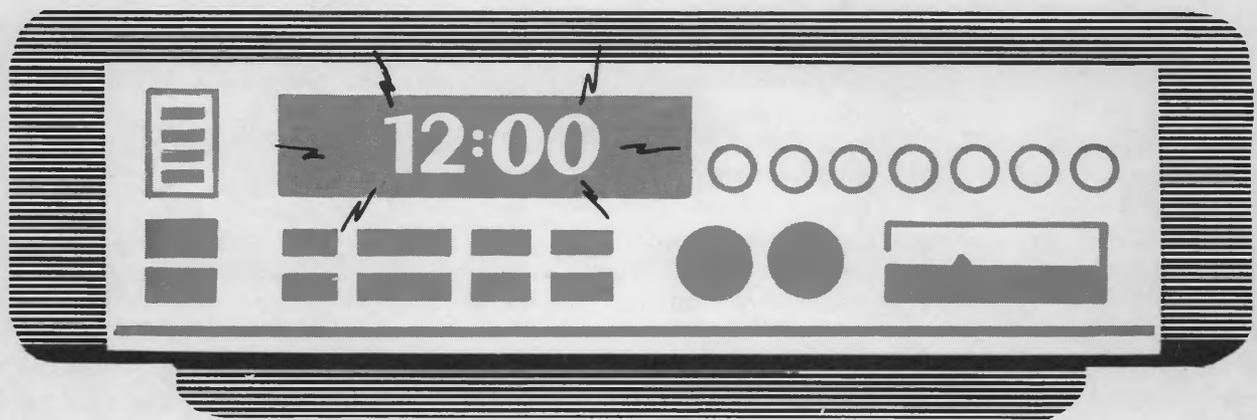
Blinks in your electric service are usually an indication that something has come in contact with the electric lines. Usually these problems can be traced to tree limbs, squirrels, birds, lightning and even cattle or horses rubbing against the guy wires. When the electric line senses a problem, the breaker (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, the cooperative line crews will be dispatched to clear the line. Were it 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 realize these blinks are a nuisance to our member because of the need to reset digital clocks and VCRs, etc. 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. Jo-Carroll Electric regrets these inconveniences, but is pleased that not all "blinks" were 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 most cases, if it were not for the clocks you would never know the power had "flickered" or gone off for a short time.

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 on the main lines, please contact us—we'll be out to cut the limbs out of the lines.

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



Surges, noise and other stuff

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 wouldn't have noticed with round or analog clocks (how do you teach a child the concept of clockwise and counter-clockwise with a digital clock) can disrupt our use of computers, video recorders and the other sophisticated electronic devices we now have in our homes.

There are several devices available for protecting your equipment. Knowing something about the cause of power interruptions can help you choose the right protection.

There are four main kinds of power disturbances that can affect electronic

equipment—surges or spikes (also called transients), noise, voltage fluctuation and power outages. Surges and noise account for nearly 90 percent of all power disturbances.

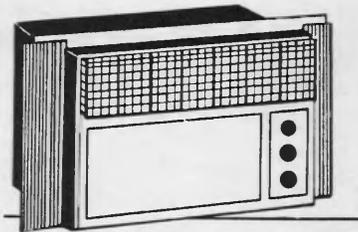
Sensitive electronic recording equipment is often needed to identify spikes or surges because they don't last long enough to be seen. These brief spikes can push voltage levels five to 10 times above normal. They can also cause computer programs to stop running, erase data stored in memory and damage computer hardware and other electronic equipment.

The most common cause of low-level spikes and surges is the switching on and off of household electric motors such as on air conditioners, furnace fans, pumps, etc. To make certain that electronic equipment is undisturbed, it should be connected to a specifically dedicated circuit and that circuit should be protected by a surge suppressor. At \$20 to \$60 these are the least costly of the protective devices.

These suppressors will also control electrical noise. This "noise" can be created by radio transmissions, fluorescent lights, light dimmers, etc. Noise can cause unexplained "glitches" in computer programs.

A routine power fluctuation of less than 30 milliseconds (1,000 milliseconds = 1 second) can cause computer memory loss and even costly equipment damage. Your eyes wouldn't even notice it. Voltage fluctuations are usually indicated by flickering or dimming lights, or a shrinking television screen. **Again, low or high voltage can result from overloaded household circuits or the starting of electric motors. Continued, uncorrected fluctuations can cause early failure of internal electronic parts. Power outages involve the total interruption of electricity and generally results from damage to the utility lines (lightning, auto wrecks, etc.) or from circuit overloads in the home.**

The crux of the matter is that most electronic equipment failures are caused from disturbances within the home. For the peace of mind of the owner and the protection of the electronic equipment, it is strongly recommended that it be connected to its own in-house electric circuit and that a surge suppressor or similar protective device be installed. *Aggie Wimmer*



Electricity can help wring out the air

Are there days during summer when the humidity is so high you could almost ring out the air like a wet towel?

One of your best household helpers, electricity, can do the job for you. An electric dehumidifier will remove 20, 30 or 40 pints of water from the air in your home, depending upon the capacity of the model you use.

In the summer, warm air holds more moisture, or humidity, than the cold air of winter. Summer's heat also causes your body to become warmer. And your body depends upon evaporation of skin moisture—perspiration—to keep itself cool.

However, if the air in your home is already moisture-laden perspiration does not evaporate so readily from your skin. As a result, you skin will feel clammy and your body feels warmer.

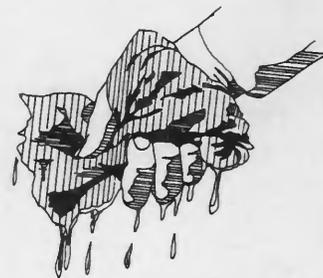
That is usually enough reason for people in humid climates to use electric dehumidifiers. But here are even greater benefits to controlling your home's humidity.

Your basement, bathroom

In the basement, excess moisture can condense on cold-water pipes, making them drip. The humidity can also encourage the growth of mildew, a spore that can damage leather goods, books and clothing, and give a musty smell to the basement. These spores also cause allergic reactions such as sneezing, watery eyes and runny noses in some persons.

In the bathroom, summer humidity is often increased by water spraying from shower heads or evaporating from wet towels. This high humidity produces the darkening or discoloration between tiles in the bathroom. Again, mildew spores and mold can develop, leading to reactions in some allergy-sensitive people.

The kitchen and laundry room can be other high-humidity areas where excess moisture in the air causes problems. Just as in recreation rooms and storage areas,



WHAT CAPACITY DO YOU NEED IN A DEHUMIDIFIER?

Values in table indicate dehumidification required in pints per 24 hours, based on the area of the space to be dehumidified and the conditions that would exist in that space when a dehumidifier is not in use.

CONDITION WITHOUT DEHUMIDIFICATION

CONDITION WITHOUT DEHUMIDIFICATION	AREA—SQ. FT.				
	500	1,000	1,500	2,000	2,500
During warm and humid outdoor conditions.	500	1,000	1,500	2,000	2,500
Moderately damp—Space feels damp and has musty odor only in humid weather.	10	14	18	22	26
Very damp—Space always feels damp and has musty odor. Damp spots show on walls and floor.	12	17	22	27	32
Wet—Space feels and smells wet. Walls or floor sweat, or seepage is present.	14	20	26	32	38
Extremely wet—Laundry drying, wet floor, high load conditions.	16	23	30	37	44

Dehumidification variables also include such other factors as climate, laundry equipment, number of family members, number of doors and windows, and degree and intensity of area activity.

humidity can lead to rusting metal, mildewing shoes and musty clothing, as well as general human discomfort.

Electricity to the rescue

What are some of the ways you can avoid these summer humidity problems? First, try to keep your windows and doors open enough to allow a good flow of air through the home, particularly high-humidity areas.

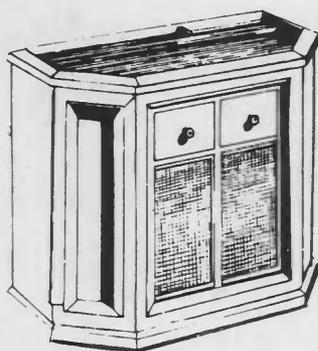
While natural ventilation can solve many of your humidity problems, properly placed electric vent fans in the kitchen, attic or laundry room will also help remove moisture.

Electric air conditioning units both cool the air and remove moisture. They actually take the heat and moisture from the home. A dehumidifier also pulls humidity from the air, but does not cool the air while doing so.

Look for these features

If you are considering buying a dehumidifier, here are some features to keep in mind:

- **Humidistats.** Like a thermostat controls temperature levels, a humidistat may be set to maintain a desired level of humidity.
- **Automatic shut-off.** This feature stops the unit when the drip container is full, preventing overflows.
- **Portability.** Although you may have several high-moisture areas in your home, modern electric dehumidifiers are portable enough for the average person to move them from room to room with ease.
- **Capacity.** What capacity dehumidifier will you need? Consult the accompanying chart, devised by the Association of Home Appliance Manufacturers.
- **Purchase costs.** While purchase costs for dehumidifiers will vary from manufacturer to manufacturer, expect to pay \$250 to \$400 for an average home model. Shopping around and looking for seasonal sales can save you money on the purchase.
- **Operating costs.** You may expect to pay between \$30 and \$140 in electricity costs for running your dehumidifier during the high-humidity season.



Office hours

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

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call 858-3311
24 hours a day

Reader prize

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Should your power go off . . .

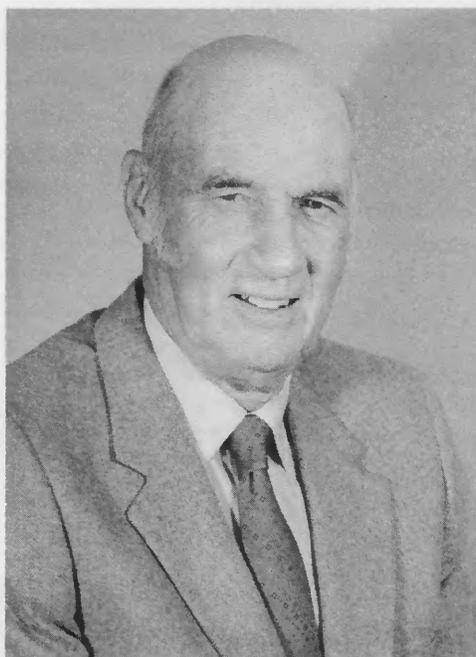
Check your circuit breakers or fuses. If possible, determine if your neighbors have electricity. Then call Jo-Carroll Electric at 858-3311. Please have your account number and location available so we may restore your service quicker.

