



# Illini Electric News

ILLINI ELECTRIC COOPERATIVE 217-352-5241 CHAMPAIGN, ILLINOIS



*Champion,  
left, and Smith*

## Smith retires; Champion new manager

A career in rural electrification with 37 years of service to Illini Electric Cooperative ended earlier this month. Walter R. Smith, who became an employee of Illini in 1947, and served the last 24 years as manager, has retired. Wm. David Champion Jr., who has worked for Illini since 1973, has been chosen by the board of directors to replace the retiring Smith. Smith's long career covers nearly the entire history of rural electrification.

Champion, a native of rural Gays (Moultrie County), began work part time for Illini in 1973 while he was a senior at the University of Illinois. After receiving a B.S. degree in accountancy in 1974, he became office manager. He was named assistant manager in 1979. Champion has completed a special management training program at the University of Nebraska, is a participant in an advanced management course at the same university and has studied budgeting and financial planning at the University of Wisconsin. He has also completed the Dale Carnegie course.

The new manager, his wife, Deborah, and daughters Becky (7) and Teri (5) live near Ogden. Among their activities are the raising, training, breeding, selling and showing of quarterhorses.

A 1965 graduate of Windsor High School (Shelby County), Champion spent four years in the Air Force. During his service, he received two Air Force Commendation Medals, one during duty in Thailand and another while stationed in Guam. He served as an electronic warfare technician during the Vietnam conflict.

Smith is a 1947 graduate of the University of Illinois with a degree in

electrical engineering. He began his career with Illini that year as system engineer. From 1952 until 1958 he was operating superintendent, became assistant manager in 1958 and was appointed manager in 1960.

A native of New Canton (Pike County), Smith served in the Army during World War II, including service in the South Pacific.

#### Wired farm homes

Smith's relationship with rural electrification goes beyond his start with Illini: *"In my home county, I assisted an electrician in wiring a number of farm homes after the Rural Electrification Administration was established. It would bring tears to your eyes to see those people's faces glow when they first turned on their light. Actually that was the impetus, I think, for me to come to the University and study electrical engineering. I was intrigued by the many uses that electric energy could have."*

#### Electrification's benefits

Smith found the post-war rural areas different from those he had known before he started to college. Electrification was making its presence felt as rural America began to receive benefits heretofore only known in the towns and cities served by investor-owned utilities and municipal systems: *"Right after the war, people began buying appliances and adding load to the systems. The system that was in operation at that time just wasn't adequate. There were low voltage problems with a lot of outages. That was the main reason I was hired — to rebuild the system to serve the needs of its members."*

Smith says electrification brought efficiencies to the farms that paved the way for major strides in agricultural production.

The former manager also was instrumental in efforts to keep wholesale power costs as low as possible, including helping negotiate long-term power contracts and working toward meeting the long-term power needs.

## New look for Illini publication

Have you noticed the new look of our center section?

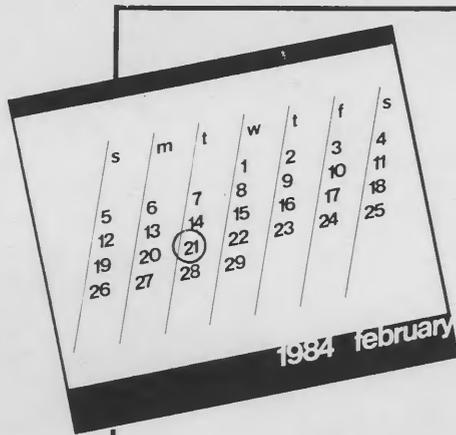
Each month, the center section is devoted to local stories and announcements. As editor of the center section, I have found it increasingly difficult to reduce the important information down to the two center pages available. The new look includes expanding the local pages to four. With this extra space, more stories can be included as well as being able to go in depth on some important stories. The new format and colored paper will hopefully make it more noticeable and easier to read.

#### Now you can help

Now, I wonder if you can do something for me. We feel certain that the total magazine is widely read. Those of you who read this should have some input to what is included. Many years ago our sources told us the average reader wanted stories of personal interests or hobbies of our members. When the energy shortage developed, our center section devoted a large amount of space to help you conserve energy. Now it seems there is less interest in conservation. What's next? Well, that's what I'm asking. How can your cooperative help you? What type of stories or areas should we focus our attention?

Over the next few months I hope to use the extra space to explore new areas, perhaps even get back to the basics of certain issues. Please share with me your thoughts and concerns of the general topics as well as the overall appearance of the new image. Send your reply to Ray Weiss, Member Service Adviser at your cooperative office.

—By Ray Weiss



**Place:** Ramada Inn Convention Center  
1505 S. Neil  
Champaign, Illinois

**Date:** Tuesday, Feb. 21, 1984

**Time:** Registration — 10:00 a.m.  
Luncheon served at 12 Noon  
Meeting starts — 12 Noon  
Officers' Reports  
Guest Speaker —  
Bide L. Thomas  
Attendance prizes will be drawn

## 45th annual meeting set for Feb. 21

The Ramada Inn Convention Center in Champaign will be the location for Illini Electric Cooperative's 46th annual meeting Tuesday, Feb. 21. Prior to the business meeting, a luncheon will be served, beginning at noon.

In order to have enough meals reserved, the cooperative must know in advance how many people will be attending. The annual meeting notice will be sent to each member around Feb. 6, along with a reservation card. This card must be returned along with a dollar for each meal to be served. In the past, a large number of meals were reserved which the cooperative was forced to pay, even when these people did not show up. Please be assured this is not an attempt to discourage you from attending, we only want to limit the number of meals unserved yet paid for.

### Cutoff date

Feb. 15 is the cutoff date for return of the reservation card and dollar donation for each meal. At this time, we must turn in an exact count for the meals. Meals will not be served without a returned reservation card prior to Feb. 15. Please help us by returning those cards as soon as possible. The board of directors and staff would like to invite each and every member to attend the annual meeting, to hear the officers' reports on the past year's activities and to exercise your democratic right to vote in the election of directors.

In addition to the officers' reports, elections will be held and directors will be elected from the following areas: Champaign County northwest; Piatt County; and Vermilion County. The nominating committee, appointed by the board of directors, will submit names to be voted upon at the meeting. Nominations will also be accepted from the floor.



Charles Cole

### Featured speaker

The keynote speaker will be Bide L. Thomas, executive vice president of Commonwealth Edison Company in Chicago.

The Ramada Inn Convention Center is located at 1505 South Neil Street in Champaign, just one block north of the Cooperative's office. Plenty of free parking is available, so plan to be there. For those in attendance, many good prizes will be awarded at the close of the meeting.

For an informative and interesting afternoon, mark your calendar for Feb. 21, and return your reservation card by Feb. 15.

# 999 issues ago

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*Editors Note: This article appeared in the Jan. 1, 1983, issue of the Rural Electric Newsletter (an internal weekly newsletter by the National Rural Electric Cooperative Association). To celebrate it's 1,000th issue — the publication began April 18, 1958, as the Rural Electric Minuteman — NRECA reprinted the first "Conservation Piece" from the first Newsletter. The conclusion is just as fresh and just as special as it was 25 years ago.)*

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There's a story behind the problems of rural electrification:

Remember the days when there was no electricity in your home? The black chimneys on coal oil lamps? The soured milk? The water bucket? The weak radio batteries?

Remember when there seemed to be no chance of ever getting power? When the electric companies either laughed at you or wanted you to pay for your own line?

Chances are you even remember the day you first heard about REA — and how you might get power through your own non-profit system. You remember when your neighbors came around to sign you up, or maybe you were one of those pioneers who helped sign up others.

You got electricity, and with it, a new way of life. You got it by working with your neighbors in a true partnership with the Federal government. Through REA, the government loaned your local rural electric system the money to build lines and set up an organization. You've done the rest yourself, you and your neighbors.

A success story — in countless ways. But success did not come just because the principle was sound or the need was great. From the beginning the rural electrification program has been hounded at every turn.

The same power companies that would not build rural lines themselves have waged bitter and vicious war on the rural electric systems. So have big business interests that hate all farmer cooperatives. And so have many spoils system politicians.

The program has been successful because the people who believed in it were willing to fight. If they had faltered at any point over the past 23 years, the rural electric systems would have been swallowed up. Countless rural homes would have been dark last night.

Today, the war rages hotter than ever. Our enemies are bolder. They think rural people have relaxed now that their primary lines are up. They think you and your neighbors aren't worried about your power supply anymore. They think the time is ripe to move in and take over.

If they're right about this, if rural electric members are taking their systems for granted, if they won't listen to you — then the rural electrification program is doomed.

An electric system cannot be built and forgotten. It's a living thing that has to grow and expand. Skeleton lines are built, and they're all right at first — but then people start using more and more power, and the lines must be heavied up. New power sources must be found. Many parts of the system must be rebuilt.

If the system doesn't grow, it withers and dies because it no longer meets the needs of the people. If it doesn't grow, motors get hot and burn out, TV screens flicker and fade, electric ranges fail to heat.

It takes money to rebuild lines and keep a power system up to date. More money than it takes to build the lines in the first place. And it takes huge amounts of power to supply the zooming demands of rural people. In rural areas, power use is doubling every five to seven years. Where will the money and the power come from?

That's the vital question in rural electrification today. The systems must have ample loan funds at reasonable interest rates. They must have an assured supply of wholesale power at rates that they can afford to pay.



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## F.D.R. as appliance salesman

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*EHFA helped put  
rural electrification  
to work 50 years ago*

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Monday, Dec. 19, 1983 marked the 50th anniversary of the signing of an obscure executive order by President Franklin D. Roosevelt which foreshadowed and also helped assure the successful development of rural electrification in the United States.

When he signed Executive Order No. 6514 on Dec. 19, 1933, F.D.R. created the Electric Home and Farm Authority (EHFA), as a government corporation "having the power and functions of a mortgage-loan company." It was a Tennessee Valley Authority innovation, enabling electric appliance dealers to rediscount at very low interest rates the notes that customers gave them to purchase irons, washers and radios.

The EHFA was a pet project devised by TVA Director David E. Lilienthal to hitch the methods of installment buying to the TVA objective of building electric load markets for TVA wholesale power in the impoverished region. "I spawned this enterprise (EHFA) as a response to the atmosphere among credit companies and utilities that 'there is no market for major appliances' in the Tennessee Valley," Lilienthal recalled in a 1971 letter to cooperative historian Joseph G. Knapp. The TVA wizard also succeeded in confounding main street skeptics in the bargain.

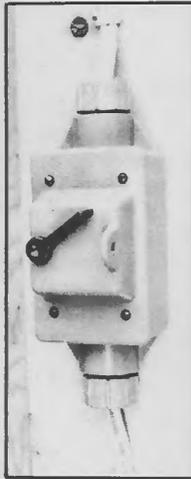
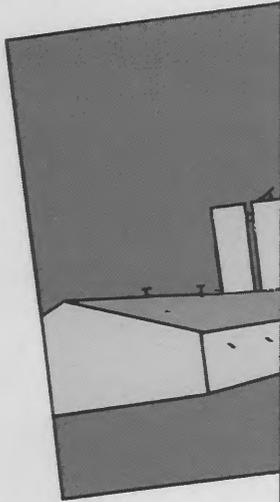
In the definitive work on early rural electrification and REA, the historian D. Clayton Brown writes in *Electricity For Rural America* that when EHFA loans were made available throughout the TVA area, "appliance sales jumped 300 percent. Greater consumption of energy enabled TVA to offer minimum rates. By combining low-cost energy with loans for appliances, TVA broke the cycle of expense of the rural electric customer and put electrification within the range of the farmer's pocketbook."

The spectacular success of EHFA in giving strong starts to fledgling co-ops in the TVA service area caught the attention of the new REA Administrator, Morris L. Cooke. In the late spring of 1935, he had just experienced rejections and rebuffs from the private power companies as well as municipal electric utilities. Both said they weren't interested in REA loans to construct lines for service to the nation's rural people. A young TVA lawyer named Joseph E. Swidler told Cooke of the success he and Lilienthal had struck in organizing EHFA and Alcorn County Electric Power Association at Corinth, Miss., a co-op organized along the lines of the Rochdale principles. Cooke seized at these two straws, which immediately proved to be bulwarks of his new agency.

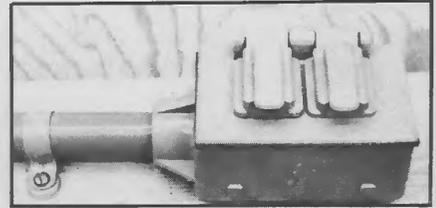
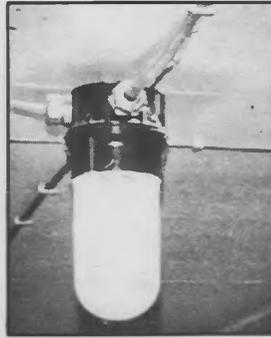
Alcorn County Electric emerged as the pathfinder co-op model for REA; and a few months later, the EHFA was made an REA consumer loan program.

—Patrick Dahl  
*Rural Electric Newsletter*

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Proper equipment and techniques can help prevent problems in farm structures. Left: Nonmetallic boxes with seals to lock out dust and water; be sure the UF cable is secured to the structure within eight inches of the box. Center: Corrosion-resistant incandescent lamp fixture wired to prevent entry of water and dust. Below: Dust- and water-tight switches should have hinges at top if possible.



## Wiring livestock, poultry buildings

The National Food and Energy Council has just published a new booklet which tells about the selection and installation of electrical wiring and equipment within confined or semi-confined buildings. Buildings such as confined hog and poultry houses containing corrosive vapors, moisture, dust — or a combination of these — are common. Such environments require careful selection of equipment and proper installation methods to protect livestock and personnel working in the building.

The corrosive and damp atmosphere of confined buildings has caused corrosion of electrical equipment that is not found in other farm applications. In the past, metal conduits and boxes have been used to protect wires. But, the environment in livestock and poultry buildings will usually cause ordinary metallic electrical conduit and boxes to corrode rapidly.