Jo-Carroll Hi-Lines

Jo-Ca

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

In memorial
Morris W. Birkbeck
1909-1990



Jo-Carroll Electric Cooperative lost one of its early leaders when Morris W. Birkbeck, 81, of Council Hill died unexpectedly May 29, 1990, following a short illness.

Mr. Birkbeck was born on May 14, 1909, in Council Hill, son of Thomas and Florence Gray Birkbeck. He married Stella Temperly on October 25, 1933, in Galena. Survivors include his widow; a son, Gerald of Galena; four grandchildren; six great grandchildren; and a brother, Melvin of Council Hill. A lifelong resident of the Council Hill area, Mr. Birkbeck was a farmer. He was a member of the Council Hill Methodist Church and a past president of Farmers Exchange in Galena. Active in many farm and community organizations, Mr. Birkbeck served as a director of Jo-Carroll Electric Cooperative from 1940 until 1974. He served terms as president, as secretary and as treasurer of the cooperative. He also served several terms as a director of the Association of Illinois Electric Cooperative and of Dairyland Power Cooperative in LaCrosse, Wis. He served as the first vice president of Dairyland Power Cooperative in 1974 and 1975 and remained on the Dairyland Power board until 1984.

His most recent service to Jo-Carroll took place last summer when Morris was an active member of the planning committee for the 50th anniversary of Jo-Carroll. Many of his photographs and items that he had saved through the years were used in the 50th anniversary booklet.

We view the passing of Morris with great sadness for he was a true "cooperative" leader who grew up on a farm without electricity, worked to have the cooperative formed, and spent untold hours in unpaid service to the organization he loved. His selfless dedication to Jo-Carroll and all that it stands for will long be remembered.

MANAGER'S REPORT by Connie M. Shireman



Shireman

Outages: location number important

A message accompanying each member's July 1st bill warns about the fact that outages do occur and offers some help in reporting the outage. The insert and sticker are reproduced here, along with an article about how our members can "cope" with those unexpected power interruptions. Please place the stickers in a location near the phone and use them, as they help our crews in restoring the power.

As in the past, we urge any members who have special electrical needs, such as life support equipment, to be in touch with the cooperative. These members can be placed on a priority restoration list. However, it is advisable for anyone who needs uninterrupted power to purchase a back-up generator.

Jo-Carroll Electric Cooperative responds to outages and emergencies 24 hours a day, 365 days a year.

The cooperative's line crews are radio dispatched from our Elizabeth headquarters. Office hours are 7:30 a.m. to 4 p.m. Monday through Friday. After hours, the Jo-Daviess County Sheriff's department performs an answering service for the cooperative.

We rely on our numbers to report outages, because the vast majority of outages occur without the knowledge of the cooperative. They may be caused by storm, lightning, wind or even a vehicle hitting a pole. Generally, the cooperative is not aware of an outage until someone calls and reports being out of power. At that point, the cooperative line crews will be dispatched and begin to search for the problem that caused the outage.

One problem that can cause delay in restoration of service is when the member reporting the outage cannot give his location number. The dispatcher may report to the lineman "John Doe called in and is out of power." The lineman may check the computer listing and find that we have three "John Does." Or he may find that "John Doe" may have two or more service locations. These complications can cause a delay in restoration of service.

No one can say exactly when, but at some time there will be power outages. Jo-Carroll Electric Cooperative cannot guarantee uninterrupted power. The forces of nature and man are constantly working to stop the steady flow of electricity to our members' homes.

In order to assist our membership in having the location number near at hand when calling in outages, we have printed some stickers that can be posted near the telephone. At the bottom of the sticker is a blank line marked location number. The location number for each of our member's homes can be found on the billing statement. Please write the location number of your service on the sticker, and post near the telephone. When an outage occurs, you can give Jo-Carroll your location number.

The sticker also points out that each member should check their fuses and circuit breakers before calling the cooperative. The cooperative's members are charged a fee if they report an outage and it turns out that it was a fuse or a problem with the member's equipment that caused the lineman to go to the location.

Jo-Carroll Electric Cooperative

815-858-3311

815-858-2207

In case of outage:

- #1. Check fuses or circuit breakers
- #2. Determine if your neighbors have electricity
- #3. Call Jo-Carroll and give your location number

LOCATION NUMBER: _____

It can also be helpful to the cooperative line crews to know if the neighbors power is also off, or if it is an individual outage. Also, if the member sees any flashes by the transformer, or trees that have fallen, or if they note a vehicle accident in the area, they should report this when calling in.

Thank you for helping the cooperative to serve you better.

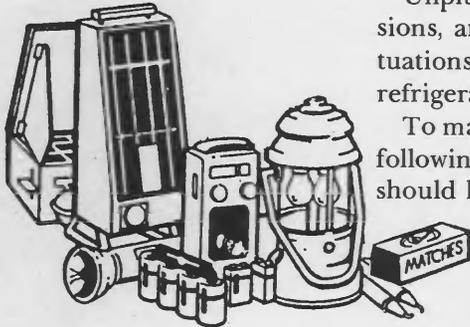
Preparing for outages

It is easy to become accustomed to a continuous, uninterrupted supply of electricity. Supply can be cut off by storms, weather, or accidents. When there is an interruption we often find ourselves unprepared.

When your power goes off, there are several steps to follow to prepare yourself for this situation. Replacing a main fuse or resetting a circuit breaker may restore your electricity. If, after checking these, you determine that the problem is not at your home, check to see if your neighbors have electricity if possible. Next call the cooperative office to report the outage. We can serve you more quickly if you have your account number and pole location available. Having this information before placing your call helps to promptly untie our telephone lines. The office will dispatch a crew as quickly as possible to locate the trouble.

Unplug appliances with electronic components, such as microwave ovens, televisions, and VCR's. This will eliminate damage to appliances from voltage fluctuations due to this problem. Appliances with electrical motors—freezers, refrigerators, air conditioners, water pumps—should also be unplugged.

To make an outage easier to cope with, always keep an adequate supply of the following on hand. Keep these items in a cool, dry place. All members of the family should know where to find these supplies:



- flashlights
- battery-operated radio
- candles and matches
- extra batteries
- basic first-aid supplies
- small supply of water

Never go near downed power lines; let qualified people from the cooperative office handle these situations.

When the electrical outage occurs in the winter, you need to take certain precautions. Dress warmly by wearing several layers of clothing. Several layers of clothing provide better insulation than a single layer.

Have your family move to a single room as much as possible, preferably one with few windows. Ideally, this room should be on the south side of the house to gain the maximum heat from sunlight. Shut off this room from the rest of the house. It could be a room with a fireplace, wood stove, or an alternate heat source. Follow operating instructions if another heat source is used. For example, if you use a kerosene heater, adequate ventilation is a must. Store all fuels outside the home for safety reasons. Properly maintain wood stoves and fireplaces throughout the year to prevent problems when emergencies arise.

If it has been determined that the power outage will be extended, other measures will need to be taken as well. Unplug everything in your home. Turn off breakers or remove fuses. You may want to leave one lighting circuit on so you will know when the electricity returns. Be sure to keep doors on refrigerators and freezers closed as much as possible to prevent air loss. Keep curtains closed on all windows except the south windows when the sun is shining. This will supply some passive solar heat in the daytime hours. Keep draperies closed at night.

Following these suggestions will make it easier to cope with a power outage. Think ahead and prepare for an emergency by having a plan in your household. Remember to stay calm. Your electricity will be on as quickly as possible. The cooperative will work around the clock to restore your electrical service.

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You bet! You might wonder why a rural electric system "talks." It's because we're committed to communicating with our consumer-owners, our community leaders and our business associates. It's the cooperative way of finding out what's on people's minds so that we can continue to do the best job possible.

Communication is a two-way street. We want to hear from you. So just pick up the phone and call us or stop by for a chat. We're here to serve. Let's talk!

Ron Woods completes apprenticeship



Ron Woods

Ron Woods, a Jo-Carroll employee since August of 1989, recently completed his apprenticeship and is now a journeyman lineworker.

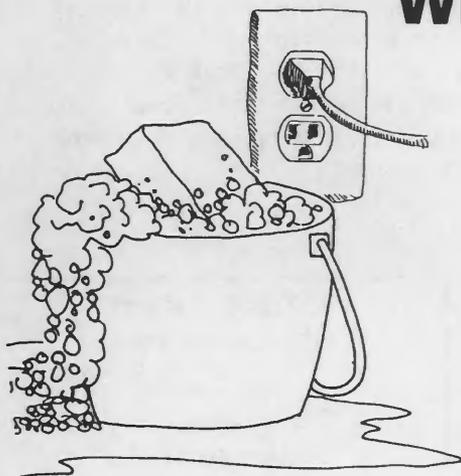
Ron attended the Northwest Iowa Technical training School at Sheldon, Iowa, completing the powerline installer's course. He also worked for the city of Pocahontas, Iowa, before coming to Jo-Carroll. Ron and his wife, Joy, live in rural Elizabeth with their son, Derek. Ron has been working with the pole change-out crew and the new construction crew.

Your hairdryer could be the most dangerous appliance you own

Morning rush hour in your bathroom may seem routine. You shower, wash your face and dry your hair. But if your shower has left your bathroom misty, and water is splashed on your sink and counter, and in a hurry, you plug in your hairdryer with hands still wet from washing your face, stop!

You could be setting yourself up for a severe or even fatal injury from electrical shock.

Any electrical appliance can be hazardous when used near water. If you have questions about the safe use of electrical power, call your rural electric cooperative. A member of our staff will be glad to offer suggestions concerning the safest, most efficient uses of electricity. Laurie Starett



Who needs a GFCI?

You do—if you use electric appliances in your bathroom, garage, at an outdoor outlet, or anywhere there is water or moisture.