In addition, a very serious problem can develop when conduit is run through a wall that separates a warm moist environment from a cold environment. The temperature difference causes the corrosive vapor to condense to a corrosive liquid inside the conduit or electrical box. This internal corrosion can be potentially hazardous since the damage goes unnoticed until an electric failure or short occurs. Also, in cold climates, ice can form. Water or ice can cause an electrical short that could end in fire damage to the building, loss of livestock or poultry, or stray voltages. While these conditions can be most severe at or around the main electrical panel, similar problems can occur in and around outlet, switch and control boxes.

### Multiple hazards

Improper wiring and inferior equipment leads to hazardous situations for livestock or poultry, dangerous worker conditions, fires, and the expense of early rewiring of buildings. In addition, companies that are asked to insure poorly wired buildings and their contents must often increase rates to make up for the increased risk. Some companies will not assume the extra risk of insuring improperly wired buildings even at increased rates.

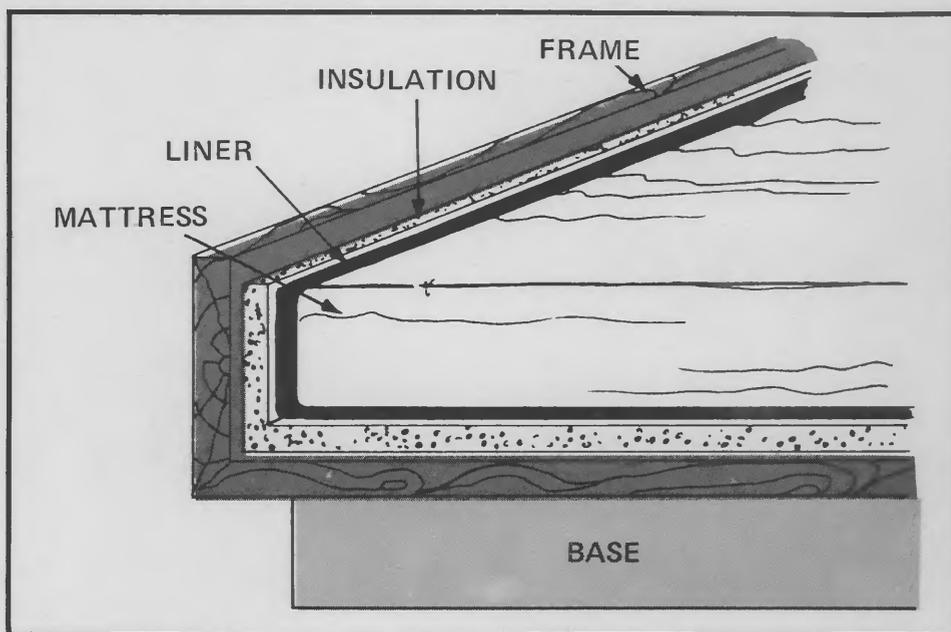
“Electrical Wiring Systems For Livestock and Poultry Facilities” describes some problems which can occur in confined buildings and how to properly select and install the electrical equipment and wiring. If you would like to have a copy or have specific questions concerning wiring within confinement or semi-confined buildings, please call the Member Service Adviser at Illini Electric.

## Waterbeds require insulation

A waterbed is basically like a water heater: the better insulated it is, the less energy it will need to keep the water warm. Heating pads used to keep the water at a comfortable wintertime level (generally 90-92 degrees F.) will use \$10 to \$15 of electricity per month. Although the water temperature is lowered during the summer (to approximately 80-85 degrees F.), the lowered water heating cost is possibly offset by the extra air conditioning required due to the heat given off into the room by the waterbed. Further testing will be done this summer to determine the true effect a waterbed can have on your summer bills.

Adding insulation to your waterbed will reduce the amount of electricity needed to keep the water heated. Several kinds of insulating materials can be used; insulation board, such as one-half-inch extruded polyurethane (such as Thermax), will fit easily between the mattress and frame as shown in the diagram. Adding the insulation board will raise the level of the mattress only slightly. If you don't want the mattress raised, you can add loose-fill insulation to the cavity of the base. However, this leaves the overhang uninsulated.

An easy way to keep your waterbed insulated is to make sure it's heavily covered when it's not in use. Proper insulation can make your waterbed more affordable as well as comfortable!



## Keep your membership current

We have found that a number of memberships are still being held in the names of members who are deceased. One example of this is when a member and his wife pass away. The son of the member takes over the farmstead, but simply forgets to have the membership changed to his name. This can create problems for the cooperative in many different ways. If the son reports that his power is off and the account is not listed in his name, the cooperative's linemen do not know where to go to repair the problem.

Problems can also arise in the area of capital credits. If the account is still listed in the deceased member's name, capital credits would be allocated to him, and the son may have to share them with any brothers or sisters. Even though he has been paying the full electric bill at that location.

Many other problems can result from this situation. If you are involved in this type of situation, please contact your cooperative office so one of the office personnel may correct the problem.

# Members also own their co-op

Rural electric system members are really much more than that. They are owners, and that says some highly significant things.

Many people hold a variety of memberships — social clubs, civic groups, veterans organizations, churches, alumni associations. And these relationships have taught us about the membership role and what it commonly implies.

Most of us have another kind of relationship, too. We are owners. Some own homes and businesses, others own cars, and still others own clothing, furniture, land, tools, livestock — one or more of a variety of things.

It isn't a matter of how much you own that is important to this discussion. What is important is the central meaning of ownership and what it confers and demands.

When you own your home, for example, you and all of your neighbors understand that you, as the owner, have clear rights in connection with that property that belong to owners alone. You decide whether to occupy it or rent it out; you say when it will be painted, and you choose the color; you determine whether others may come in, or if you prefer to keep them out. This is your castle and you are the king and queen.

But if these are the only things you worry about and attend to, it is more than likely that you will not be king and queen of much for long.

## Not simply rights

And that is because there is more to ownership than simply rights.

There are responsibilities as well, and unless these are met in good conscience it is hardly possible to preserve rights in any ownership of substance and worth.

Think about this:

In time, your home, like all homes, will show a leaky roof, blistering paint and crumbling caulking, as the years and weather work their inevitable will.

Whose problems are these?

They are not the concern of your neighbor next door, of your friend down the block, or of anyone else you know. They are your problems, exclusively yours, because owners bear responsibility for correcting such troubles. Ignore them, and you will reign, at last, over a castle with a leaking roof, facing the certain decay of whatever it may represent.

## Collective sharing

Rural electric consumer-owners, collectively, share the same twin mantles of rights and responsibilities concerning their electric service as those they shoulder individually as owners of anything else.

Their right to have something to say about this essential service rests squarely on their sharing a responsibility to help assure its organizational health.

They are owners. And owners tend their own gardens, patch their own leaky roofs, fix their own flats.

Owners mind their own business — and few have a more important business to mind than their own rural electric system.

—Gene Clifford

*National Rural Electric Cooperative Association*



# Illini Electric News

ILLINI ELECTRIC COOPERATIVE 217-352-5241 CHAMPAIGN, ILLINOIS

## Member group being organized

Your Cooperative plans to establish an advisory committee made up of members interested in learning more about their cooperative. The purpose of the Member Advisory Committee is to provide a liaison and a channel of communication between the membership, board of directors and management to provide a means for the Cooperative to gain a better understanding of the concerns of the membership, to encourage member involvement and to foster a close member/cooperative relationship.

The Member Advisory Committee will consist of 16 members and their spouses, one from each geographic board district. All interested members will be invited to attend an information meeting to learn more about the committee. At that time, everyone will be divided up into their respective board districts and will caucus among themselves to select the two individual members and spouses representing that particular district.

The length of service on the committee will be for two years. However, the first group of committee members will serve for 1½-year and 2½-year terms to get a calendar-year basis. Replacement of committee members will be by the outgoing members of the committee. At this time, quarterly meetings are planned with extra meetings possible for special tours, etc. The Committee will select its own group of officers and run its own meetings. Management and staff will be ex-officio members and will provide information and resource assistance and will suggest topics necessary for the committee to function.

Any member interested in becoming a part of the Member Advisory Committee is requested to fill out the form below. For further information, call Ray Weiss at the Cooperative office at 352-5241.



**MEMBER ADVISORY COMMITTEE**

I volunteer to become a member of Illini Electric Cooperative's Member Advisory Committee.

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Phone \_\_\_\_\_

Enclose with electric payment or mail to:  
Illini Electric Cooperative, P.O. Box 637, Champaign, Illinois 61820

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From left are Manager Wm. David Champion Jr. and reelected directors Robert D. Clark of Atwood, Clarence C. Maddox of Allerton and L. Dean Ward of Champaign.



## Three directors reelected

### Weather a factor in sales decline

Three directors were reelected to Illini's board of directors during the 46th annual meeting of members Feb. 21 in Champaign. Elected to additional three-year terms were L. Dean Ward of Champaign, Robert D. Clark of Atwood and Clarence C. Maddox of Allerton.

Maddox was first elected to the board in 1951. Clark is beginning his third three-year term and Ward is beginning his second.

Manager Wm. David Champion Jr., in his first report to members, explained that the weather was largely responsible for the cooperative's 7.3 million kilowatt-hour decrease in sales from 1982.

"The early part of 1983 brought mild winter weather with a reduced heating load," Champion said. "Summer brought hot, dry weather, which shrank most of the corn crop. This, along with the Payment-In-Kind program, reduced our fall grain-drying load to virtually nothing."

The decrease in electrical usage, combined with the cooperative's need to continue paying its fixed costs of operations, resulted in the 11 percent retail rate increase in September, Champion said.

Despite the significant drop in kilowatt-hour sales last year, Illini paid nearly \$530,000 more for wholesale power than it did in 1982. Last year's power bill of \$3,119,200 took 57 cents of every dollar in revenue the cooperative received. In 1982, wholesale power required 54 cents of every revenue dollar.

President Charles C. Cole of Rantoul asked members to remember that their nonprofit cooperative was organized, and continues to operate today, to provide for the welfare of its members.

"When we review what it costs for the electric energy we consume each month, we must remember that the cost involves more than just the price of a commodity," Cole reported. "It is the price we must pay for the whole bundle of services electric energy provides for us to maintain our quality of life."

Treasurer G. Jay Stiehl of Tuscola reported that the cooperative's operating revenue was \$5,504,292 in 1983, up nearly \$650,000 from 1982. Margins were \$245,393, representing four cents of every 1983 revenue dollar compared to eight cents in 1982. The cooperative's interest expense rose from \$397,580 in 1982 to \$545,018 in 1983. That meant that 10 cents of every 1983 revenue dollar went to pay interest compared to seven cents of every 1982 dollar.

The annual meeting speaker was Bide Thomas, executive vice president of Commonwealth Edison Company. Thomas, whose duties include overseeing the operation of his company's fossil fuel and nuclear generating stations, spoke on the nuclear power industry.

Also during the meeting, Illini began accepting applications of members interested in joining the volunteer Member Advisory Committee the cooperative is forming. (See the article on page 16a.)

"The cooperative is interested in improving two-way communication



*Above: An Illini member completes an application for membership on the Cooperative's Member Advisory Committee. Left: Employees assist members during registration.*



between members and the cooperative board and staff," Champion said. "One of the ways we can do this is through an advisory committee composed of volunteer members willing to serve for a two-year term."

Members who want more information about the committee should contact Illini Electric Cooperative.

After the business meeting, the board of directors met to reorganize. Officers for 1984-1985 are: Stiehl, president; Clark, vice president; Herbert L. Aden of Newman, secretary, and Ward, treasurer.

Illini Electric Cooperative serves approximately 4,275 member-owners along nearly 1,600 miles of energized line in parts of Champaign, Douglas, Edgar, Ford, McLean, Moultrie, Piatt and Vermilion counties.

Also serving on its board of directors are James Beatty of Philo, Laverl Byers of Tuscola and Wilbur Gady of Sadorus.

# Heat pump water heater

A simple, yet revolutionary way of heating water is beginning to catch on. The heat pump water heater is similar in size and appearance to a dehumidifier. This small heat pump is usually placed next to your existing gas or electric hot water heater. High pressure hoses are attached to the tank at the drain valve and the pressure relief valve. A very small circulating pump in the heat pump pulls water out of the bottom of the tank, heats the water to 140 degrees and returns it to the top of the tank.

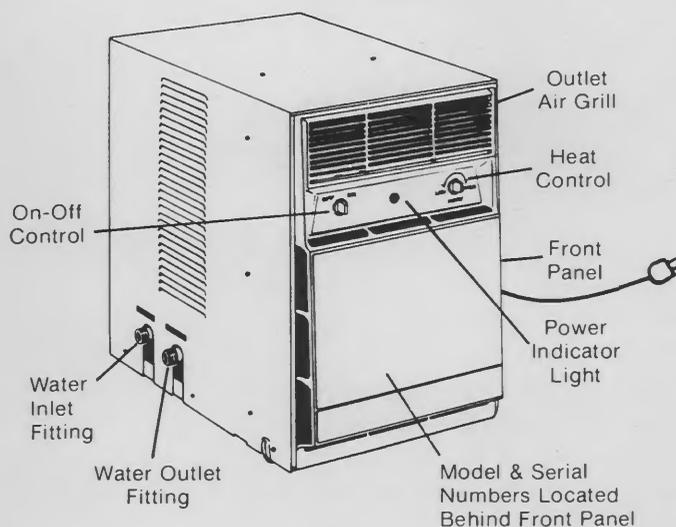
Hot water is normally produced by direct heat from an electric element or a gas burner, but the heat pump water heater transfers heat from the surrounding air to the water heater. Because it simply moves heat and does not produce it, the heat pump could cut the cost of heating your water by as much as 50 percent. A do-it-yourself installation kit and heat pump costs about \$700 and can save enough to pay for itself in around four years.

The heat pump works by removing heat from warm air that passes over its coils, and concentrates that heat to warm water. It cools the air in the process, and removes moisture, much like a dehumidifier, so a drain must be provided for the water that is collected. During summer, the heat pump will cut your water heating costs in half. At the same time, it eliminates the need to run a dehumidifier, plus produces 12,000 Btu of free cooling while in operation. It sounds too good to be true but with certain precautions, it works just that way.

In the winter, there are two factors that will affect the total savings. First, the unit must be in a freeze-protected area at least 100 square feet in size to prevent overcooling the room. Secondly, consider what happens to the cooled discharge air. The best location for the heat pump is in an unheated room or basement, eliminating the need to worry about cooled air. If the discharge air must be heated by the main house heating system, the overall efficiency may be affected.

When the unit is located in a heated room, the heat pump should only be used in a house with heating systems that are more than 100 percent efficient, such as the air-source heat pump (170 percent) and the groundwater heat pump (300 percent). With all other heating systems such as electric resistance (100 percent) and gas or oil (70 percent), there would be no overall

advantage to operating the heat pump during the winter. In this case, it would be wise to only operate it during the non-heating months. The reduced operating time would lengthen the payback time; however, the free cooling obtained would keep the payback within a reasonable time period. The calculated savings are based on the use of the unit in an unheated basement where the cooled discharge air does not need to be reheated during the winter. Other savings not included are the possible elimination of a dehumidifier and its cost of operation. An average dehumidifier will use 200 kilowatt-hours a month. These savings, along with the lower cost of heating water, could reduce the payback to three years or less. A very good investment!



For further information, please contact the Member Service Adviser at Illini Electric.

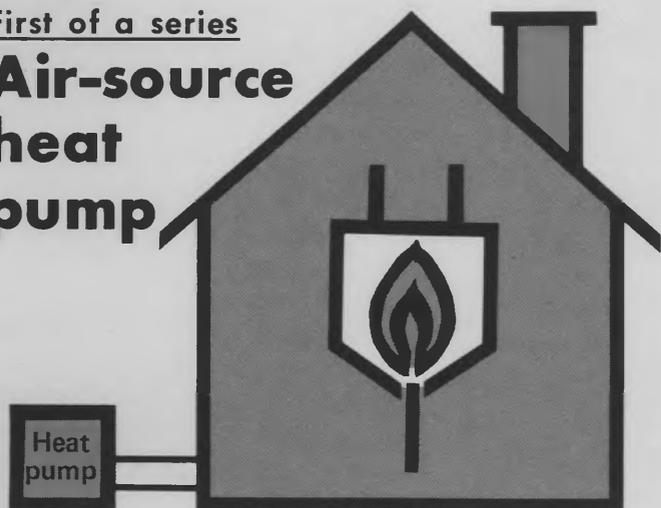


# Illini Electric News

ILLINI ELECTRIC COOPERATIVE 217-352-5241 CHAMPAIGN, ILLINOIS

First of a series

## Air-source heat pump



As prices keep edging upward, anything that looks like a way of saving money gets our attention. Heating costs are certainly edging upward — maybe climbing rapidly is closer to the truth. For some, however, there is a way to cut annual heating bills.

If you are heating with a gas or oil furnace you may want to consider adding a heat pump to your existing furnace. This combination is referred to as a dual fuel or add-on heat pump system.

At the present time your furnace does all of the work and probably does a pretty good job of it. But the cost of getting the job done has been going up and the outlook suggests a continued rise.

According to the Department of Energy (DOE), the seasonal efficiency of the average well-maintained oil furnace is about 65 percent; gas is 61 percent. Remember these are seasonal efficiencies and reflect the average annual efficiency.

Most people assume their furnace has an efficiency rating of about 80 percent. However, the efficiency rating of furnaces is based on what is called a "steady-state condition." This means the furnace was tested under ideal laboratory conditions and operated continuously.

Your present furnace is  
least efficient during  
mild weather

Running nearly full time, furnaces can come close to their rated efficiency. However in mild weather your furnace starts and stops, causing a large share of the heat to be naturally vented during the "off" cycle. When the thermostat calls for heat, the preceding cool-down causes the burner to run for a longer time before the circulating fan moves the warm air through your home. As the outdoor temperature warms up, your furnace's efficiency can drop to as low as 45 percent.

The heat pump is up to  
300 percent efficient

On the other hand, the electric heat pump develops its greatest efficiency during the milder weather. The average heat pump will have an efficiency of around 300 percent when the outdoor temperature is 60 degrees, and operates at about 200 percent efficiency in 20 degree weather. That is, for each kilowatt-hour purchased, two to three kilowatt-hours of heat are produced.

This is possible since the heat pump does not create heat — it merely

*(Continued to 12b)*

transfers or “pumps” heat into your house. Even the coldest outdoor air contains some heat. The heat pump works much like a refrigerator and extracts heat from the air, pumping it into your home.

### Best of both worlds

Uniting a furnace and heat pump (a dual fuel system) is a realistic approach to improved efficiency. Using each system at times when it's most effective will offer real savings. Automatic controls can be set to run the heat pump when it's 20 degrees or warmer outdoors, and the furnace when it drops below 20 degrees. With this system, heat pump efficiency would average around 250 percent and the furnace around 70 percent – certainly the best of both worlds.

At the 20 degree switch-over point, nearly 80 percent of the heating needs would be supplied by the heat pump. This combination will cut your heating bill by 15-25 percent.

The heat pump looks exactly like a central air conditioner, and in fact operates as an air conditioner during the summer. Anyone installing a new furnace or adding an air conditioner should consider an add-on heat pump.

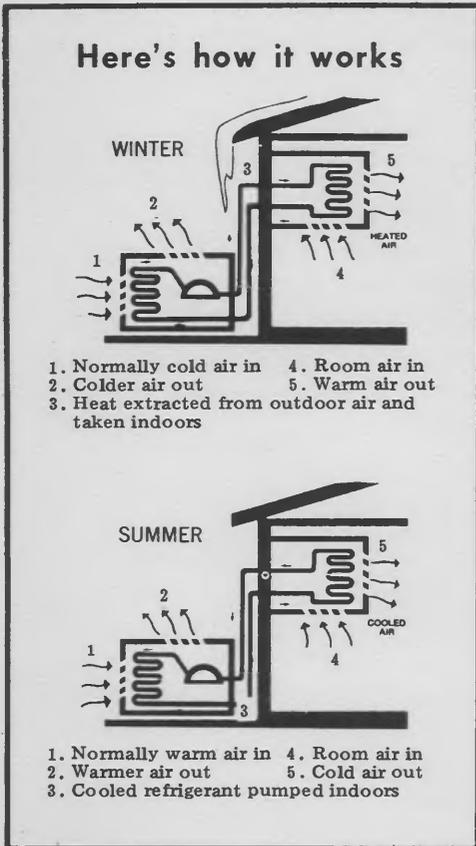
How can a heat pump be added to your existing furnace? By specifying the heat pump coil, compressor unit, and the necessary controls in place of the standard air conditioning coil and compressor, the add-on heat pump can be installed with very little additional cost.

All of the major heat pump manufacturers offer a complete package. The payback on your investment would be one to two years – a good investment indeed!

You may ask why your Cooperative is promoting electric heating. It's simple. By selling more kilowatt-hours, the Cooperative's fixed costs are more spread out, resulting in a slightly lower cost per kilowatt-hour. Selling more kilowatt-hours is one way your Cooperative can help hold the line on the cost of your electricity.

Your Cooperative strives to promote selective electric heating systems which benefit the individual electric heating customer as well as the membership of the Cooperative.

The three best heating systems for our Cooperative members are the ground water or earth-coupled heat pump, the add-on air source heat pump, and electric baseboard or ceiling cable. Each system has its own advantages. This month, the advantages of the add-on air source heat pump will be discussed.



### The add-on heat pump can benefit the Cooperative

As stated earlier, the add-on heat pump will reduce the individual's total heating cost. How then can it benefit the Cooperative?

Since the add-on heat pump doesn't operate when temperatures get extremely cold – usually at the time of our winter peak – it doesn't add to the Cooperative's peak load demand. The savings in demand charges will be reflected in your following month's wholesale power cost adjustment.

Although all electric heating systems are helpful, some electric heating systems can be even more beneficial to the entire Cooperative membership.

The add-on heat pump is truly the best of both worlds and offers you the chance to lower your total heating cost.

Want more information? Please call the Member Service Department at your Cooperative office.

# Cooperatives receive least aid

In evaluating any proposal to preserve and strengthen REA financing programs for rural electric systems, it's important to remember that each segment of the electric utility industry — investor-owned, publicly owned and rural electric — receives significant assistance from the federal government. It's vital also to keep in mind the vast differences in the areas served by each segment of the industry. Here are some facts that shed light on this most relevant topic:

## Power companies

- Accelerated depreciation and the investment tax credit reduces power company tax liability by some \$3.6 billion annually. This provides, in effect, an interest-free loan of that amount every year. In addition, a special tax break on the reinvestment of utility stock dividends — designed to help these companies to attract new investment — reduces Treasury revenues by as much as \$500 million annually.

## Municipals

- The ability of municipal and other publicly owned utilities to issue tax-exempt bonds results in significant interest cost savings, but also reduces federal revenues by the amount of tax that otherwise would have been paid by the holders of these securities — a loss estimated at \$331 million in 1981.

## Rural electrics

- Federal assistance provided through the REA financing program, determined by comparing the difference between the REA rate of 5 percent and the federal cost of borrowing, came to about \$68 million in fiscal 1982. Add about \$15 million for REA staff and administrative expense for the electric program, and the total comes to \$83 million.

The table below gives a graphic comparison of the relative assistance being provided, and some important statistics about the areas being served by each segment of the industry.

### Industry statistics

Industry Segment	Total Federal Assistance	Federal Assistance/ Consumer	Consumers/ Line-Mile	Revenue/ Line-Mile	Distribution Investment-Consumer
RECs	\$ 83 million	\$ 8.91	4.7	\$ 3,370	\$1,337
Public	\$331 million	\$40.45	77.5	\$68,128	\$ 648
Investor	\$ 3.6 billion	\$50.70	35.8	\$42,007	\$ 825

## Check before resetting

If you are a heat pump owner, this is a tip to help you protect your investment. In the event of an electric outage in extreme cold weather check your operating manual for procedures to follow. Do not reset or leave the thermostat in the "on" position immediately after electric service is restored. You may need to switch it to your auxiliary heat source.

The electric heat pump does its job by pumping refrigerant gas. If power has been off, this gas will cool to a liquid collecting back in the compressor. If the thermostat is set to the "on" position it will force the unit to pump liquid instead of gas, possibly causing mechanical damage.

If electric service has been off more than two hours wait at least four hours after service is restored before setting the thermostat again. This will allow the crankcase heater in the compressor to heat the liquid to a gas for normal operation. Always be sure to leave your circuit breaker on or fuses in. If you have any questions contact the Member Services Department.

## Farm Bureau's support

The American Farm Bureau Federation adopted a strongly worded policy statement in support of rural electric cooperatives, and cooperative-supported legislation to preserve rural electric financing.

The adoption of the resolution at the group's annual meeting in early January at Orlando, Fla., apparently reverses the position taken by the national office of the nation's largest farm organization. In an August 29 issue of the Farm Bureau News, the legislation to preserve the Revolving Fund of the Rural Electrification Administration was characterized as "a \$7.9 billion bail-out." But state and local Farm Bureau chapters across the country objected to the attack and worked to fashion a new policy resolution.

The new language of the AFBF resolution on rural electric utilities reads, "We believe that a properly designed federal revolving fund can and should be an integral part of the means to provide the rural electric cooperatives adequate credit to maintain and strengthen their systems. Such a revolving fund should include an adequate rate of interest to keep the fund solvent and be used in conjunction with private capital to finance the system. In order to assure an adequate capital base, we support making funds used for REA lending prior to 1973 as a permanent capital investment in the revolving fund. We support the present REA criteria used to determine on an individual basis the interest rate a borrower can afford."

*Editor's note: The Farm Bureau has long been a firm supporter of rural electric cooperatives. Locally, we wish to thank the grass-roots level of the Farm Bureau for their encouraging support.*

## Life-support equipment registry

Last year the state legislature enacted a law which requires all utilities to keep a "registry" of persons who depend on electrically operated respirators, dialysis machines or any other electrically operated life support equipment.



We have had such a list for many years, however the law states we must tell everyone of the existence of this registry. It's the responsibility of the individual to notify us of their dependency on such equipment.

A "good faith" effort will be made to restore power first to those persons on the registry and to notify them of any anticipated power interruptions. We cannot guarantee they will be the first back on following a power failure, but when there is a choice, their location shall have priority. As always, no one can guarantee uninterrupted power so it's up to the individual to provide an emergency standby generator.

Anyone requesting to be on this registry should contact the Cooperative office.



# Illini Electric News

ILLINI ELECTRIC COOPERATIVE 217-352-5241 CHAMPAIGN, ILLINOIS

## MAC's first meeting

By  
Wm. David Champion,  
manager

April 3 marked the first meeting of Illini Electric's Member Advisory Committee (MAC). Eighty-six members inquired about MAC, and nearly 50 were present at the meeting.

After a brief welcome and description of MAC's purpose, members broke into groups by district and selected two members to represent each group on the committee. Members of the MAC are pictured on page 10c.

An energetic question-and-answer session followed, and we thought you'd be interested in the outcome. The main purpose of MAC is to open up a clear channel of communication between the board, management and co-op members. If you have any questions you'd like answered, feel free to call the board member or MAC member in your district, or call the IEC office.

The next MAC meeting was set for April 17, and we will keep you informed on what's happening in future REN center sections.

### What are the goals of Illini Electric?

*The goal or objective of Illini Electric Cooperative is to provide reliable electric service at the lowest possible cost to its members.*

### Why are the rates so high?

*Our retail rates are high for three major reasons. The wholesale rate that we've been paying is high, and our density or number of meters per mile of line is low. Also, we have been hit with some serious ice storms, the cost of which will have a 35-year impact because of loan maturity dates.*

### Is CIPS buying power from Illinois Power Co. and selling it to us, thereby charging us for the nuclear power plant? Is that why we are raising rates?