A plugged-in appliance, even though it's turned off, can still deliver a shock if it comes in contact with water. But a GFCI—a ground fault circuit interrupter—reacts to the smallest electric current leak by stopping the flow of electricity.

A GFCI is most definitely your assurance of using appliances and equipment properly.

Become acquainted with a GFCI as soon as possible. We'll be glad to provide you more information. Please contact us.

Jo-Carroll Hi-Lines

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

MANAGER'S REPORT by Connie M. Shireman



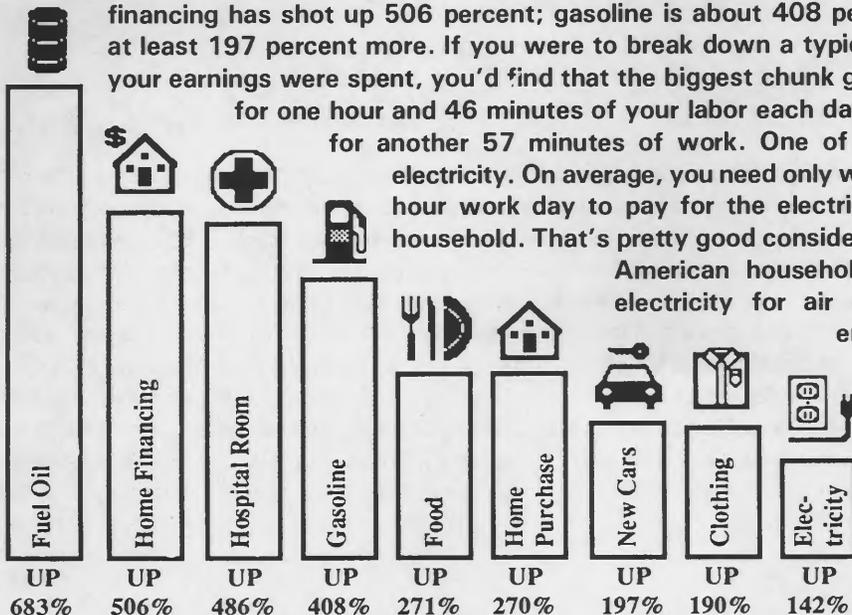
Shireman

I ran across the following article recently, and thought it gave a good prospective on the value of electricity when compared to other products. We at Jo-Carroll have been fortunate enough, through budgeting efforts and our load management programs, to operate since May of 1984 without a rate increase.

If one considers inflation since that time, Jo-Carroll's rate is less now in terms of the purchasing power of the dollar, when comparing 1984 to 1990. I hope that Jo-Carroll members consider safe, reliable, efficient, and clean electricity when making energy choices.

Electricity costs compared to other consumer goods

Everyone knows that things cost more today than before and it's commonly thought that electricity is among the culprits. The fact is, however, electricity has remained a bargain. Since 1967 home financing has shot up 506 percent; gasoline is about 408 percent higher and new cars cost at least 197 percent more. If you were to break down a typical eight-hour workday into how your earnings were spent, you'd find that the biggest chunk goes to federal taxes, accounting for one hour and 46 minutes of your labor each day. State and local taxes account for another 57 minutes of work. One of the smallest bites comes from electricity. On average, you need only work 15 minutes out of each eight-hour work day to pay for the electricity you used in operating your household. That's pretty good considering that since 1967 the average



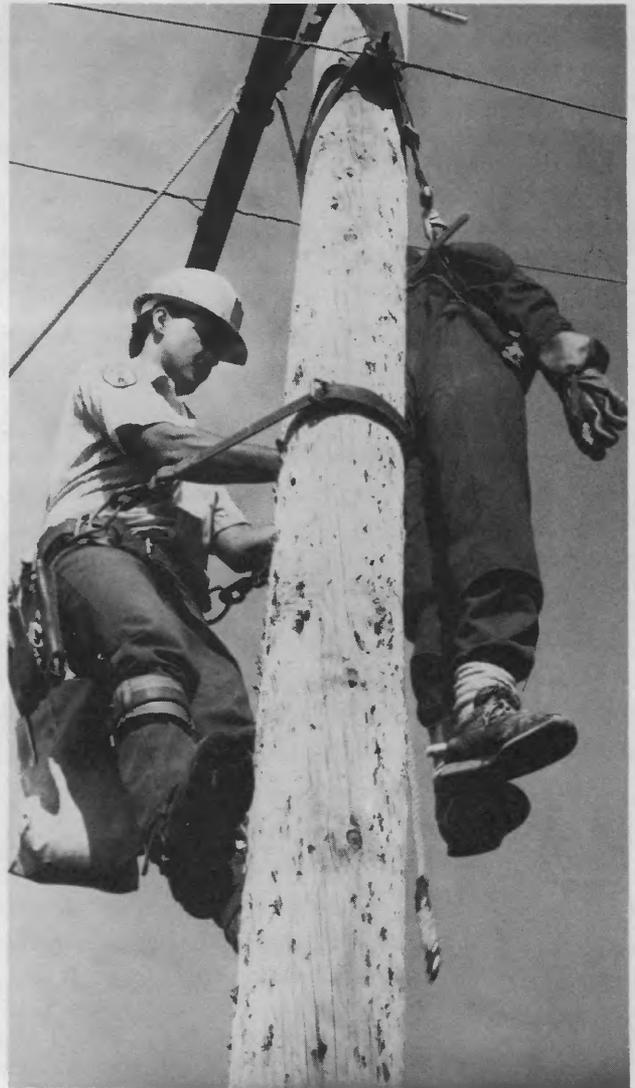
American household has *doubled* its demand for electricity for air conditioning, heating, cooking, entertainment and so on. Because electricity is invisible, we simply never notice all the work it's doing every second, every day, all year long.

(from Panola-Harrison Electric's (Texas) "Co-op News")

Increase in Cost Since 1967

Office closed

Monday, September 3, in observance of Labor Day.



Jo-Carroll Electric Cooperative maintains the expertise of its staff through a systematic series of training programs. During monthly sessions, linemen review work procedures and equipment operation, as well as first aid and rescue techniques. Practice is conducted on poles and unenergized lines in the cooperative's pole yard behind the main office building. In July, employees used a manikin to practice "pole-top rescue," a method of lowering an injured lineman from the top of a utility pole. The rescuer must climb the pole, create a rope harness and lower the manikin to the ground in less than four minutes. In the photo on the left, safety instructor James Nevel of the Association of Illinois Electric Cooperatives reviews the precise steps of rescue. Jo-Carroll lineworker Bill Allen is on the pole, affixing the rope to the dummy, while John Lisk holds the hand line. Each lineman then demonstrates his ability to complete the task in the allotted time. Later, Jo-Carroll lineworker Ron Woods takes his turn, lowering the 130-pound manikin to the ground. Each lineworker demonstrated his ability to lower the dummy in the allotted time, and some were able to complete the task in two minutes.

Lloyd Price honored for 25 years of service



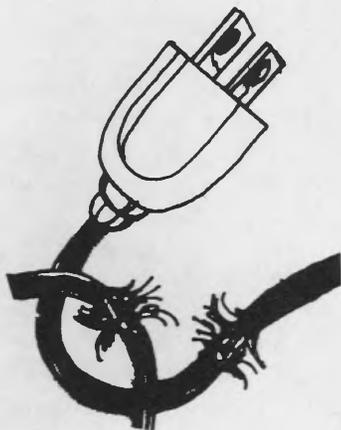
Price

On July 20, Lloyd Price celebrated 25 years of service to Jo-Carroll Electric. Lloyd worked for Western Union Telegraph Company several years prior to his employment with the cooperative in 1965. Lloyd has seen many changes in his years at Jo-Carroll, "particularly with the line equipment," Lloyd remembers, "We used to do so many jobs by hand." "Now we can do the same jobs much quicker using the hydraulic equipment," Lloyd said, "Much safer too." Lloyd is a lifelong resident of Elizabeth, and he and his wife have two children.

Children and extension cords

The electric extension cord is a part of contemporary living. People continue to use more and more electric appliances, and it's rare, even in new dwellings, to find enough wall outlets to eliminate the occasional need for extension cords.

Investigations were made of 20 accidents that involved extension cords and children who suffered electrical burns of the mouth. It was revealed that the intense heat produced in this type of accident almost always causes tissue damage to the lips and often the tongue, too. Healing is slow, and permanent scarring of the mouth and lips can result.



Contrary to the common assumption, these accidents are not caused by children biting and chewing through the insulation on the cord. The accidents involved infants who were teething, children who were sucking or chewing on the receptacle of the cord and children who were attempting to disconnect the extension cord from an appliance service cord.

Since children may not have the strength to pull apart a tight-fitting connection, they sometimes resort to putting one end of the connection in their mouth and pulling on the other end with both hands.

Regardless of how the accidents occur, the resulting injuries are quite similar. Saliva serves as a conductor, and the moist mucous membranes of the mouth and lips offer little resistance to the flow of current. An electrical arc can cause tissue damage in a fraction of a second.

If the child's body is well grounded—for example, sitting in a wet diaper against a heating register that is grounded through the furnace—the accident could prove fatal.

How can children be protected from injuries associated with extension cords?

When buying extension cords, inspect them to make sure they fit snugly into the wall outlet, and make sure the receptacle is compatible with the plug of the service cord of the appliance.

Never leave an unused extension cord plugged into a receptacle. It is a handy, new plaything for a youngster whose line-of-sight is near floor level. Most toddlers will automatically put anything in their mouths that they can pick up.

Use extension cords for temporary situations only, and never run cords under carpets to hide them from sight. The carpet acts as insulation and could very well create a fire hazard.

The investigation focused on 15 accidents in which children received burns and electric shocks from placing metal objects in wall outlets. In seven cases the children received a substantial shock. One parent reported her child was thrown across the room, and another said his child became pale and fainted.

How can children be protected from injury from wall outlets?

An inexpensive and effective way is to insert plastic safety caps in all wall outlets that are not in use.

An alternative would be to use a safety outlet that accommodates a grounded plug and does not allow current to flow if a metal object is placed in only one slot. Such an outlet is designed so a metal object must be placed in both slots before current will flow from it. Even then, the risk of injury to a child from inserting a metal object in both slots is reduced due to the design of this type of outlet.