*No, we have purchased our wholesale power from CIPS in the past and they produce their own electricity.*

### Up until the time that Clinton comes on line, do we have any place else to buy power other than CIPS?

*Yes, Illinois Power Company, Soyland Power Cooperative and Western Illinois Power Cooperative have recently signed agreements enabling the two power cooperatives to purchase partial interest in Illinois Power Company's existing coal-fired plants. These agreements provide for 400 megawatts (mw) initially which is the bulk of our needs. We are also negotiating for another 200 mw from a source other than IP.*

### Who has the 10.7 percent of Illinois Power coal-fired plants, Soyland?

*The ownership is shared by Soyland and WIPCO, and amounts to 10.7 percent or 400 mw of Illinois Power's coal-fired plants.*

I was visiting with one of your board members at a meeting. He was saying if you think your power bills are bad now, wait two to two and one-half years when the Clinton plant comes on, they're going to be more than doubled — 22 to 24 cents a kilowatt (hour) compared to my 11 cents now. If that's true, that's not right.

*The last wholesale power bill cost us an average of just over six cents per kwh, or a retail bill of around 11 cents per kwh. When Clinton comes on line we anticipate our blended wholesale rate to be around nine cents per kwh, which translates to a retail rate which I would hope to be near 14 cents*

*per kwh. Please keep in mind these are not firm figures, the 22-to-24 cents per kwh you spoke of is much too high.*

**Why would you buy from Clinton for nine cents if you can buy power for six cents now?**

*To meet our objective (see the first question) we have to plan for the future. We must be certain we can provide the power that is required by our membership and at the lowest cost in the long run. Also there are some concerns about coal transportation costs and acid rain legislation which may skyrocket the cost of electricity produced by certain power plants. This nine cent blended wholesale rate may look very good to us in the near future.*

**It was curious to me that when these rate discussions came up, you started off with the ice storms and ended up with the coal plants. It looks to me like we've got 100 years worth of ice storms invested in the coal plants. So I think the ice storms as a presentation item ought to be dropped as financially insignificant as compared to the other things you've discussed.**

*Power supply is indeed the largest factor in our rates, but when we compare our retail rates to other co-ops who purchase wholesale power from the same source we do, we are still higher. This is where we need to look at our density situation (number of meters per mile of line) and the fact that we are overinvested in plant because of ice storms.*

**Just maybe . . . utilizing a little bit of your knowledge of how rates are arrived at, relative to Clinton, you said we would be paying a mixed cost for (wholesale) power of about nine cents per kilowatt-hour when Clinton comes on line. What would you expect that cost would be in cents if Clinton would have cost the original cost rather than 10 times what it did?**

*That is a difficult question to answer because Clinton will supply just a portion of the total generation mix (190 mw of 790 mw in the case of Soyland and WIPCO combined). The majority of our power is produced by coal plants, and we have seen some dramatic changes in the pricing of that energy, too. It would stand to reason that if Clinton had been built at its original cost (which would have been one-fifth of what we are expecting now) the nuclear portion of the mix would have been considerably less.*

**Is it not feasible to use energy resources that are cheaper as an input to our system to help hold the cost down, such as wind or solar?**

*No, it is not feasible to use wind or solar as a source of generation input to a distribution system, at least with the current technology. A point was well made this evening, that wind and solar have their own natural distribution systems. Each consumer must make the decision as to whether wind or solar is a cost-effective, viable alternative.*

**Shouldn't the co-op get involved in other forms of services that it could possibly make money on? As a co-op member, I have many diverse needs — one of which is that I have an older home that is too good to tear down, but it needs a lot of work. I am at a loss as to what to do to make it more comfortable to live in?**

*If the membership has specific needs as a whole, we should consider providing for those needs. But, we must be careful not to get too far off of the objective of Illini Electric Cooperative. If the membership feels that the objective requires alteration then we must respond to that change in needs. We must change with the times and address current issues as they arise. The industry is in a crisis period and if we aren't careful we will price ourselves right out of the market.*

**If the co-op pays six cents for its power now, why does it only pay 1.22 cents if we want to generate power and sell it back to you? It seems like you're trying to make it prohibitive for anyone to even try to produce power!**

*It does appear that we are trying to discourage cogeneration, but we are not. When the federal regulations were developed, the guideline for purchasing power from a cogenerator was established as deferred cost. We pay over \$16 per kw of demand and 1.22 cents per kilowatt-hour to our wholesale power supplier. These two factors average out to around six cents per kwh at this time. When a cogenerator wishes to sell the co-op some of his excess power, he can only provide that power at certain times. Therefore, the co-op con-*

*tinues to pay for the peak demand charges at over \$16 per kw. The only thing deferred is kilowatt-hour cost of 1.22 cents, so we will pay the 1.22 cents deferred cost, whether it would be to our wholesale supplier or the cogenerator.*

**In actuality isn't the electricity that we will be getting from Clinton going to cost us 20 cents?**

*No, the wholesale cost for Clinton alone will run about 12 cents per kwh. With the recently negotiated contract for ownership in IP's coal plants, the total mixed cost will be less.*



*First row, from left: Sue Norton, Donna Prah, Deonna Sauer, Alice Hieser, Louise Kilian, Marie Deppa and Janet Cornelius. Second row, from left: Merrill Norton, David Prah, Edwin Sauer, Kenneth Hieser, Raymond Kilian, Richard Deppa and Eldred Cornelius. Third row, from left: Dave Champion, Manager, Larry Dallas, Charles Goodall, James Laroe and Jay Hageman. Gary Luth was not present for the photo.*

**You mentioned you were concerned about the people on fixed incomes and how are they going to pay their bills. We will probably just have to do without if something isn't done about it. Question is: What are the utility companies going to do?**

*One alternative might be to develop a senior citizen rate or other types of rates which might do a better job of meeting the needs of the members. We need to do all we can to stabilize and minimize the rate impact on all members.*

**When wholesale costs go up three cents, will our costs go up the same percentage?**

*No, because wholesale power costs are only about 58 to 60 percent of our total cost. Therefore, a retail increase will be a smaller percentage than the wholesale increase.*

**Do all of the nuclear plants go over budget like Clinton?**

*Yes, in fact, Clinton is less over budget than all other similar plants which were started near the same time.*

**What causes the cost overruns?**

*The overruns are caused by several factors. I feel that if IP had staff expertise on board when the plant was started that they have today, it would have really helped. Also, there was the Three Mile Island incident, and the fact that it happened during Clinton's construction period has hurt. And probably the largest problem is government red tape. The Nuclear Regulatory Commission (NRC) keeps changing the rules in the middle of the game. The plant either meets or exceeds all NRC specifications, but from time to time new, retroactive specifications are released. If a completed portion of the plant is affected, it must be redone to meet the new specs. That is very costly. Also the paperwork that is required for each nut, bolt, weld, etc., is unbelievable.*

**Surely once the Clinton project is completed the operating management expertise will be better than the cost estimators originally, won't it?**

*Yes, the expertise for managing and operating the plant is in place. These*

*people are professionals and they are currently fine-tuning their skills with the control panels, computers and other equipment that will be used in the plant.*

**What do members have to do to get management involved in releasing loan funds to members for conservation and upgrading insulation and home improvements to save energy and lower their bills?**

*As the new manager, I am reviewing our policies and procedures. This is one area we are looking at. The Rural Electrification Administration has had a program for several years that allows co-ops to defer principal repayments on loans. This allows co-ops to, in turn, loan money to its members for upgrading their home insulation, furnaces and other specific improvements which help the members become more energy efficient. The Illini board of directors has looked at this program several times and each time on major concern rises to the top. That concern is, even though this might be a very good program if the co-op loans money to the members for this purpose and and one member either can't or won't repay the loan, then the rest of the membership would end up paying this unpaid loan. The board and I must be absolutely sure that all of our decision are in the best interest of the co-op's membership as a whole.*

**Isn't conservation part of the problem with rates?**

*Yes, the more we conserve to save on our electric bills, the higher the cost per kwh since the co-op must continue to meet its expenses. We continue to pay high demand charges each month even if the kilowatt-hour sales aren't there to support that demand.*

**Is Illinois Power overstocked with power if they are selling excess capacity just two years prior to having the Clinton plant come on line?**

*Yes, nearly all utilities are experiencing the excess capacity problem right now. That is one reason IP was willing to negotiate for the short-term ownership participation contract that we just signed. The Soyland/WIPCO ownership in the IP coal-fired plants decreases over time because IP expects to need the extra capacity by the mid-90's.*

**What do you think the future cost is going to be for stocking the spent fuel some place? Are we going to have excessive costs for getting rid of this and storing it?**

*I'm not sure what this cost will be, but I can't imagine it being excessive. The storage sites and the technology are available, but this remains a political football right now.*

**At the present time Eastern Illinois charges 7.8 cents, which is about 40 percent cheaper than we are and they are buying their power from the same place. Is there a law against us merging with somebody else?**

*No, I'm not aware of any laws against co-ops merging. In fact Eastern's new manager, Corn Belt's new manager and I are meeting monthly to determine the types of things that we can work together on, which might save all three co-ops money. Illini's board is concerned about our situation and they constantly discuss alternatives. The economies of scale may or may not be there in a merger situation. A merger would not be as simple as it may appear to be.*

**It seems to me that one of the problems is that the individual members who pay the bills have very little input in the decisions made and lots of times we get a status quo that just because something has been this way for all these years it will remain that way because it will never come out of the board for the membership to vote on. I think that you're going to find as rates go higher, members are going to demand a say.**

*I agree that members will demand to have a say and they have a right to a say. The board and I have recognized this and we're doing something about it. That is why we are expanding our member communications programs to help our members become better informed. Also we hope MAC will provide a communications link between the members, board and management. We want this committee to be a volunteer cross section of the membership which will help us be more aware of the member needs and thoughts.*



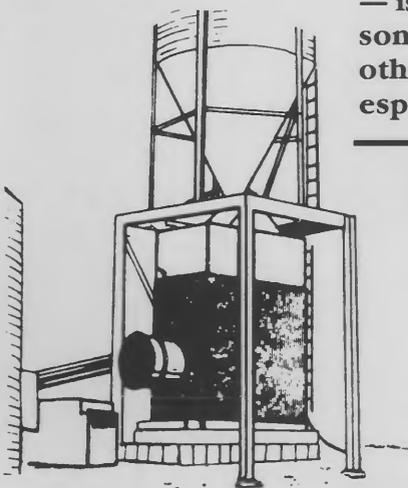
# Illini Electric News

ILLINI ELECTRIC COOPERATIVE 217-352-5241 CHAMPAIGN, ILLINOIS

## Summer weather threats

This is the season when Mother Nature dishes out some of the most severe weather. Being informed about safety procedures is your best protection. Lightning safety is a must during a thunderstorm. Stay in your car if you are traveling. They offer excellent lightning protection. If you are caught outside, do not stand underneath a natural lightning rod, such as a tall isolated tree or telephone pole. Avoid projecting above the surrounding landscape, for example by standing on a hilltop. Lightning usually seeks the highest point. In a forest, seek shelter in a low area under a thick growth of trees. In open areas, go to a low place such as a ravine or valley. Get off or away from open water, tractors and other metal farm equipment, or small metal vehicles such as motorcycles, bicycles, golf carts. Stay away from wire fences, clotheslines, metal pipes, rails. Put down golf clubs. If you are in a group, spread out, keeping several yards apart. If you are caught out in a level field or prairie far from shelter, and if you feel your hair stand on end, lightning may be about to strike you. Drop to your knees and bend forward putting your hands on your knees. Do not lie flat on the ground.

Persons struck by lightning receive a severe electrical shock and may be burned, but they carry no electrical charge and can be handled safely. Even someone "killed" by lightning can be revived by prompt action. When a group has been struck, the apparently dead should be treated first. If the victim is not breathing and has no pulse, cardiopulmonary resuscitation — a combination of mouth-to-mouth resuscitation and external cardiac compression — is necessary. This treatment should be administered only by persons with proper training. Victims who appear only stunned or otherwise unhurt may also need attention. Check for burns, especially at fingers and toes, and next to buckles and jewelry.



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for your new grain dryer

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# Earth coupled water source heat pump

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## Ground water vs. closed loop

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When the subject of water source heat pumps comes up, it is necessary to distinguish between the ground water (open loop) and closed loop systems. Both are earth coupled, meaning they are in contact with the earth and thus capture the natural heat of the earth to heat your house. The difference is the loop itself and how this loop contacts the earth.

The open loop, or ground water system, uses water from your normal well. The loop in this case is the water from underground. The term "open" loop means the water is not the same water used over and over. In the open loop system, once heat from the water is removed, the water is discharged and not intended to be reused. Discharging generally means either dumping it to a basement drain or field tile or, if there is a chance of running out of water, it should be returned to a "return well" at least 100 feet from the supply well.

Most of the open loop systems installed to date are returning the water to the aquifer. This discharged water is not harmed in any way. Only 10 degrees of heat has been removed.

Closed loop refers to a loop in a closed circuit, meaning the fluid is reused or recirculated again and again. The closed loop heat pump works much the same way as the open loop heat pump, taking out about 10 degrees of heat from the water with each pass. The difference in operation is the source of water. Although both systems can be described as "earth-coupled," the closed loop system relies entirely on the length of the loop that is in contact with the earth to pick up the required heat. The loop or pipe and its length must be carefully sized to each particular house. A loop that is undersized will not provide the needed heat and a loop oversized will add to the cost of installation.

Even when the closed loop is sized properly, economics dictate that the loop length will not be long enough to keep the water temperature from dropping to the freezing point during the coldest weather, thus an anti-freeze solution must be included.