Of course, the best method of safeguard against injury is to make sure that metal objects that are small enough to be inserted into a receptacle are kept out of reach of young children.

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Extending the power—safely

Why does it always seem like there's never a close or free outlet when you need one? At this point, most people will begin stringing extension cords.

An extension cord can be mighty handy, but it can also be dangerous if misused.

As the amperage of the load increases, so should the wire size in the cord. (Amperage is the strength of current needed to run the appliance.) And as the length of the cord increases, the thickness of the wire should, too. Resistance to current flow decreases with increasing wire thickness, and that means safer and more efficient use of electricity.

It's important, especially for safety reasons, to use the proper gauge extension cord. (Gauge is a measure of the wire's thickness.) The gauge should be on the label of new extension cords or right on the cord. The lower the gauge, the thicker the wire. A 10-gauge cord is about the thickest cord available to consumers; and 18-gauge cord is usually the thinnest.

Knowing the amperage of appliances can help you decide which gauge extension cord is suitable. The amperage of appliances will be on the nameplate.

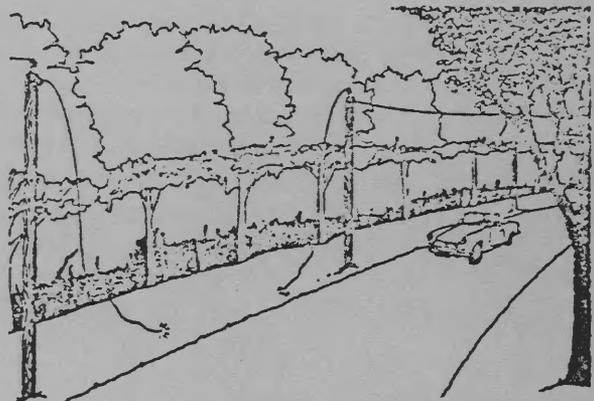
Improper use of an extension cord can result in serious damage. Data indicates there are some 7,400 home fires a year involving extension cords. In an average year, these fires cause about 80 deaths, 260 injuries and millions of dollars of property damage. Almost half of the fires caused by extension cords are thought to be the result of overloading the cord.

Minimum wire size of extension cord

Nameplate AMPS	Wire gauge size and cord length in feet			
	Up to 25 ft.	50 ft.	100 ft.	150 ft.
0-3	18	16	16	14
3-6	18	16	16	14
6-8	18	16	14	12
10-12	16	16	14	12
12-16	14	12	Not recommended	
16-20	12	10	Not recommended	

May we say thanks to our members

- Who call promptly to notify the office when a power outage occurs, telling us exactly where the trouble is located and the cause.
- Who grant right-of-way for construction and maintenance of line to serve your neighbors providing adequate and reliable electric service to everybody on the system.
- Who are careful when using trucks and farm machinery around poles, lines and guy wires.
- Who keep television antennas, silo-filling pipes and other equipment clear of falling distance on all electric lines.
- Who teach children all the rules of electric safety, both indoors and outdoors.
- Who use extreme care when cutting trees near your electric lines.
- Who notify the office when moving so electric service can be transferred to the new owner or disconnected if no one will be using power.
- Who report anything that is wrong with the



lines such as bad poles, broken guy wires, broken strands on the line conductors and cracked or broken insulators.

- Who keep signs, fence wires, nails and other hazards off the poles for the safety of our linemen.

James Harrington

Jo-Carroll Hi-Lines

Jo-Ca

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

MANAGER'S REPORT by Connie M. Shireman



Shireman

There is a difference!

Even though all electric utilities face common problems—and often arrive at the same, or similar, solutions to those problems—there are still major differences between electric cooperatives and investor-owned public utilities.

Illinois electric cooperatives serve only 5 percent of the state's electric consumers. Cooperatives receive only 4 percent of the electric revenues, yet they maintain 32 percent of the total miles of electric distribution lines serving consumers in Illinois. System investment and maintenance costs are primarily related to miles of distribution line; ability to pay increased cost is primarily a function of consumer density, or meters per miles of line.

Electric cooperatives are working closely with other electric suppliers to meet their common problems. At the same time, when urbanized areas grow into cooperative service areas or new commercial or industrial loads offer potential to increase a system's revenue density, electric cooperatives stand ready to use all legitimate avenues to maintain the territorial integrity of service areas they have developed. To do less would be to abandon the interests of member-owners of the electric cooperatives.

Consumers per mile of line

Low consumer density means high investment per consumer served by an electric distribution system. This is a built-in handicap that electric cooperatives have had to overcome as they seek to achieve rate parity between their members and the customers of investor-owned public utilities.

Electric cooperatives in Illinois serve about four consumers per mile of line. Investor-owned utilities serve about 37 consumers per mile. That greater density for the IOU's shows up in the amount of revenue per mile. IOU's receive approximately \$65,000 per mile; cooperatives receive about \$5,300 per mile.

Revenue per mile of line

With about nine times the consumer density, investor-owned public utilities receive approximately 12 times the revenue per miles received by electric cooperatives.

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The electric thermal storage heating concept

1. Special alloy heating elements use off-peak electricity to heat...

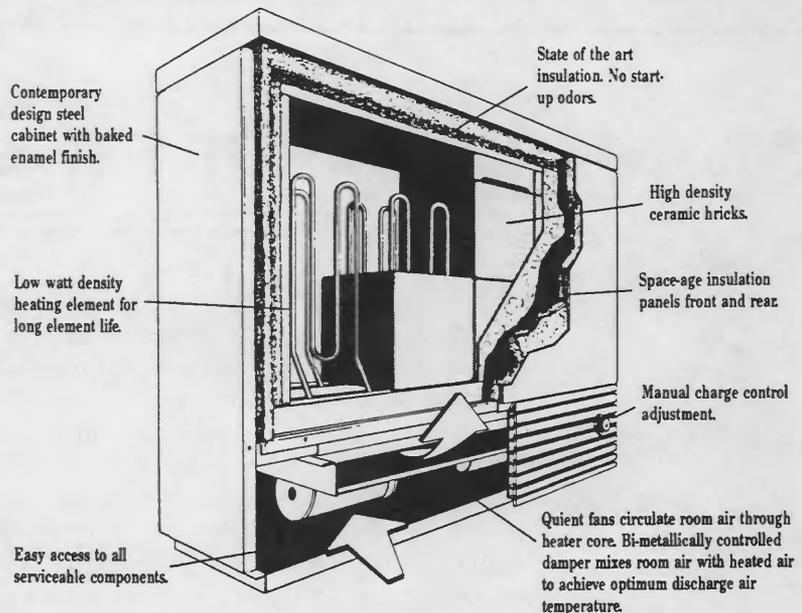
2. ... magnesite bricks which efficiently store the heat until it is needed.

3. Glass fiber and micro-therm insulation keep the heat inside of the unit.

4. A quiet, low velocity fan is activated when the room thermostat calls for heat. Room temperature air is drawn into the unit and heated as it is circulated around the hot bricks.

5. A bimetallic damper mixes additional room air with the hot air inside to provide an even, comfortable flow of warm air into the room through...

6. ... the air discharge grille at the bottom of the unit.



What does off peak mean?

Jo-Carroll purchases electric energy from Dairyland Power Cooperative for re-sale to our members. During the coldest winter evenings, a peak load condition is often reached, driving the cost to generate the electricity "sky high." Also, much of the remaining time, at night for instance, equipment generating electricity is not used at full capacity.

Jo-Carroll and its members can help both problems by taking advantage of the electric storage heating concept. Electric storage heating systems allow you to use electricity only during off-peak times and at night to create heat. The heat is stored and then drawn upon during the day or the peak time as needed heating both radiantly and through convection. **Fred Vincent**

How the system works

At night, the storage heating unit is charged when electricity is automatically switched on to heating elements surrounded by a high-density magnesite core within the well-insulated unit. When the room thermostat calls for heat, a small fan in the base of the unit circulates room air around the hot core and quietly and gently blows warm air into the room guaranteeing a consistent discharge temperature, even though the core heat changes.

Greater comfort for less

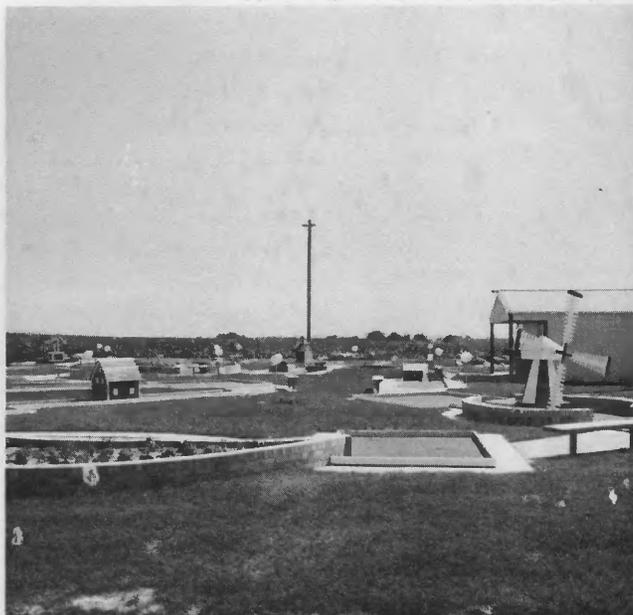
Electric thermal storage heating is a clean, safe, comfortable and reliable method of heating your home. The savings are realized by taking advantage of off-peak electric rates offered by Jo-Carroll. With storage heat you purchase electricity during "off peak" hours for as much as 61 percent less than normal electric rates. This heating choice is growing in popularity because it is 100 percent efficient and provides consumers with considerable savings on heating costs. For more information, call Don Schleicher at Jo-Carroll (815)858-2207.

New commercial accounts

Two of the new commercial accounts built in Jo-Carroll's service area in the summer may have broad interest to our membership because of their recreational nature. The cooperative welcomes this type of commercial growth, because the additional sales help all of Jo-Carroll Electric Cooperative's member/owners.