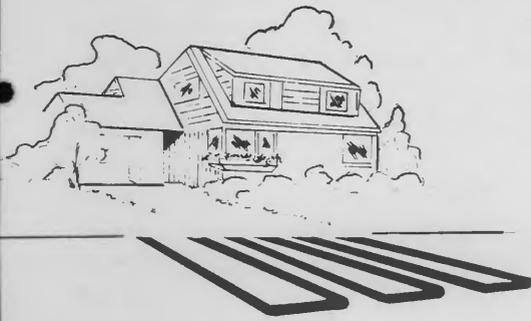
Not all water source  
heat pumps will work  
on closed loops

Most water source heat pumps are designed to operate with water from a well that is generally at a constant temperature of around 54 degrees. To protect the equipment in case of a water supply problem, these heat pumps will automatically shut down when the incoming water temperature is less than 40 degrees. There is a chance the heat exchanger could freeze up if incoming temperatures are much lower. Thus, installing an ordinary water source heat pump on a closed loop will not work.

In addition to the length of the pipe, the depth and the material the pipe is made of is important. Only two kinds of pipe are recommended. Polybutelene or polyethelene are recommended. Both are extremely tough and have an expected life of 50 years. In addition to their strength, the relative ease of heat transfer from the earth to the fluid is important. A pipe that acts as an insulator would cause the loop to need more length in order to pick up an equal amount of heat.

Horizontal vs.  
vertical loop

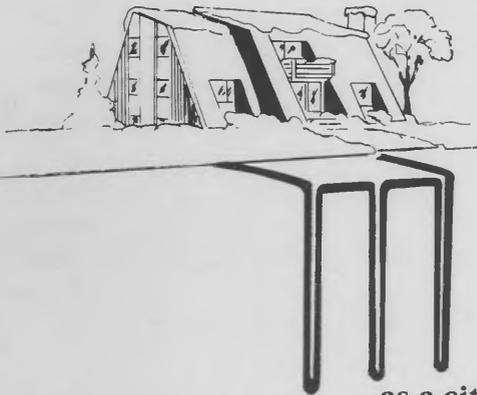
The closed loop can be installed in a horizontal or a vertical position. In a horizontal system, the pipe should be buried as far down



as possible in order to be in contact with warmer soil. Generally it is best to be between four and six feet deep or more if economically possible. This is deeper than most trenchers will go, so a backhoe may be needed. One field tile installer has been in touch with us and would be interested in installing some horizontal systems. In that case a depth of nine feet could easily be reached. Generally once you get down eight feet, there is not much seasonal change in soil temperatures. As a rule of thumb, around 450 feet of pipe will be needed for each ton of cooling, thus a lot of open ground would be needed. Anyone having open farm ground next to their house might find the horizontal system the cheapest to install.

#### Vertical loop

Although it varies from area to area, most closed loops in this area have been vertical loops. With a vertical loop, generally a five-inch hole is bored to around 150 feet deep. A loop of pipe is dropped into this hole. The number of bore holes is determined by the length of pipe needed. That in turn is determined by the size of the house and the heat pump. A rule of thumb calls for 175 feet of bore hole per ton of cooling needed. To keep the ground temperature from one bore hole from affecting another one, the holes are generally at least 10 feet apart.



Although not a well, these holes are generally drilled with well drilling equipment. Sometimes described as deep post holes, there are at least three advantages to a vertical system: less yard has to be torn up during installation; good where a limited area is available such as a city size lot or limited yard space; and most important is the reduced footage of pipe needed because the surface air temperature does not influence the earth temperature in the slightest.

This is probably more than you ever wanted to know about either closed or open loop. The important thing to remember is that both systems work equally well. Without a doubt, the installation of either one will lower the cost of heating your home.

#### Cooling as well as heating

Although the water source heat pump has been widely used in the far southern climates for many years, the water source heat pump is a much greater energy saver during the heating cycle than the cooling cycle. Most water source heat pumps have an EER rating of between 12 and 14. This is good but not all that much better than some super-efficient air source air conditioners.

The greatest efficiency is in the heating cycle. The efficiency during the winter is nearly double the efficiency of the air source heat pump. The reason is that the earth's temperature is much warmer than the air, with the greatest difference occurring in the northern climates.

For more information on the installation and operating cost of the water source heat pump, contact the Member Service Department at Illini Electric. Just call or write and we will be glad to send a packet of information.

# MAC committee gets underway

On April 17, the first regular meeting of the Member Advisory Committee was held at the headquarters of Illini Electric. At the original organizational meeting held a couple weeks earlier, a couple districts were short of volunteers to serve from those districts. For various reasons, conflicts kept some people away from the first meeting. These districts were then filled the same way the other districts were filled, by the volunteers from those districts. As mentioned in the original announcements, the committee is made up of volunteers from all eight board districts.

We are confident that a committee made up of people interested enough to contribute the necessary time to serve will give the proper representation to their district. This committee will be a working committee. As evidence of that, the next meeting to be held in June will have as the top item on the agenda a review of the past annual meeting, giving us ideas on what the grass roots members want to hear, what makes the member attend, and why many members are unable or wish not to attend. Our goal for this particular committee meeting is to help us improve the annual meeting in such a way that many, many more members will attend.

At the first regular meeting, the committee was asked to give their views of whether our communication efforts were reaching the average member and what information they wish to hear more about. Following a discussion on many various subjects, each department head briefly described their job as the group toured the building.

Listed below are the committee representatives and their board member's district:

Board member's district	Committee representative name and address
Herb Aden, Newman	Gary and Vicki Luth, Allerton
Jim Beatty, Philo	Dave and Donna Prah, Newman
Bob Clark, Atwood	Ray and Louise Kilian, Broadlands
Charles Cole, Rantoul	Merrill and Sue Norton, Ogden
Wilbur Gady, Sadorus	Charles Day Jr., Bement
Clarence Maddox, Allerton	Gene Weir, Bement
Jay Stiehl, Tuscola	Eldred and Janet Cornelius, Penfield
Dean Ward, Champaign	Richard and Marie Deppa, Rantoul
	Tim and Debbie Wood, Tolono
	Jim and Jeanine Laroe, Ivesdale
	Jay and Teresa Hageman, Fairmount
	Charles and Nancy Goodall, Sidell
	Lyle and Patty Heit, Tuscola
	Larry Dallas, Tuscola
	Ed and Deonna Sauer, Gibson City
	Ken and Alice Hieser, Fooseland

At the April meeting, the committee elected Eldred Cornelius as chairman and Gary Luth as secretary. If you have any suggestions or questions, you are encouraged to contact one of the above committee members, your board member or our office.



# Illini Electric News

ILLINI ELECTRIC COOPERATIVE 217-352-5241 CHAMPAIGN, ILLINOIS

## Baseboard heaters

In the past few months we have had articles on add-on heat pumps and the water source heat pump. Each of these systems has its own advantages. While the concentration of advantages of the add-on and water source heat pump is on the reduced operating cost, the advantages of baseboard heating are comfort and lowest maintenance costs.

Baseboard heat is the oldest form of electric heat to be used. As new innovations in electric heating have become commonplace, many of the advantages of baseboard have been forgotten. These advantages are just as good today as they were 20 years ago.

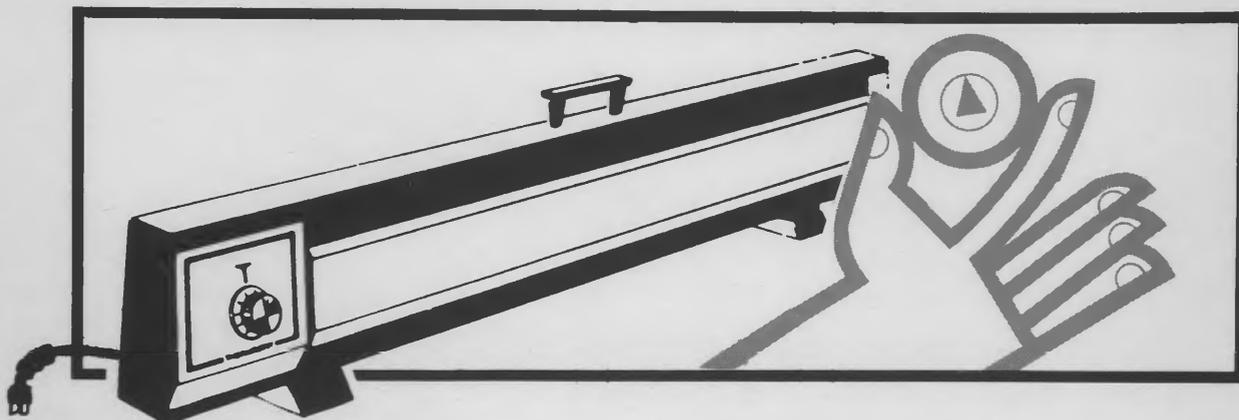
### Individual room control

Individual room control means that each room has one or more baseboard heaters and a thermostat in each room. Each thermostat controls the heaters in that room. Individual room control has two advantages. First, each room can be set at different temperatures. Those of you who have rooms that are hard to heat when the wind blows from a certain direction will know how this can be a benefit. Second is the economy individual room control can have by not overheating some rooms and being able to lower or turn off certain rooms that are not being used. Also in the spring and fall it is easy to only heat the rooms you are in.

How much does individual room control save? On an average, 20 percent. This 20 percent savings is why we have always recommended baseboard heating over the electric furnace. While both systems are resistance heat, the biggest savings comes from the absence of duct loss while a smaller amount comes from reduced temperature in unoccupied rooms.

### Lower maintenance costs

The strongest argument for baseboard heat is the lower maintenance costs. Without a doubt, baseboards have the longest life expectancy of any heating system made. The primary reason is its simple design with no moving parts. If you take a close look at one, you



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can see that there is simply a heating element inside of a metal enclosure. Several years ago, most all manufacturers warranted the baseboard for the life of the building. That should show you how much confidence they had in their lower maintenance. With the changes in the warranty laws most, if not all the manufacturers were forced to stop making such an open ended warranty. The fact still remains that little or no maintenance will ever be needed on any of the heaters. We know for certain that there are local homes that have been heated with the same baseboard heaters for over 25 years. By this time, most gas or oil furnaces would need to be replaced. Therefore lower maintenance also means longer life. It would not be unusual to expect the baseboard heaters to outlast two furnaces.

**Lowest cost of installation**

Unlike furnaces, the baseboard system is installed by an electrician. Instead of expensive ductwork, all that is needed is some small electrical wire. Besides the heaters and thermostats being inexpensive, the installation cost is much smaller than other heating systems.

**Comfort without air movement**

One important benefit of baseboard heat is the limited air movement. The comfort level is often compared to hot water baseboard heat, since there is no fan to create a draft or noise. The natural flow of heat rising from the heating element is all that is needed to distribute heat within the room. Just like hot water heat, the heaters should be placed along the outside walls and preferably under the windows. The rising heat warms the cold walls and windows.

**Lowest life-cycle cost**

Life-cycle cost is a term applied to the overall cost of a heating system including the installation, operation, maintenance, and replacement. When all the factors are included, baseboard heating has one of the lowest life-cycle cost of any heating system outside of natural gas. Not much attention has been given to baseboard heating because it seems most people are only interested in the bottom line of the utility bill and do not take into account other considerations.

**Excellent for supplemental heating**

Baseboard heaters are an excellent choice to add heat to a hard-to-heat room, or to heat an individual room entirely. Room additions or seldom-used rooms would be an excellent location for baseboard heaters. For example, upstairs bedrooms, or other rooms that only need to be heated occasionally, could have heat added cheaper with a baseboard heater than having ductwork installed. The operating costs could also be lower since it is easy to turn the thermostat off and save on heating cost when not needed. Another good example would be where a room or two is added. As we stated earlier, baseboard heaters can be added much cheaper than extending the ductwork. For supplemental heating, baseboard heating is a good choice.

**In summary**

As you can see there are many advantages to installing baseboard electric heating. However, we don't want you to think that this is the best electric heating system. Truth is, this is just one of several systems that are recommended. Each system has advantages over the others. This is merely an attempt to describe this system, with the hope each of you can make an educated decision the next time the need arises for you to install a new heating system.

Since it is impossible to answer all your questions here, you are encouraged to contact the Member Service Department at Illini Electric if we can be of any help.



# CONDITION 90

## is here!

**CONDITION 90 . . .** A critical period of hot days when you should limit the use of your heavy electric appliances to the coolest parts of the day, before 10 a.m. and after 10 p.m. **CONDITION 90** occurs during those summer days when the temperature soars to 90 degrees or more. The period between 10 a.m. and 10 p.m. is when all the air conditioners are running the most and our consumers demand the greatest amount of electricity. Your electric cooperative asks that on **CONDITION 90** days you help lower our expensive peak demand costs by using your major appliances during the cooler hours, early morning and late evening.

**YOU CAN HELP LOWER COSTS . . .** During periods of peak electricity demand — the warmest part of **CONDITION 90** days — our power supplier must operate expensive “peaking” generators. These are less efficient coal-fired generating units and more expensive oil-fired units held in reserve to meet such peak demands. By timing the use of your heavy appliances to before 10 a.m. and after 10 p.m. on **CONDITION 90** days when the temperature is predicted to rise to 90 degrees and above, you will help lower your electric cooperative’s cost of power.

**LOWER POWER COSTS WILL LOWER YOUR BILL . . .** Any reduction in wholesale power costs will show up on your bill as a lower “wholesale power cost adjustment” than it would otherwise have been. Power costs are made up of two charges; an energy or kilowatt hour charge and a demand charge. As it sounds, the energy charge

is a fixed cost per KWH. The demand charge is based on the maximum demand set at the substation anytime during the month. The demand charge of our wholesale bill amounts to approximately two-thirds of the total, thus any reduction in demand and its cost can mean a sizeable decrease in power costs. In other words, changing the time of day your appliances are operated will directly affect the cost of your electricity. This is one of the few things you can do to control your electric costs.

**LIMIT USE OF HEAT-PRODUCING APPLIANCES . . .** Many of the larger appliances within the home produce a large quantity of heat, such as the dishwasher, washer, dryer and water heater. In addition to the electricity it takes to operate these appliances, the heat produced causes the air conditioner to operate longer. By avoiding the hottest time of the day to operate the major appliances, your peak demand is reduced during the critical peak demand time of the cooperative.

**HERE’S HOW YOU CAN HELP . . .** Be alert for **CONDITION 90** days this summer! Any day the temperature is predicted to rise to 90 degrees or above, limit the use of heavy, heat-producing appliances during the hottest hours of the day, between 10 a.m. and 10 p.m. Do your cooking, clothes washing, clothes drying and dishwashing in the early morning and late evening hours.

**LET’S COOPERATE ON CONDITION 90  
DAYS TO LOWER PEAK DEMAND,  
TO LOWER ELECTRICITY COSTS.**

## Faulty wiring unsafe, costly

Inadequate, improper and unsafe wiring can cause high electricity use and correspondingly high bills. It can also damage appliances and equipment, burn out a transformer, create outages and generally cause unsatisfactory service — not to mention form a potentially hazardous condition which may be responsible for loss of property, injury or, worst of all, loss of life.

Many potentially hazardous conditions involve improper protection of wiring near the meter. This is especially true where the meter is on a pole or post and wiring is installed down the pole or post into the ground. All conductors approved for this purpose must be enclosed in rigid conduit with proper fittings on both the upper and lower ends. Cable approved for underground usage must be protected from 18 inches underground up to the fuse or circuit breaker box at the meter.

Some of these situations may have existed for a long time, but, as they come to our attention, we are writing members to request that they call a competent electrician to check the wiring and make proper improvements. So far, response by those members contacted to improve their electrical wiring has been most gratifying.

If you have any questions about the safety of your wiring, you should contact the Member Services Department at your Cooperative.

## HOW WONDERFUL IT IS...

- TO push a switch and the lights go on.
- TO pull a switch and watch a choice of programs in beautiful color, in the comfort of your own home.
- TO set your thermostat and have a warm house in winter and a cool house in summer.
- TO set your alarm and awaken to beautiful music.
- TO lift that slice of golden toast from your automatic toaster.
- TO set the dial and prepare to perfection, that roast, turkey or whatever you roast or bake in your oven.
- TO come home on a dark night and find your yard well lit by that automatic security light.
- TO pull the switch on that portable saw and rip a ten-foot board in seconds.
- TO place your laundry in the dryer and take it out fluffy dry in less than an hour, especially on cold or rainy days, or when you are anxious to save time for other things.
- TO plug in the lights on your Christmas tree and see the smiles on your children's faces.
- TO plug in your electric shaver for a quick shave or quickly dry your hair with a portable hair dryer.
- TO play your favorite records on that new stereo.
- TO enjoy the fresh frozen fruits or vegetables from your own garden, throughout the winter.
- TO enjoy a cold glass of milk from the refrigerator or reach in for some ice cubes for an ice-cold drink.
- TO brew a pot of delicious filtered coffee in that new automatic coffee maker.
- TO step into that hot shower at the end of a working day.
- We could go on and on reminding you of everything made possible by electricity.

**ELECTRICITY IS STILL A BARGAIN...  
WHAT WOULD WE DO WITHOUT IT?**



# Illini Electric News

ILLINI ELECTRIC COOPERATIVE 217-352-5241 CHAMPAIGN, ILLINOIS

## Why the busy signal?

Occasionally, IEC members express concern about receiving a "busy" signal when calling the office to report an outage. This can be a very frustrating experience and some may imagine that the phone is off the hook or the line has somehow been placed in the "busy" signal mode. After trying to reach the office for some time, a person may get downright angry. "I'm in need of help. I'm calling to report an outage and no one is helping me," he may think. Why?

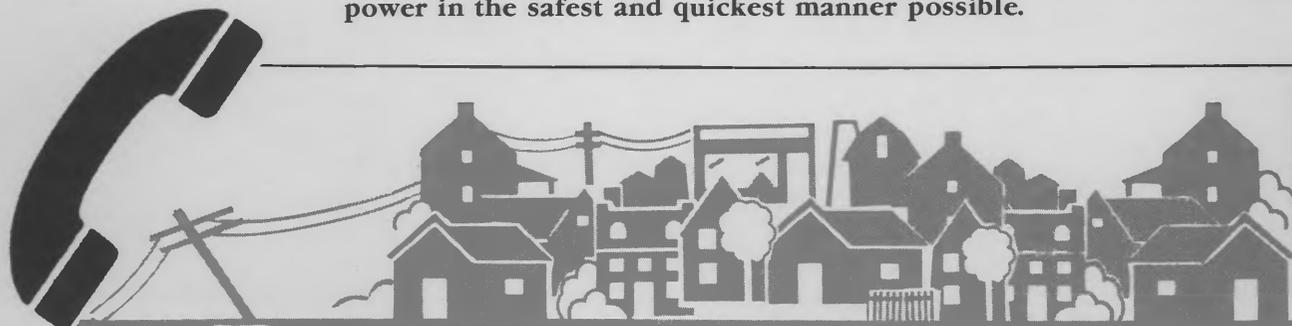
Calls during non-office hours are automatically directed to the the answering service, which can handle only one line. When an extensive outage occurs, employees arrive at the office and can then take calls on four incoming lines. If a line serving 30 members or more is out, the phone lines may all be busy, as everyone at home attempts to contact the cooperative office. The problem is compounded if a major line or substation that serves anywhere from 100 to 1,000 people should experience problems.

## There are many reasons for outages

Power outages are caused by many things — storms, cars hitting poles, or animals getting into the equipment, just to name a few. These types of events are beyond the control of your cooperative and, when they happen, all we can do is repair the damage as quickly as possible and restore service to the affected area. Your cooperative is constantly monitoring ways to improve service without increasing costs.

If you get a busy signal when calling to report an outage, please don't give up — keep trying. Your cooperative employees want to hear from you and you may have valuable information which will help them to restore service. Just knowing that your location is out of service can be an important aid in pinpointing where the trouble is originating. Don't assume a neighbor has already reported the problem unless you have checked it with them. If nobody notifies the office, your employees will be unaware of the trouble. This could mean unnecessary delays in restoring service.

Your cooperative employees don't like to see you inconvenienced in any way and when there is an outage we do everything we can to restore your power in the safest and quickest manner possible.



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# MANAGER'S COMMENTS by Wm. David Champion, Jr.



During my first few months as the Cooperative's manager I have placed emphasis on the areas of cost reduction and communication.

Cost reduction is particularly difficult to accomplish in that the majority of the expenses are for the purchase of wholesale power, payment of taxes, debt retirement and depreciation. After these are removed it leaves very few controllable dollars from which to reduce costs. Nevertheless, we are reviewing the policies and procedures to ensure that we have the most efficient operation possible.

## Membership communication

Effective communication is a high priority because we are a cooperative and it is important in this relationship that the right hand know what the left hand is doing and vice versa. By this I mean that the membership must be informed as to what the board of directors and management are doing, and why. It is also important for the board and management to know what you are thinking.

For this reason, the volunteer Member Advisory Committee was established and the "MAC" has met several times resulting in many very good suggestions for making life easier for the membership.

## Expanded information

Further communication expansion has been accomplished through increasing this section of the IREN to four pages and through messages enclosed in the electric bills.

Now I am adding a new dimension. I've set a personal goal of calling members on the telephone periodically to obtain their viewpoints on various subjects that effect Illini Electric.

If at any time you have comments or questions that arise as the result of these publications or from any other source, please be sure and write, call or come in to the office because we are encouraging an information flow in both directions.

## Our responsibility

I look forward to visiting with you in the "Manager's Comments" column and you can be sure that those of us who have been entrusted with the responsibility of keeping Illini Electric Cooperative on the right track will do everything we can to get that job done.

## Tips on aluminum conduit

The use of aluminum conduit has increased steadily in the last few years. There are many reasons for the use of aluminum conduit. It weighs approximately one third that of steel conduit. It cuts, threads and bends more easily and is competitively priced. There are, however, some limitations to using aluminum conduit:

- It should not be used as a service mast for attachment of service wires due to its strength limitations.
- It should not be used in constant contact with moisture unless sealed and covered with a protective coating of asphalt base paint.
- It should not be buried in, or enter, soil which contains cinders or whose pH is alkaline.
- Bare copper conductors should not be installed in aluminum conduit.

The above is not intended to discourage the use of aluminum conduit for meter loops, above ground meter services or for general conduit wiring. It is only a caution as to some of its limitations.

## Ups and downs of bills

When electricity was used primarily for lighting, electric bills were low in the sunny months of summer and higher in the darker months of winter. Today, in addition to the lighting, every household has many year-round uses for electricity which add to the comfort, convenience and pleasure of the family. Residential electric bills follow surprisingly uniform patterns from year to year. The fact that a bill is higher than usual naturally arouses curiosity — there must be a reason. Our members have found there are many reasons for variations in use and cost of electric service.

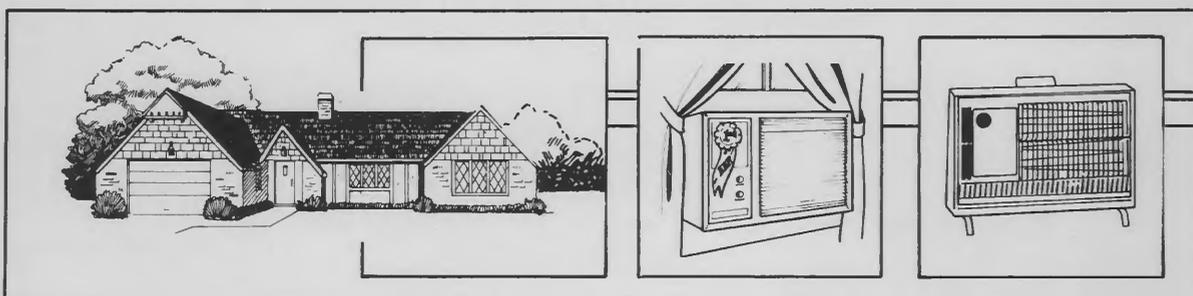
Hot weather brings air conditioning and greater use of fans, refrigerators, freezers, dehumidifiers, and laundry facilities. Warm weather also makes appliances such as refrigerators and freezers work harder. Cold weather affects heating requirements, use of furnace fans, humidifiers, supplementary heaters, and auto engine heaters. Holidays mean extra cooking, lighting, and Christmas decorations in your home.

Many changes in family life affect your electric bill: moving into a new home, alterations to the old home, more time spent at home, a new baby, relatives coming to stay, more laundry, more hobbies, more homework, and teenage entertaining.

This is a common cause of increased usage because everyone adds new appliances from time to time. Have you recently added a dryer, an air conditioner, a supplementary heater, a freezer? Or was it a color television or a frost-free refrigerator. Have you gradually improved your lighting, either indoors or outdoors?

- The age and condition of appliances affect their cost of operation.
- Even relatively new appliances may need adjustments.
- Leaving lights or appliances on unnecessarily raises the bill.

If you still have a question about the amount of electricity you are using, ask for our publication "Your Family Is Unique!". Many helpful hints are included plus a checklist for you to add up the average number of kilowatt-hours you should be using, based on the appliances you have. It's free for the asking from the Member Service Department.



## Co-op must have access

In the process of beautifying their homes and lawns, some members may forget that your cooperative must have access to equipment located on the member's premises. This equipment includes meters, underground cable and transformers (both overhead and pad-mount). Situations such as these are encountered:

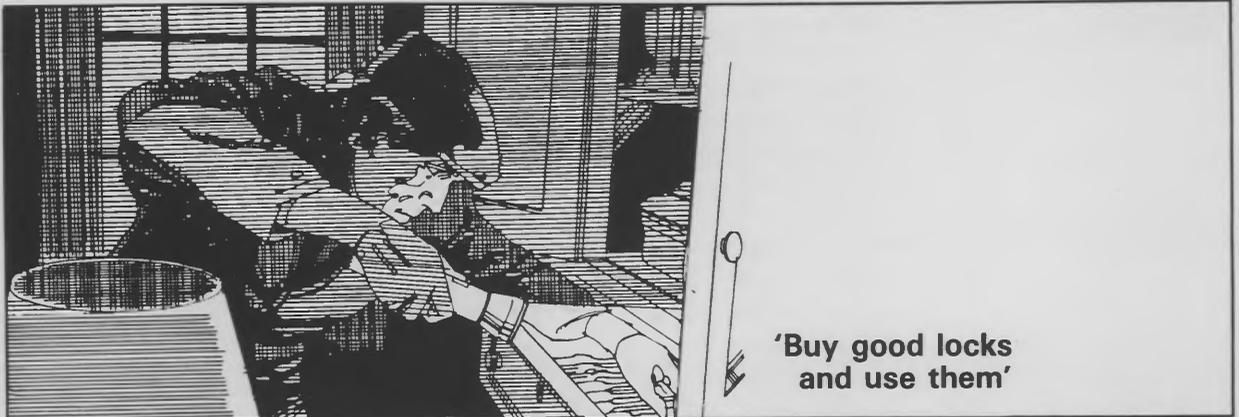
- the resident has erected a fence with a locked gate, or no gate, and the meter is inside the fence,
- the home owner has added a garage and has enclosed the meter in the garage.
- a bush planted in front of the meter has grown so large that the meter can no longer be read easily.
- a patio or carport has been laid over the underground cable.
- a pad-mount transformer has been enclosed with flowers and a decorative fence.
- the area around an electric pole has been landscaped so that there is

no way to climb the pole without damaging the plants.

In those situations where we cannot reach the meter, rules for continued service permit the cooperative to require the member to take whatever action necessary for the cooperative to have access to the meter. In other cases, such as where a patio has been laid over the underground cable, a problem with the cable could require breaking up the patio to make the necessary repairs. Likewise, expensive shrubbery may have to be removed to service or repair a pad-mount transformer that has been landscaped.

### Access to meter is required

Before you begin any landscaping near the cooperative's equipment, remember that the equipment must be accessible now and in the future. That small evergreen may someday become a big tree and shouldn't be planted near your electric meter. If your planning to add a permanent structure that might involve your underground service, please call the cooperative office before you start construction. Someone will come out and advise you as to what can be done to avoid problems later. And if you must add a fence with a locked gate, the cooperative's meter and other equipment must be moved to keep it accessible at all times.



## Prevent rural crime

I recently read an article concerning an interview with a professional burglar who explained why he victimized farms exclusively. He stated that farms were easy targets due to the apparent lack of concern by farmers to make his "job" tougher.