Inside the sporting goods store



The mini golf layout

J&D Sporting Goods and Marine

Dick Rigdon and his father went into the sporting goods business in 1955. Their store was located on Main Street in Galena. This location served the business well for many years, but the recent growth in tourism has made the downtown area quite congested, and parking became very difficult.

This summer Dick moved his business to 9355 West Powderhill Road, on the East edge of Galena, an area served by Jo-Carroll Electric Cooperative. He has constructed a 2,900-square-foot building, giving the business a lot more room than they had downtown.

J&D's offers all types of fishing tackle, live and artificial bait, and all types of outdoor sporting goods. They also sell boats and motors, and do marine service work. Dick can also generally tell you where the "big one's" are biting.

Mini golf course

A new mini golf course was constructed in August by Dick and Ruth Langfield and Al and Janet Scheele. Located near the intersection of Scout Camp Road and Lake Road No. 2, northeast of Apple Canyon Lake, the golf course has 18 holes of miniature golf. The golf course will be open from 6 p.m. to 9:30 p.m. on weekdays and from 11 a.m. to 11 p.m., or whenever customers finish playing the course, on weekends and holidays. The course will stay open this fall until bad weather, and re-open again in the spring.

A storage building was also constructed at the site. The facility is not filled to capacity yet, and another building may be constructed in the future if there is a demand for this service. The owners developed this project because they saw a need in this area for these services. A driving range is planned for the future. More information can be gained by calling (815)492-2113, 492-2301 or 947-3116.

Farm electrical safety checklist

Service pole and service entrance

- | YES | NO | |
|-------|-------|--|
| _____ | _____ | Do farm family members and all hired farmhands know where and how to disconnect power in the case of an electrical emergency? |
| _____ | _____ | Are disconnects, especially main breakers, regularly turned off and turned back on to ensure free action and good contact? (Manufacturers of circuit breakers claim that they should be opened and reclosed once per month.) |
| _____ | _____ | In case of fire, can the electricity be shut off to that particular building on fire without shutting off electricity to the water pump? |

Animal housing

- | YES | NO | |
|-------|-------|---|
| _____ | _____ | Do animals enter a building or drink at the stock tanks without hesitation? |
| _____ | _____ | Is the water piping (metallic) and service entrances of buildings properly grounded? (NOTE: Check for corrosion of grounding system by animal waste.) |
| _____ | _____ | Is the farmer using an industry-made electric fencer which bears the UL label? |
| _____ | _____ | Are heat lamps in farrowing houses hanging by the cord only? In case of drop, are there guards on the fixture? |
| _____ | _____ | Are the lights enclosed in globes and guards (where required)? |
| _____ | _____ | Is the wiring suitable for wet conditions (because of the humidity created by the animals' respiration)? |
| _____ | _____ | Does all wiring appear to be in good condition and free from damage by rodents? |

Grain-handling equipment

- | YES | NO | |
|-------|-------|---|
| _____ | _____ | Are overhead lines out of the way of augers and winged-type farm equipment? |
| _____ | _____ | Do all motors have correctly-sized overcurrent protection? |
| _____ | _____ | If magnetic starters are used, are heater coils of the proper size? |

Machine shed

- | YES | NO | |
|-------|-------|---|
| _____ | _____ | Is the grounding bayonet on drop cords, power tools, etc., intact? |
| _____ | _____ | Is the service entrance properly grounded? |
| _____ | _____ | Are all receptacles in use properly grounded? |
| _____ | _____ | Are drop cords of adequate size for the appliance or machine it is serving? |
| _____ | _____ | Are drop cords put away after use so machinery can't run over them? |
| _____ | _____ | Are power tools such as circular saws, table saws, drills, jig saws, etc., left unplugged when not in use so that a child couldn't accidentally turn them on? |
| _____ | _____ | Is it adequately lighted? |
| _____ | _____ | Are drop cords in good condition with no sign of insulation damage? |

General

- | YES | NO | |
|-------|-------|---|
| _____ | _____ | Do children know whom to call in case of an electrical emergency? |
| _____ | _____ | Do family members know first aid for electrical shock and/or burns? |
| _____ | _____ | Are GFI's installed where required? |
| _____ | _____ | Do appliances function satisfactorily without giving a tingle to user when turned on? |
| _____ | _____ | If lightning protection is installed, are all wires leading to ground? |
| _____ | _____ | Are all electrical fittings on the gas pump of explosion-proof type? |
| _____ | _____ | Before trees are planted, has proper siting been provided to avoid nearby overhead and underground power lines? |
| _____ | _____ | Are trees free and clear of overhead electrical lines? |
| _____ | _____ | Before new buildings are constructed, have the buildings been cleared of nearby overhead and underground power lines? |
| _____ | _____ | Can tractors equipped with end loaders be raised to the most upper position and clear all overhead electrical lines? |

Items checked NO indicate a potential electrical safety hazard. Proper action should be taken immediately to ensure safety.

Jo-Carroll Hi-Lines

Jo-Ca

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

MANAGER'S REPORT by Connie M. Shireman



Shireman

Let's pause to remember

REA

I read Loyal Siedenbug's September 5th "Coming thru the rye . . ." column in the Northwestern Illinois Farmer newspaper with great appreciation. His sentiments were very similar to others we heard last year at the 50th anniversary of Jo-Carroll Electric, and I am sure that they follow along with the feelings of many other long time Jo-Carroll members. I am reprinting this article in it's entirety for any of our members who may have missed it.

I don't understand how electricity works, but I sure use it a lot. It heats our house and lights up the yard and everything in the home.

From 1916 to 1927 we lived on a farm with no electricity. The washing machine was run by boy power when I got old enough. There was a foot pedal with along wooden handle above it. It's hard to explain, but you put a foot on the pedal, held onto the bar, and pushed down and up with your foot and back and forth with your hand. Somehow that made the agitator turn back and forth.

Later we had a one-cylinder gas monster that ran the machine. There was a long belt from the monster's pulley to the washing machine. The engine sounded something like this: "Bang! Putt, putt, putt! Bang! Putt, putt."

The engine was bolted to the floor in the summer kitchen, and, when it ran, it shook the whole house. It made more noise than a tractor, and it smoked and smelled bad. Sometimes Dad could start it in a half hour. It had a crank handle that came off.

One time when I was about 16, Dad cranked until he was all "pooed" out. I said, "Let me try it." So he handed me the crank and I gave it a few whirls. Suddenly the engine roared to life, and the crank handle flew off and hit Dad on the kneecap. He jumped around and howled like a banshee. It hurt so much that I don't think he was even glad that it started. He never let me crank it again.

If the engine would stop before the washing was done. Dad would have to come in from the field to restart it. What a blessing is electricity.

The first 11 years of my life the utility lines ran right past our farm. In fact there was a pole in our front yard. But we couldn't have electricity at our place because of the very high cost of hooking on. Later Dad bought the farm next door. The line was not in our yard now, but just across the road. The poles were made of steel for many years. One year there was a heavy ice storm and most of them went down. They were then replaced with wooden poles.

Sometime in the '20s one of our neighbors, about one and a half miles away, made a deal with the utility company. For \$2,000 they hooked him up with power. Then another neighbor about a half mile away paid half of the \$2,000 and got hooked up. Then about 1928 a Savanna banker moved out to a farm south of ours. He bought into this utility deal and paid one-third of the \$2,000. Then he was all lit up. But not us.

I suppose Dad could have bought in for \$500, but I don't know for sure. But we were used to the lamps and lanterns, and the "monster." I shudder to think about carrying the lantern in the barn, and even to the haymow. But we did it for many years.

One time my great uncle accidentally dropped a lighted lantern down the hay chute. The lantern snuffed out when it hit the bottom. Uncle was a little man, and some joker said that it was a good thing that he didn't have hold of the lantern, or it would have

pulled him down with it.

I may be off a year or two in my figures, but it must have been about 1940 when the REA started hooking up farms in Carroll County. About 1944 the utility company made an about face and offered to hook up farms at no charge. Finally Dad and Mother got electricity. But, oh, those many years that we could have had it!

Thirty years of drudgery for my mother. Can you imagine cooking for 10 or 15 threshers in a hot kitchen with no fan and no refrigerator—on a wood stove? I don't know who was responsible for the high hookup rates, but I know it was the coming of the REA that got the other utility companies on the ball. Thank God for the USA—and don't forget the REA.—Loyal Siedenburg

Thanks for your help

Jo-Carroll would like to thank our members and the people of Dunlieth township, as well as those who frequently travel Badger Road in the East Dubuque area. Relocation of overhead lines that needed to be buried resulted in traffic being stopped several times during the job, and we appreciate the patience and courtesy shown by the people of that area. We also want to thank Ralph Tranel for his assistance in this project.



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.

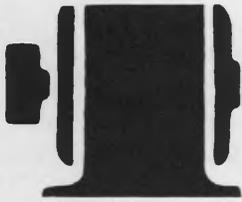
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Electric motors around farm and home need maintenance



Numerous electric motors can be found in the home and around the farmstead today. Just for fun, think for a few minutes and see how many you can list. Don't forget the motors in the clocks, can openers, refrigerators, freezers, hand drills, sanders, vacuum cleaners, and all the motors connected with the grain drying operation.

Selecting the proper motor for the job, and installing the necessary wiring and controls is of primary importance. Once a motor is installed and working properly, there is a tendency to forget it until a problem arises. By this time the motor may be damaged or completely ruined. With today's replacement and repair costs, proper operation and maintenance practices will pay large dividends.

Occasionally as a motor is running, look at, listen to and touch the motor to detect if trouble may be developing.

Touching a motor can alert a person to a major cause of motor failure—overheating. Overheating may develop because of low voltage, faulty equipment, frequent starting, dirt, inadequate lubrication, and improper overload protection.

Voltages lower than 90 percent of nameplate voltage of the motor will cause overheating and damage to the motor.

Dirt, dust and lint settle on the housing, windings, slip rings, and commutators each day. The dirt, dust and lint can work its way into the bearings of the motor and create friction. Any of these conditions will cause a motor to overheat. It is essential that some loving care be used on the motor to help it out. Fight dirt by wiping motors off with a clean rag regularly. Occasionally blow dust out of motor windings with an air compressor not using more than 30 psi of pressure, a tire pump, or vacuum cleaner. Make sure oil filler caps are closed securely and that dust seals and gaskets are in good condition.