His method of operation was to take anything of value, including money, jewelry, farm machinery, power tools, tractors, trucks, livestock, among other things, and he always filled his gas tank before he left. He picked his victims in the winter by checking driveways that had not been plowed after a fresh snow. In the summer he looked for lawns that had not been mowed. Most times he would check houses during the day and return at night to steal items. On a good day he would make about \$2,000, or more if he stole machinery. When asked how much money he made the last year that he stole, he replied "about \$80,000."

When asked what advice he would give a farmer, he echoed the words of all crime prevention officers. His reply was, "Buy good locks and use them on everything: the house, barn, gas pumps, sheds and buildings. Lock up your cars, trucks, tractors and equipment. Get a good watch dog. Use outside lights for the house, barn and outbuildings. Leave a radio playing in your house and barn when you are going away for a while. Make sure your grass is cut when you go on vacation and stop all mail and other deliveries.

"Leave lights on inside your house. Don't leave farm equipment and livestock out overnight. If you keep a lot of valuables in your home install an alarm system."

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*(Editor's note: This article is reprinted from the January 1984 issue of the Illinois Union Farmer. It is written by Sgt. Harry Stoutamyer, Crime Prevention Bureau, Springfield Police Department.)*

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# Illini Electric News

ILLINI ELECTRIC COOPERATIVE 217-352-5241 CHAMPAIGN, ILLINOIS

## Co-ops draw support

**'WOULD BE GRIEVOUS MISTAKE...TO FOLLOW REAGAN LINE FOR KNOCKING OUT REA...'**  
by Lauren Soth  
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*Lauren Soth, one of the nation's most respected editors and editorial writers, has long been recognized in American journalism as one of its foremost commentators and authorities on agriculture and rural policies. As editor of the editorial pages of the Des Moines Register, Soth in 1955 won the Pulitzer Prize for his editorials calling for exchange of U.S. and Russian farm delegations. Soth continues to comment on U.S. farm and food policies through his articles distributed by the Register and Tribune Syndicate.*

The Reagan administration wants to wipe out the federal subsidy for rural electric and telephone cooperatives. It has submitted in Congress a proposal to increase the interest rate on Rural Electrification Administration Revolving Fund loans from the current 5 percent to whatever it costs the Treasury to borrow money, at present about 12.5 percent.

In addition, the administration proposes to add fees to cover REA administrative costs and probable losses under the agency's insured loan program. It would limit loans from the Revolving Fund to \$575 million a year, with \$500 million of that for the electric co-ops. In the past several years Congress has authorized REA to make loans of from \$850 million to \$1.1 billion for electric co-op financing.

The proposed legislation would prohibit Revolving Fund loans to co-ops with an average consumer density of 10 or more per mile of line. (Average density for rural electric is 4.7 per mile.) An exception could be made if the REA administrator found that the borrower was experiencing extreme financial hardship. The administrator also could set a special interest rate of half the new standard rate or 5 percent, whichever was greater, in cases of extreme hardship or when the co-op otherwise would have to charge much more for electricity than nearby utilities.

Rural electric co-ops don't get all their financing from the low-cost REA insured loans. According to Bob Bergland, the new executive secretary of the National Rural Electric Cooperative Association, 30 percent of the loan money is raised on the open market at about 11.25 percent. The administration wants to require some co-ops to obtain a greater share from private funds.

### HOUSE APPROVES 2-1

The electric co-op association has been fighting Agriculture Secretary John Block and REA Administrator Harold Hunter on this set of proposals and has been winning. The House approved 2-to-1 a bill that would raise Revolving Fund interest rates moderately and would allow the REA to retain the Revolving Fund's assets instead of transferring them to the Treasury beginning in 1993 as required in present law.

The Revolving Fund is showing signs of stress, because it has had to raise money at soaring market interest rates in recent years while making loans at the prescribed legal rate of 5 percent. The co-op association says retention of assets would not be to shuck the obligation to repay the Treasury but to delay it. No loans would be forgiven. The Congressional Budget

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Office pointed out that retaining the \$7.9 billion the Revolving Fund owes the Treasury would not be a new outlay in the budget but only a transfer within the budget.

Hunter and other administration spokesmen have been claiming that the co-ops were asking forgiveness of the Treasury loans and that this would cost the taxpayers billions.

William Niskanen, a member of the President's Council of Economic Advisers, said he had no reservations about the rural electric systems thriving in the late 1990's if they relied on private credit. He said REA was no longer needed because average farm family income was now about as high as the national average. "Maybe now is the time to declare victory and question whether increased subsidies serve an important public purpose," he told a Senate agriculture subcommittee.

#### REA AND PARITY

One of the reasons why farm families on average have approached income parity with the rest of society is the rural electrification program. REA and the 1,000 rural electric co-ops have greatly aided the technological revolution in farming and the improvement of living and working conditions on the farm. Removing the low-cost financing system for the co-ops might not ruin rural America, but it would be a severe setback.

Members of rural electric co-ops already pay an average of 12 percent more for electricity than people not on rural lines. Density of population in rural areas has been thinned out by the transformation of the farming industry; investment per electric co-op member is high.

It is true that REA has had to adapt to change and does serve consumers other than farm people in rural areas. Maybe the preference in interest rates (federal subsidy) should be reduced for co-ops serving more densely populated areas.

But the rural electric systems are the backbone of rural development. Two-thirds of people living on farms earn more income off the farm than on it. They need non-farm jobs. It would be a grievous mistake in national economic policy to follow the Reagan line for knocking out REA and putting the electric co-ops entirely on their own. As in other instances, the Reaganites are letting free-market dogma get in the way of practical economic policy.

## Use care around power lines

Electricity has played a major role in the astounding progress of American farming, helping make Illinois and the nation the leading exporters of agricultural commodities. But electric power lines present serious potential hazards to farmers who don't exercise care when working with tractors, combines, balers, augers and other large equipment.

Watch out for overhead power lines when you are driving or towing farm equipment. If you have young farm hands who are responsible enough to operate farm equipment, impress upon them the importance of carefully surveying a work area or travel route to ensure that power lines are well out of the reach of any equipment.

Keep in mind other basic safety measures as well during harvesting operations: Check out your equipment before you use it. Make sure your helpers are familiar with the equipment they use. Shut off power before unclogging or fixing a machine. Wear appropriate protective equipment.



One careless moment can cause a tragic accident. Don't let tragedy strike your farm. Make this a safe harvest — for you and your neighbors.

# MANAGER'S COMMENTS by Wm. David Champion, Jr.



A program is now under way to inspect and calibrate all meters on our system. Following the meter test, a new type and color of seal is being placed on the meter base. Once this has been completed, the Cooperative will charge \$50 for any meter base found with a missing or altered seal.

Great emphasis is being placed on the meter base seal for two reasons. It protects you, your family and others from the potential safety hazard of shock and burns. An intact seal also ensures you and the Cooperative that all billings for electricity are as accurate as possible. You will pay for what you use, no more and no less.

## Do not remove seal without permission

A meter base seal should not be broken by anyone other than a Cooperative employee. However, at times it may be necessary for an electrician to remove the meter for maintenance purposes. You must specifically request permission from Illini Electric before the seal is broken. At that time arrangements will be made to have the meter resealed. Unauthorized breaking of the meter base seal will cause an extra \$50 charge.

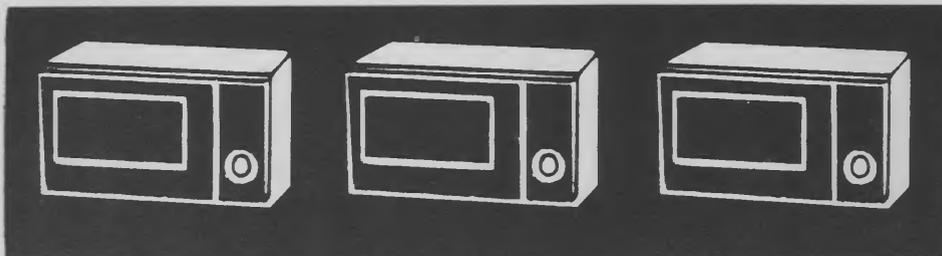
As the value of electricity has risen, the incidence of meter tampering and power diversion has also increased. Meter tampering is a serious offense because the few who attempt such a thing could potentially cause the membership to pay more than their fair share if the Cooperative does not take a strong position. Losses from meter tampering eventually cost everyone more, so it's in everyone's best interest to understand and help control such losses. Violators will not only have to pay for all estimated kilowatt-hours lost and direct costs including a meter test, labor and mileage, but also a \$100 meter tampering charge. These charges are, of course, in addition to the remedies available to the Cooperative through the judicial system.

## Red sticker

At the time the meter is being tested, a red sticker is being attached to the glass of every meter. It cautions everyone not to remove or alter the meter base seal. If you have any questions, please call the Member Service Department.

## Check your microwave wattage

As microwave ovens get older, they may lose some of their power. You can check your wattage, says Laverne Owens of the Missouri Cooperative Extension Service. To check the wattage, fill a four-cup measure with water and record the water temperature. Heat the water for two minutes in your oven, using the highest setting. Then record the water temperature again. Subtract the first temperature from the second and multiply by 18.5. That is the actual wattage, which you can compare with the manufacturer's claims. If the output wattage is lower, you'll need to extend cooking time for your recipes.



## Efficient electric motors

At a recent meeting I attended, I came across some rather important information on motor designs I want to pass along. The speaker was describing the Century brand of electric motor, but indicated almost all brands have or soon will introduce similar equipment. The energy efficient motors were of course the topic of the speech and ranged all the way from fractional-horsepower motors for ventilation fans to crop dryer fans up to 13 horsepower. The gain in efficiency was in the neighborhood of 10 percent. However, the efficiency was not what attracted my attention.

Perhaps the most interesting change was the introduction of what is called the permanent split capacitor (PSC) motor. Although there are other design changes, the most revolutionary change is the elimination of the starting winding and its switch mechanism. From the farmer's standpoint, elimination of the switch mechanism and associated moving parts will eliminate at least 50 percent of the field problems associated with single phase motors.

### Inrush current is decreased

Although the speaker did not dwell upon this point, the new design eliminates the large inrush of current normally associated with starting large motors. Without a starting winding, the running current is apparently the maximum current consumed. Most utilities across the land have adopted a standard of allowing a maximum of 260 amps during the starting of any motor. Typically, a 10-horsepower fan has a running current of 50-52 amps, and a starting current of around five times that amount. Thus for all practical purposes, 10-horsepower has been the upper limit on horsepower on single phase. This new design could change that.

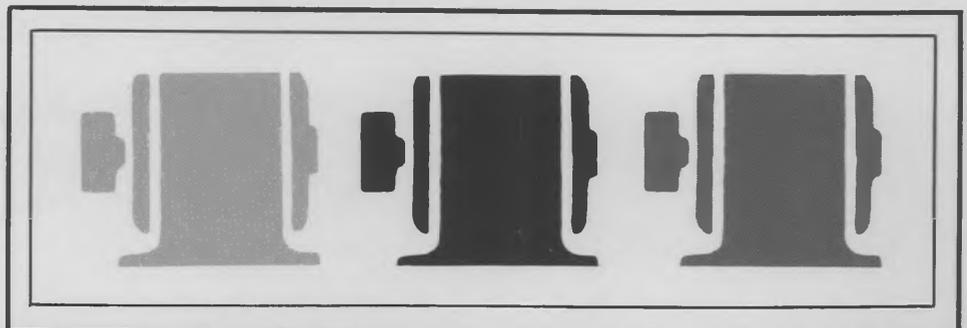
As outlined during his speech, the general advantages of PSC vs. capacitor-start motors are as follows:

1. Lower starting and running currents
2. Higher power factors
3. Usually higher efficiencies
4. Lower operating temperatures and resulting increased thermal capacities
5. Better reliability — elimination of mechanical switch and governor will reduce field failures by at least 50 percent

### Some limit to applications

Applications are limited however to loads requiring low starting torques. The most common are direct drive fans, blower, and pumps. Reportedly these improvements are at no or little increase in cost.

Perhaps this is not as revolutionary as it would appear to be, but I believe this type motor will soon catch on as new equipment is installed or motors are replaced. If you wish more information, please stop by or call. I will be happy to make a copy of the literature I have in my file.

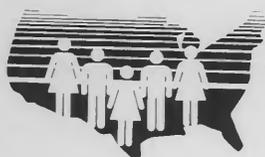




# Illini Electric News

ILLINI ELECTRIC COOPERATIVE 217-352-5241 CHAMPAIGN, ILLINOIS

## October is Co-op Month



October is Cooperative Month, and 40,000 cooperatives with 60 million members will observe the occasion with a celebration of an efficient, economical way of meeting the common needs of people all over the U.S.

Cooperatives provide everything from electric service to day care, insurance to health care, farm marketing and farm credit, even food and telephone service. And, cooperatives are a unique fixture in the American economic system: they're owned by the people they serve, people with a common bond who have joined forces to provide a needed service.

For example, rural electric cooperatives were formed in the mid-Thirties to provide electricity to America's farmers. At the time, only 10 percent of the country's farms had electricity. But farmers, working together and with the Rural Electrification Administration, provided central station electric service to over 90 percent of the country's farms by the 1960s. And, rural electric cooperative members continue to work together to meet the challenges of a growing rural population and a demand for electricity exceeding that of the country at large.

Rural electric cooperatives are just one example of people banding together to provide a service for themselves by themselves. Co-op people get things done, for a better community, for you!

## Planting for tomorrow

A Chinese proverb reminds us that "one generation plants the trees, another gets the shade."

Planting for tomorrow. That's what rural Americans did several generations back when they created self-owned electric services where none had existed before. It wasn't easy. They had to work and plan and risk in order to "plant" this particular cooperative tree. And they had to coddle it and nurture it until it could clench its roots in a firm grasp on life. There were worries and setbacks, but the fragile planting did take root and did survive.