Proper lubrication of an electric motor is essential to good performance and life. Bad or dry bearings place an extra load on the motor causing it to operate at higher amperages as it tries to do the job. This, in turn, causes the motor to overheat.

Rusty or corroded moving parts, clogged condenser coils on refrigeration or air conditioning units (weeds or shrubs near the condenser coils will restrict air movement), the mismatch of equipment to motor—such as changing the blades on crop dryers or changing pulleys on equipment to increase speed, can cause the electric motor to use excessive current or overheat.

Improper overcurrent protection can result in motor failure. Many of the conditions already mentioned may cause proper overload protection to operate, sometimes referred to as "nuisance tripping." When this occurs the tendency many times is to install higher rated overprotection or eliminate it completely, rather than locating the source of the problem and correcting it. The motor has been sending out a message by overheating and causing the thermal protection to shut off the motor. The motor may be equipped with an internal thermal protector which resets automatically or one which is manually reset. The thermal protector may be located in magnetic or manual starters. When the thermal protector, or heater coil, does trip out the motor amperage should be measured as the first step in locating the source of the problem.

Edward J. Flynn

Circuit breakers should not be used as overcurrent protection for a motor, but should only be used as the branch circuit or wiring protection.

While lubrication is an important component of good motor maintenance, do not overlubricate. Some motors, especially fractional horsepower motors, can be ruined by too much oil. Sleeve type bearings in motors are designed to be oil lubricated. Ball bearings are lubricated with grease. Pre-lubricated and sealed bearings do not require additional lubrication. Hand packed bearings should be running as the bearings are being greased. Care should be used to be sure the proper grease is used for lubricating the motor. It is essential to follow the manufac-

turer's recommendation on the type of grease to use.

Moisture is another enemy of a motor. Condensation can occur inside the motor housing, on the shafts, and starting mechanism, and may occur inside the bearings. This is a special problem for farm motors located outdoors and not on grain drying equipment. They should not be allowed to sit idle for extended periods of time, but should be run for 10-15 minutes at least once every two weeks. The running time should be long enough to warm up the motor to normal operating temperature to remove any condensation which may have collected in the motor. This also helps keep the bearings lubricated.

Vibration of an electric motor should be checked. Allowing a motor to continue to vibrate can cause burned out bearings, sprung or broken shafts, and overload failure. Vibration can be the result of settling foundations, heavy floor loading, careless servicing, loose mounting bolts, out-of-balance fans, and excessive bearing wear of either the motor or the driven equipment.

It is not unusual for rodents to get into open type, infrequently used motors and damage the insulation on the wiring. Running the motor at least every two weeks also provides a check of the motor for damaged wiring. rodent proof screens of one-quarter inch square mesh can be placed over all ventilation openings to keep rodents out, but they must be inspected periodically to be sure dirt, dust and lint has not collected on them, thus blocking air flow through the motor.

In summary, don't wait until it is time to use the motor, especially one that is used seasonally or is seldom used. Perform any maintenance checks on the motor early enough so repairs, cleaning and lubrication can be completed before the motor is needed. Maintenance charts or tags placed on or near each motor would serve as a reminder of service dates and repairs made.

Load control test scheduled

The load management system will be tested on the dates listed below. The strategy 1 test will affect all Jo-Carroll members with a water heater control. The strategy 4 test will affect those members with dairy water heaters controlled by load management. Strategy 2 testing will be for those members with dual fuel.

These tests should not affect Jo-Carroll members adversely. The water heaters should not run out of hot water in that time frame, and back-up heat should continue to keep homes on the dual fuel program comfortable during the tests.

If any members experience any problems because of the test, or have any questions about control devices or the load management programs, they are urged to call Don Schleicher at Jo-Carroll 858-3311 or 858-2207.

Strategy 1 and 4 tests combined — Water heaters/dairy water heaters/others

Date: October 29 and October 31

Alert: 8:30 a.m.

Control: 9:00 a.m.

Restoral begins: 11:30 a.m.

Date: October 29 and October 31

Alert: 6:00 p.m.

Control: 6:30 p.m.

Restoral begins: 8:30 p.m.

Strategy 2 test — Dual Fuel

Date: October 30

Alert: 2:00 p.m.

Control: 2:30 p.m.

Restoral begins: 7:30 a.m.

Office closings

The cooperative office will be closed Monday, November 12, to honor those Americans who have served their country in the defense of our freedom, and Thursday and Friday, November 22 and 23, in observance of Thanksgiving. We at Jo-Carroll Electric wish you and yours pleasant holidays.

Jo-Carroll Hi-Lines

Jo-Ca

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

MANAGER'S REPORT by Connie M. Shireman



Shireman

The budgeting process

November of each year finds the manager, staff, and the board of directors of your member-owned electric cooperative engaged in the budgeting process. The annual challenge is to keep the rates as low as possible, while continuing to provide the high quality electrical service that our members have come to expect from Jo-Carroll.

We have been very successful in years past, having held the line on rate increases since May of 1984—six and one-half years without a rate increase. It is an accomplishment that we take pride in, since so many other products and services have risen so much in recent years, especially fuel and transportation increases.

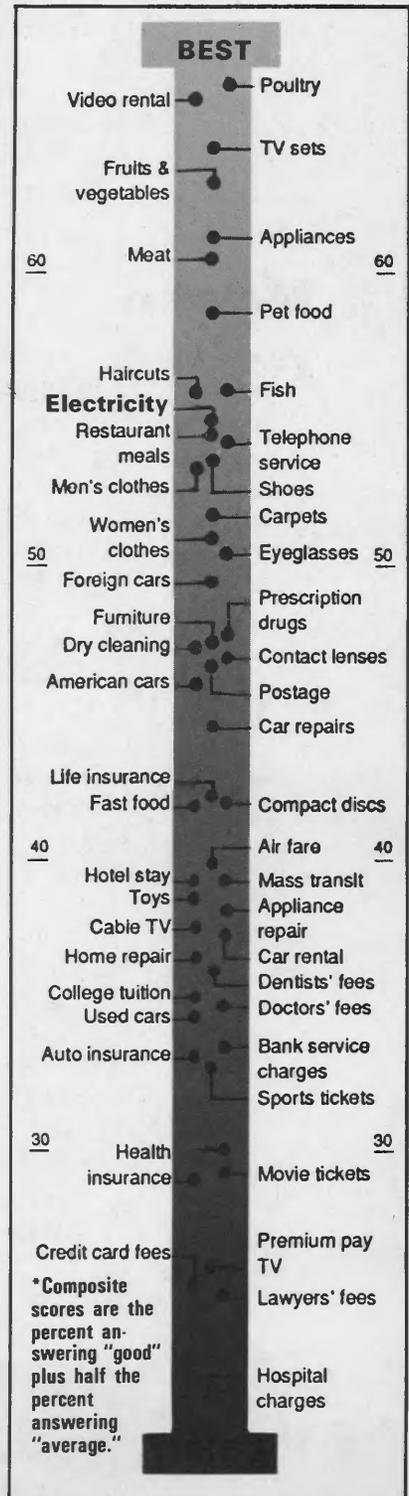
Many factors have entered into our success, such as the load management program that reduces the cost for wholesale power while allowing our members to heat their homes and hot water. In the 1990 budget meetings, planning for the year 1991, we are again striving to hold the line on rates. It is not yet known whether we can hold the line on rate increases for another year. However, I read the following survey that quotes electricity as a good value, and I would like to think, regardless of how the budget meetings turn out, that our members agree.

Electricity a good buy?

If you've rented a videotape to watch on your new TV while eating a chicken-and-vegetable dinner, you should be one happy consumer, a new survey says. But paying to go to a movie or a ballgame likely makes you wince.

The Conference Board, after a nationwide

At the right: Composite rating of selected goods and services based on answers to the question, "Do you get good, fair or poor value for your money when you purchase this item?" Higher scores (shown higher on the chart) indicate better value. A score of 50 is neutral. Composite scores are the percent answering "good" plus half the percent answering "average."



Source: Conference Board AP/Pat Lyons

survey of 7,000 families, found that consumers say they are getting their money's worth when they buy chicken, fruits and vegetables, television and other appliances, electricity and in renting videotapes.

Those surveyed, however, believe they are getting a relatively "poor" value when they pay for hospital care, lawyers' services, credit card charges, cable television and insurance—not to mention movies and sports events.

The Conference Board, a business-sponsored research group, asked families in its survey to rate the value received for 50 different products and services and "good," "average" or "poor."

"People tend to have a sound intuitive sense of what things should cost—particularly in the service sector," said Fabian Linden, executive director of the board's Consumer Research Center. "While they are not always right, they are more often right than wrong."

Poultry drew the most consumer acceptance. More than two out of five surveyed rated the money value as good; less than 8 percent labeled it poor. Also topping the list of favored items were meat, pet food, haircuts and fish.

Hospital charges, on the other hand, ranked dead last in overall acceptance; more than 61 percent of those surveyed rated them as a poor value. Consumer ire was also provoked by the cost of health and auto insurance, bank service charges, used cars and college tuition.

Vic Mason retires

Vic Mason, who began his employment with Jo-Carroll Electric in 1952, retired October 31. Vic worked in several departments, in various capacities, and has visited every corner of the service area many times while traveling untold miles during his 38 years of services with Jo-Carroll. Vic has also been relied on in years past for his remarkable memory. He can generally tell you who lives where, who used to live in the house, who lived in house before them, and who they are related to. The co-op on occasion had to rely on Vic's memory when hooking up abandoned services.

When Vic started with Jo-Carroll in 1952 the cooperative was smaller than it is today. He has seen a remarkable amount of growth in Jo-Carroll Electric. In 1952 the cooperative served about 1,500 meters over approximately 650 miles of line, and our members used less than 10 million kilowatt-hours per year. In 1990, Jo-Carroll serves more than 4,800 meters and 1,053 miles of line, while our members use in excess of 60 million kilowatt-hours per year. Vic had a hand in many of the jobs that extended power to our new members and increased the service capacity to our existing members.

Many changes in the way in which line work is performed have taken place in Vic's tenure at Jo-Carroll. Vic remembers, "When I began with Jo-Carroll, most all of the jobs were done by hand. We would set poles using an old A-frame truck that would be considered an antique by today's standards." "Nowadays, the line work is done with modern bucket trucks. We still climb some of the poles we can't reach with the truck, but in those days we climbed everything." Vic went on to recall, "The way we are providing service today, is much better than in the old days. Back then, the members could withstand outages much better than they do now. Today if people are off for an hour, they become upset. They demand far higher quality service than what they used to. Of course, nowadays everybody has everything electric, and back then a lot of things were still being done by hand on the farm." One aspect that has changed



Mason

dramatically is that of safety. "The safety aspect wasn't stressed nearly as much when I started here as it is now." Vic goes on to say, "These days everything is done by book—safety first. It's a big improvement."

Vic's retirement ends a remarkable career that spans four decades. His dedication and hard work during his long years of service with the cooperative is to be admired. Our members should join the board of directors and employees at Jo-Carroll in congratulating Vic in his fine career in rural electrification.

Vic plans to spend his retirement years with his pigeon-raising hobby.

Help us help you

Power poles

Working on power lines can be a dangerous job. Linemen must climb up and down poles in all kinds of weather, during the day or in the middle of the night.

A seemingly harmless act, like putting nails or staples on power poles to attach signs and poster, could become a nightmare for linemen. Nails and staples can increase the danger of electrocution if they come into contact with live wires. Sharp, protruding nails can tear holes in the protective clothing and gloves linemen wear to prevent electric shock thus resulting in injury.

Linemen also wear special boots and climbing hooks to allow them to get up the pole to inspect or make repairs to lines. If these hooks hit metal, they may be deflected, causing the lineman to fall.

Linemen are on the job to assure you quality, efficient, dependable electric service. Show them you care. Don't use power poles for signs and posters!

Meters

If you want an accurate billing of your kilowatt-hour usage, it is important that our meter readers have access to your meter.

Some situations make the meter readers' job difficult and sometimes impossible:

- Have you installed a fence around your home and locked the meter inside?
- Have you added a garage, thus locking your meter inside?
- Are there bushes growing tall and wild blocking the meter?
- Unfortunately, dogs don't know the difference between burglars and meter readers. Is your dog tied close to the meter?

Any of these situations sound familiar? Remember, if you can't get to your meter, neither can we! Situations such as these makes the job of a meter reader more difficult and can actually present a danger.

If you have any questions about your meter or need to make arrangements for the meter reader to have access, please call us. (1-815-858-3311)

Spotting and reporting electrical hazards

It is physically impossible for cooperative personnel to inspect every mile of line in the system on a daily basis. You can lend your valuable support by watching for damaged electric wires and other pieces of electrical fix-

tures and equipment and then reporting such hazards immediately to the cooperative.

Should you come across a damaged or fallen utility pole, please call us at 1-815-858-3311, **immediately. Meanwhile, do not touch anything at the scene!** Crews will be dispatched at once to correct the situation. If possible, remain on the scene to warn others of the hazard until our repair crews arrive.

Storms, accidents and vandals sometimes cause damage to power lines, insulators and other pieces of electrical equipment. report any damage you see.

Trees can be dangerous conductors of electricity. Report trees that are in contact with the power lines or which might come into contact with the wires should they fall.

Antennas for use with televisions and C.B. radios have created quite a few problems at times. Never erect an antenna where it can come into contact with power wires. Please report any antennas you see that are creating a potentially dangerous situation.

Be a member of our Safety Team! Spot the hazards and report them to us immediately!

Kenneth Mulgrew

Reader prize

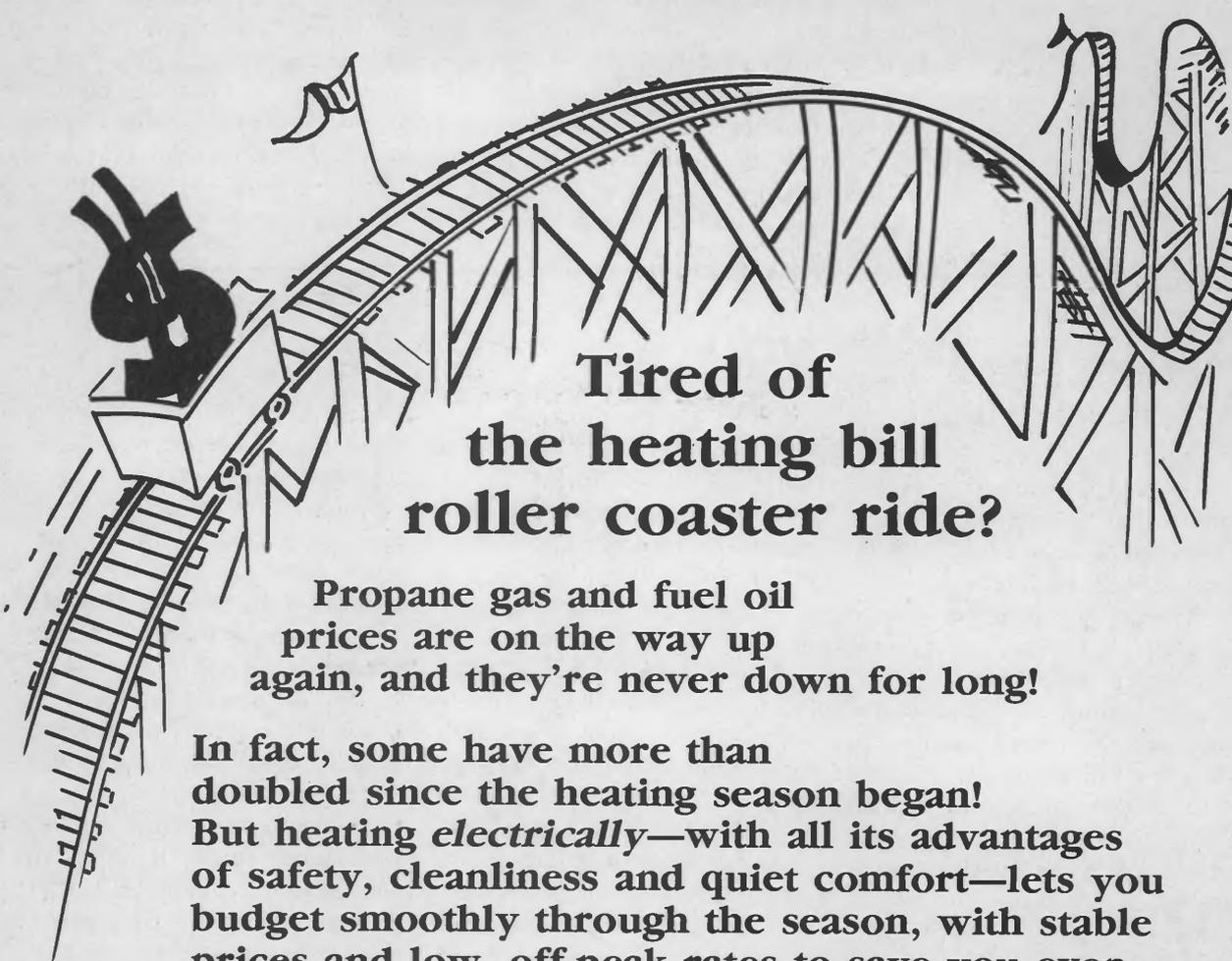
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Tired of the heating bill roller coaster ride?

Propane gas and fuel oil prices are on the way up again, and they're never down for long!

In fact, some have more than doubled since the heating season began! But heating *electrically*—with all its advantages of safety, cleanliness and quiet comfort—lets you budget smoothly through the season, with stable prices and low, off-peak rates to save you even more money.

Get away from the ups and downs of heating bills. Contact Jo-Carroll Electric Cooperative.

Equivalent energy costs for space heating

This chart can be used as a guide to comparative costs for electric resistance-type heating. Jo-Carroll's Dual Fuel rate is 3.0 cents per kilowatt-hour. The line highlighted on the chart shows this rate and the equivalent costs for other heating fuels. If you are paying more than 48 cents per gallon of propane for use in a standard-efficiency propane furnace or more than 73 cents per gallon for use in a high-efficiency propane furnace, you can heat your home more economically with electricity on Jo-Carroll's Dual Fuel rate. The same holds true for fuel oil if you are paying more than 70 cents per gallon.

Equivalent per gallon cost table

Electric kwh	Std. LP (1)	High Eff. LP (2)	Fuel Oil (3)
2.5	.40	.61	.60
3.0	.48	.73	.70
3.5	.56	.85	.81
4.0	.65	.97	.93

- Notes: 1. 60 percent is the number the gas industry is now using in furnace commercials.
2. 90 percent (the same 96 percent number given applies to natural gas, generally LP gas is not stated).
3. 55 percent annual average.

These figures are based on the following assumptions:

Electricity—3,414 BTU per kwh and 100 percent annual efficiency

Fuel oil—138,000 BTU per gallon of No. 2 fuel oil and 55 percent annual operating efficiency.

Propane—91,500 BTU per gallon and 60 percent annual operating efficiency.

Jo-Carroll Hi-Lines

Jo-Ca

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

MANAGER'S REPORT by Connie M. Shireman



Shireman

Capital return credits

The Jo-Carroll Electric board of directors voted in November to return capital credits totaling \$131,854.96 to members who received electric service from the cooperative in 1967.

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 in an escrow account 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.

Richard Reusch, president of the Jo-Carroll board, said "We are very pleased to be able to retire the patronage capital from 1967 at this time. 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." The amount each of the members spent for electricity at Jo-Carroll in 1967 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.

Jo-Carroll has retired \$731,839.20 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.

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 capital credits.

Happy Holidays

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

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

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 board of directors. Here is how the election process works at Jo-Carroll Electric Cooperative. Prior to the annual meeting, a special mailing is made to elect 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.

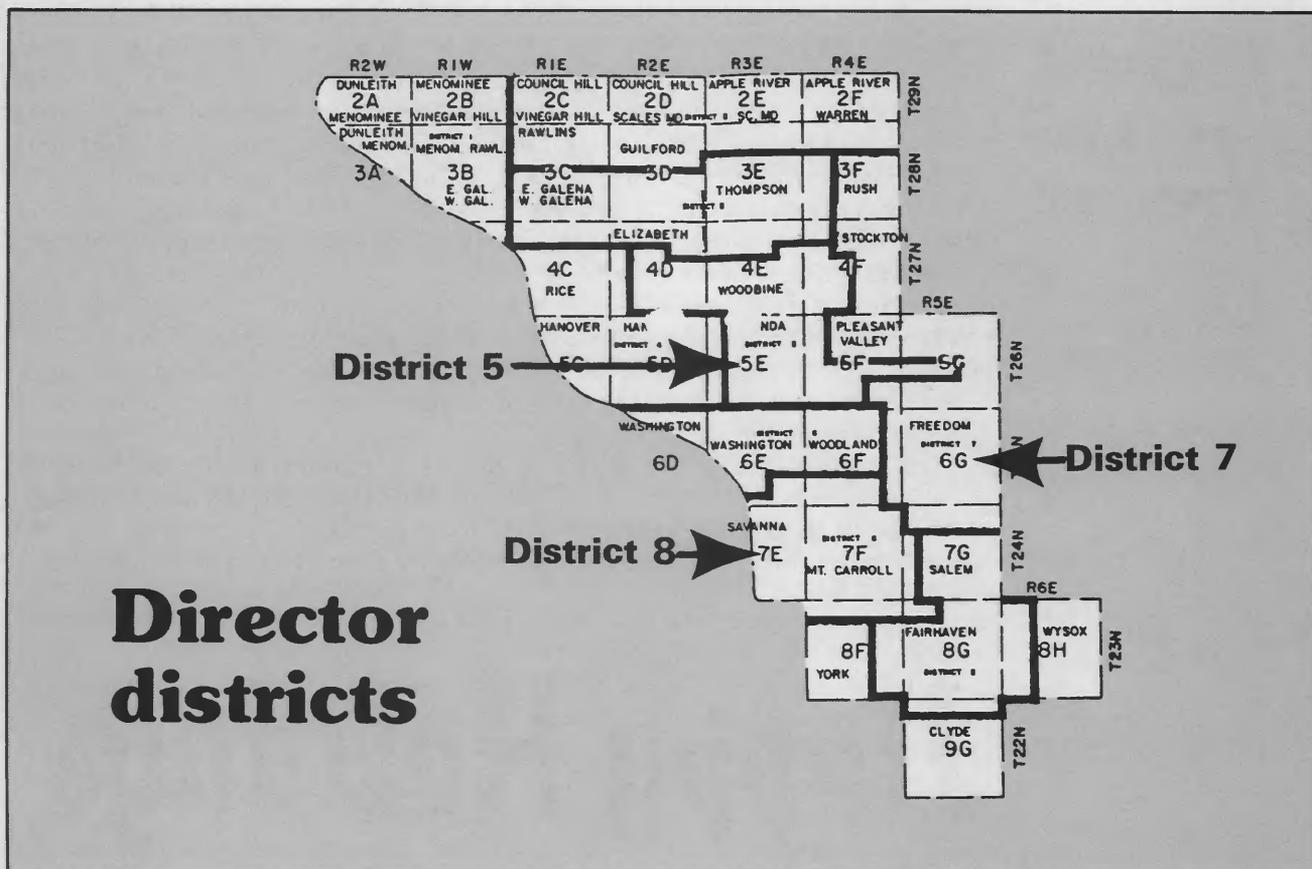
The nominees who will appear on the ballot are chosen by a nominating committee of Jo-Carroll members. This year's nominating committee will meet at the headquarters building early in January to submit the names. Any members interested in becoming candidates should contact this committee. Directors are to be elected in Districts 5, 7, and 8 this year.

Members of the committee include:

District 5: (Incumbent: Richard H. Reusch) Donald Krug, RR 1, 8513 S. Massbach Rd., Elizabeth; Donald Thoren, RR 1, 8033 S. Massbach Rd., Elizabeth; and Raymond Steffes, RR 1, 6950 Massbach Rd., Elizabeth.

District 7: (Incumbent: Rodney Fritz) Kenneth Kniss, RR 2, Lanark; Glen Bork, RR 2 Box 215, Mt. Carroll; and Greg Flikkema, RR 2 Box 135, Lanark.

District 8: (Incumbent: Vernon C. Law) Harlan Brunner, RR 1, 4606 W. Georgetown Rd., Savanna; Albert Grinnell, RR 1, 5049 W. Georgetown Rd., Savanna; and George D. Hartman, RR 3 Box 17, Mt. Carroll.



Reader prize

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Peak nights cost big bucks

With the arrival of winter, we are in the season of the highest electrical demand for the cooperative. This means that we must build all equipment from the power plant down to the wires to your house to handle the anticipated load on the coldest nights of the year.

In recent years, the wholesale cost of power that we pay for the energy that is delivered to your homes and farms has begun to more clearly reflect the cost of the power. Since energy used at the highest peaks of the year is what determines the need for equipment from the plant to your home, peak usage now basically determines what our cooperative must pay for its share of this equipment.

Quite simply, Dairyland Power Cooperative, which supplies our power, needs approximately \$60,000,000 per year for demand-related expenses. At the end of the winter, Dairyland looks at the five highest one-hour peaks that occur on the system and then sees what percentage of that total demand we at Jo-Carroll Electric Cooperative used. We then get billed for that percentage of the \$60,000,000.

For the typical Jo-Carroll member, more than 30 percent of the total yearly power bill will be determined by what is used during these five peak times. We have made great strides in managing our demand by the use of our load management equipment, which now is tied into nearly all the electric water heaters on our system and 155 electric heating loads. These devices save cooperative members more than \$200,000 in demand charges every year.

We also need member cooperation to save even more. If each member would do his or her part to reduce peak usage between 5:30 p.m. and 8:30 p.m. on those nights that have a 10 degree or colder wind chill, we could all save even more money on our wholesale energy bill.

Think about the potential costs/savings that this offers. A car heater or electric space heater (1.5 kw) that only runs those five key hours could add more than \$150 to the wholesale power bill for the next year. Drying clothes with an electric dryer during these five hours could add nearly \$600 to the wholesale cost of power. Think about it for a moment—drying clothes at the wrong time could equal half the total energy bill for a house for a year. Ten horsepower (498) of milking equipment running on peak adds more than \$1,000 to the total wholesale bill.

Even little things like Christmas lights can add up substantially. Five hundred watts of Christmas lights running during the peaks could cost \$50 in demand charges.

Now as winter approaches, we encourage all members to do their part to reduce our demand during the early evening hours on cold evenings. Please refrain from using any unnecessary electric loads during these hours. The impact of your usage will not only affect power costs today, but also tomorrow.

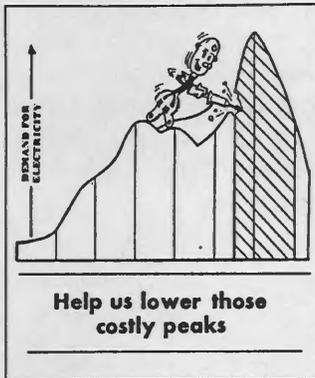
If we reach certain thresholds of power usage at peak time, we must again start new power plant construction. If or when this occurs, demand costs will rise dramatically from the levels of today. When the next generating plant is build, it will be too late. We will all pay for it.

Right now, however, what we do at peak times can and will affect the need for the future generating plants and what we do on cold evenings this year will directly affect the price we pay for energy in the next decades. Even your children and grandchildren will be affected by what you do at peak times as early as this winter.

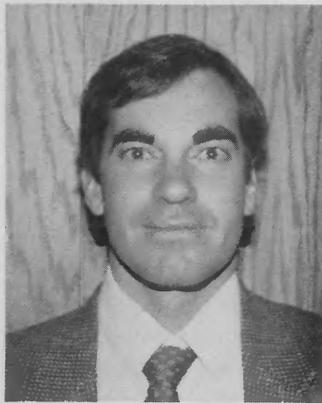
The day will probably come when individual members will be charged for energy based on their individual usage at peak times. Metering technology is evolving to that point, and already many large power users are billed in this manner. When that day arrives, members will directly see the impact that their peak demand has on their bills.

Until that time, however, if each member uses energy responsibly during peak times, we can all benefit from the reduced cost of energy. Through cooperation and responsible usage at peaks, we can control energy costs next year and into the next decade. Every bit of help saves us all money.

Ronald Shellady



New director profile: Rodney Fritz



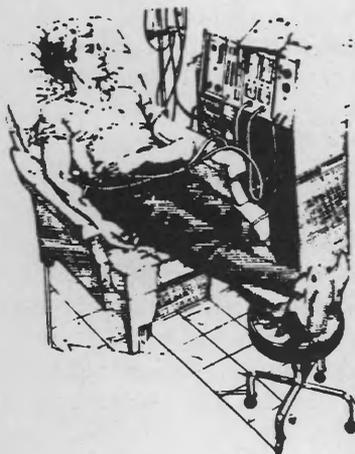
Fritz

Rodney Fritz of rural Mt. Carroll has been selected to fill the unexpired term of long time District 7 director Chuck Flikkema. Chuck, who has been on the Jo-Carroll Electric board since 1974, recently built a new home not served by Jo-Carroll Electric.

The Cooperative's bylaws require that the nine directors for the organization reside in homes on the cooperative's lines, and when a director leaves they meet to appoint a new director. Flikkema's last board meeting after 17 years was in November. The Cooperative is very appreciative of Chuck's leadership and expertise during his many years of service on the Jo-Carroll Electric board.

The new director is a lifelong resident of rural Mt. Carroll. He graduated from Eastern Illinois University in 1985 with a bachelor of science degree in business with an accounting major. The Fritz Farm was named the Soil and Water Conservation Farm of the Year for Carroll County. He is very interested in conservation issues and has done a great deal of work with his fields in this area. Fritz is a private pilot in his spare time. "I look forward to working with the Jo-Carroll Electric Cooperative board and learning more about the organization in the coming months," Fritz said following his appointment.

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