Today, nearly 1,000 user-owned rural electric systems stand strong in the service of 25 million Americans. They are the light and power that set rural America in motion. More important, they are compelling evidence that people can do difficult and important things for themselves — if they choose to.

They provide an impressive legacy of "shade" — of comfort and convenience and safety — for our children, and for their children, and on and on.

But the first thing they did — the thing we will remember for a long, long, time — was to push back the shade that rural Americans had been living in for so many years.

Gene Clifford  
National Rural Electric Cooperative Association

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# MANAGER'S COMMENTS by Wm. David Champion, Jr.



The cost of electricity is on everyone's mind nowadays. It seems that it has been getting drastically more expensive every year since the oil embargo in the early 1970's. It's true. It has. But we need to keep things in perspective. The benefits derived from the use of electricity are enormous. And if we take a few moments when we receive the bill each month to reflect upon what those kilowatt-hours have done for us, it is obvious that life would be much tougher without electricity. And no one needs life to be tougher than it already is. Lighting, refrigeration, air conditioning, heating, cooking, television, radio, pumping and heating water are just a few of the many household needs that are satisfied by electricity.

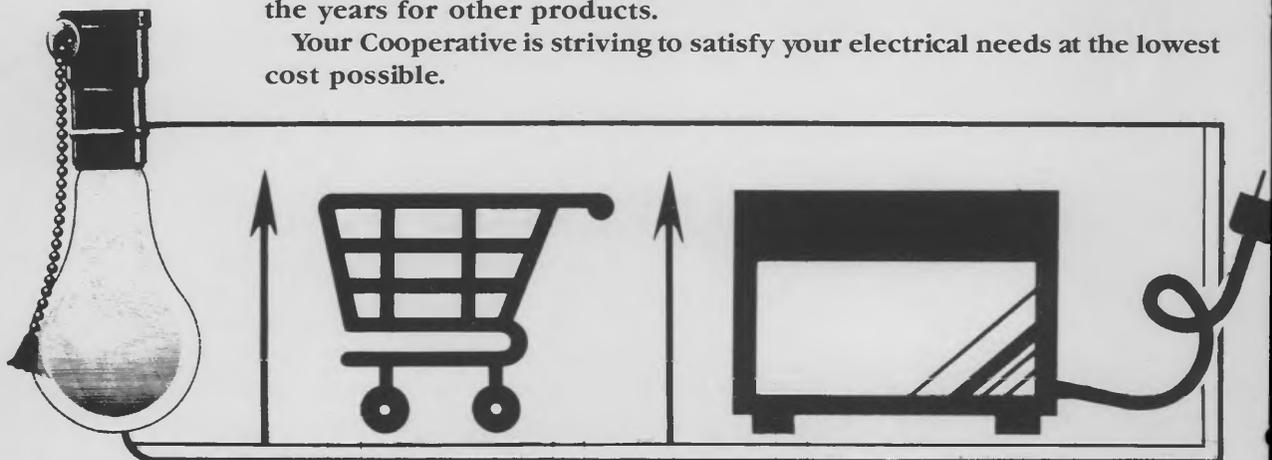
The bill seems larger sometimes because we pay it monthly rather than as we use each product just as a grocery bill would be much harder to accept if we paid it monthly as opposed to each visit to the store.

How expensive is electricity? To put the cost of electricity in perspective, let's take a look at the cost of electricity and compare it to other costs:

- The cost of an electric blanket will pay for the electricity to operate it for one year.
- The cost of one-half sheet of plywood will operate the electric saw used to cut it for one week.
- The cost of a pound of sirloin steak will pay for the electricity used by the skillet to cook it for over 50 hours.
- The cost of one flashlight battery will pay for enough electricity to operate a clock radio for 117 hours.
- The cost of one record album will pay for the electricity to operate the stereo to play it for over 650 hours.
- The cost for two people to attend a movie is equal to the cost of running a television set five hours a day for two months.
- The cost of one pound of coffee will operate the electric percolator for nearly 70 hours.
- The cost of a loaf of bread will pay to operate a toaster for five months.
- The cost of a cord of wood will heat more than 4,500 gallons of water electrically.
- The cost of typical magazine will pay for the electricity for a 100-watt light bulb to read it for 250 hours.
- The cost of 12 square feet of carpet will operate the vacuum sweeper to clean it for 33 years.

Granted, electricity prices are going up, but we should remember the value received for that price and also compare it to the increases over the years for other products.

Your Cooperative is striving to satisfy your electrical needs at the lowest cost possible.



# Illini replacing meters

## New meters have five digits

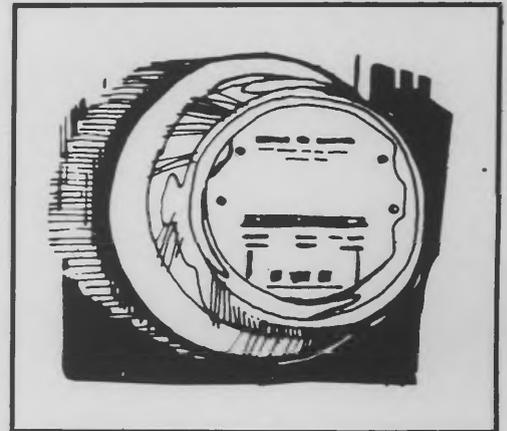
Illini Electric was first organized in 1938. Some of the original installed meters are still in operation. This has a lot to say about the reliability of the equipment. Their long life is attributed to regular checks and adjustments to keep these instruments as accurate as possible. Like everything else, the time has come to replace all of the remaining old style meters.

The original meters installed on our system were rated for 60 amps, and the register was multiplied by one. The new meters being installed in their place are rated for 200 amps and have a register which is multiplied by 10. This is where the confusion starts. These new meters are built heavier to measure the larger loads of electricity needed by today's users. They are built heavier to last longer and be more accurate. In fact, the old meters are almost always slow because of the wear of the mechanical parts.

These new meters always come with five digits or numbers to read. To leave these meter registers as they come from the factory would mean there would be some meters with four digits and some with five. Should some of each be around, people opening up the mail would not know whether to expect four or five numbers for a meter reading. If the wrong quantity of numbers is recorded in the computer, the next bill produced would be in error. To simplify this, the meter testing lab covers up the right most digit on the dial. Thus there is always a zero assumed to be in that spot. To get the correct reading on the meter, the numbers showing must always be multiplied by 10. Another way to look at it is to assume there is a zero on the right.

However you look at it, there is a number change, for every 10 kilowatt-hours used. Most old style meters were changed last year for everyone living north of I-74. Meters for those living south of I-74 have been changed this year.

If you receive a new "multiplied by 10" meter, please do not multiply your readings. This will be done automatically at the office. If you multiply the reading and we multiply it again, your bill will be very large. When you read the meter on the seventh of each month, just send us the four numbers that are showing.



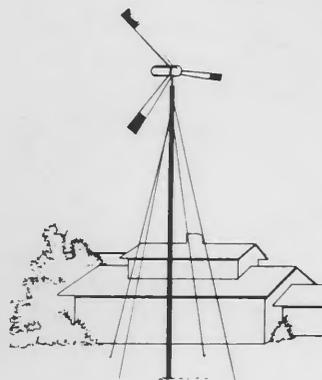
## MAC topics in August

Your Member Advisory Committee discussed several items at its Aug. 21 meeting. Among the topics were: ways to improve member participation in annual meetings; speed up and improve voting procedure; baby-sitting during annual meeting; bill stuffers covering history of IEC and general cooperative philosophy. Finishing the evening was a discussion of the difficult position the Cooperative is in when a rate increase causes a reduction in kilowatt-hour sales, which further causes the amount of revenue to drop.

The next meeting is scheduled for Nov. 13.

The purpose of the MAC is to allow representatives of the membership to present specific recommendations to the board of directors and staff concerning operations of the Cooperative. The directors and staff feel this committee is a vital link in the communications chain between the members and the board of directors.

## Wind generators can be expensive



Wind generators are getting a lot of publicity these days as alternative power sources. Advertisements on television and in "do-it-yourself" type magazines make the installation and operation of a wind turbine to generate your own electricity sound cheap, simple and sensible.

The advertisements highlight the fact that a recently enacted federal law requires utilities to buy back any excess power that is produced by a wind generator. It is true that such a law exists. However, the ads are somewhat misleading since they state only the barest facts of the law. They don't go into any detail about the expenses and difficulties involved with such an operation or the feasibility of generating your own power with the wind device in our area.

Sections 201 and 210 of the Public Utility Regulatory Policies Act, the law to which the commercials refer, apply to all types of independent power production, but wind turbines are receiving the most attention as potential cogenerators.

What the breathless announcer on the commercial doesn't tell the viewer is that he will need a constant wind speed of 10-15 mph in order to generate enough electricity to run small appliances, and then only one at a time. The typical wind generator unit is one to two kilowatts, which means it could generate between 1,000 and 2,000 watts of electricity. Keep in mind that this is only at optimum performance when the wind is blowing steadily. Considering that a hand-held hair dryer requires about 1,200 watts, a person could dry his hair if he didn't have the toaster of a similar appliance on at the same time.

## PURPA law sets out the rules

Whenever a wind generator is tied in with our power lines through the connection to a member's wiring, there are certain rules and regulations which must be followed. These rules are contained in the PURPA law itself and must be followed by all individuals. According to the PURPA law, the small producer or cogenerator is required to pay for all interconnection costs including connecting, switching, metering, transmitting, distributing, safety, insurance costs, and other costs related to this interconnection.

Generally there are three areas that require attention prior to installing a wind generator. First, a written contract must be entered into, establishing the rights as well as the responsibilities of both parties. Second, considerable changes to the meter loop must be made and must pass our inspection. All costs associated with the installation of this new meter arrangement must be paid for by the generator owner. The third big hurdle to cross is the insurance requirement placed on the wind generator owner. Limited space here does not permit detailed explanation of the rules and regulations.

It isn't as easy or as cheap to install a wind generator as some would lead you to believe.

We must caution anyone interested in wind generation to talk with the Member Service Department prior to spending their money. Even though there is a tax break on wind energy equipment, the net cost of the equipment plus the cost of tying into a utility's lines is probably prohibitive for most in our area.



# Illini Electric News

ILLINI ELECTRIC COOPERATIVE 217-352-5241 CHAMPAIGN, ILLINOIS

## Don't blame your meter

Many members believe their meter is recording too much usage when they have a high bill. This is like blaming the cash register at the grocery store for a high grocery bill or the meter on a gasoline pump for poor gas mileage.

Your meter is a highly calibrated and accurate device. In fact few commodities are as accurately measured as electricity. In many routine and requested meter tests conducted by Illini Electric, it is rare to find a meter that is more than two percent fast or slow. When an error is found, 99 percent of those meters will be registering slow. In other words, the meter isn't recording enough usage. That's because it gets slower with the passing of time as dirt, moisture and wear on the bearings take their toll.

The electric meter is the cash register to the Cooperative, thus it is important to keep the accuracy level of the meter as near as possible to 100 percent. For that reason the Cooperative normally maintains a seven-year rotation schedule of testing to help keep each member's meter clean and in good working order. With the implementation of a new meter seal policy, it was necessary to test the meters and install a new meter seal at every location. The change in the schedule calls for all meters to be tested and sealed by this fall.

To accomplish this, two representatives from an independent testing laboratory, equipped with special equipment to field test meters, are inspecting and calibrating all of our meters. Such routine tests will, of course, be at no charge.

Should anyone request a special test at any other time and the meter is found to be operating accurately, the Cooperative will assess a \$30 service charge to help cover the cost of the test. If a member's meter is found

to be outside the tolerance level, there is no service charge and an adjustment will be made to the member's account.

Due to the proven accuracy of electric meters, the Cooperative advises members to take a close look at what may be causing their higher usage before suspecting a meter error and requesting a meter test.

*Carl Bridges with Electric Lab and Sales uses a specially equipped van to field test meters. Every member's meter will be field tested this year to make sure it is clean and in excellent working condition.*



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# MANAGER'S COMMENTS by Wm. David Champion, Jr.



Champion

## Costs for rural areas were high

The cost of electricity has always been a major concern of Illini Electric Cooperative directors and management. Keeping costs as low as possible for the member-owners of Illini is a continuing objective.

Maintaining reasonable costs, though, is but one-half of the foremost responsibility of your cooperative board and management. Another equally important concern is providing an adequate supply of electricity.

Since Illini Electric Cooperative was organized some 47 years ago, these goals have guided the cooperative. Early electric cooperative members knew they probably could not have electricity for the same price as their city cousins. But they thought they could have reliable, central-station electric service for a reasonable price, a price that would be less than that likely to be charged by the power companies. And they knew the cooperative would put poles and lines into sparsely populated rural areas.

## Reliable power supply is vital

Many investor-owned power companies had wanted thousands of dollars to connect rural residences and farms to their lines and then asked those rural consumers to pay 10 to 12 cents per kilowatt-hour, and as much as 25-40 cents per kwh in some instances. With wheat bringing 80 cents a bushel and gross farm income averaging \$1,800 a year, you can understand the tremendous challenge facing those people in the 1930s. Even the rural electric cooperative electricity was terribly expensive for the time, sometimes seven to 10 cents per kilowatt-hour, but few who knew what life was without it complained. In fact, they wanted to find out how they could electrify their farms and homes further, to remove some of the drudgery from rural living and improve productivity.

Putting electricity to work in the agricultural community called for reliable bulk power supply. For years, cooperatives utilized favorable generating plant conditions among investor-owned utilities to obtain long-term power supply contracts that greatly benefited their member-consumers. But the early 1970s brought the oil embargo and upheaval in the energy world. Suppliers of wholesale power said they would no longer make long-term agreements with the cooperatives and suggested the day was not far off when they would probably not be able to provide any power supply to cooperatives.

Against this background, the cooperatives launched their efforts to become self-sufficient, controlling their own source of wholesale power. Soyland Power Cooperative, an organization begun in 1963 with six member-cooperatives, grew to 15 in 1975 as electric cooperatives sought to provide electric power that would not be available from past sources.

As the cooperatives in Soyland explored options for purchasing or building generation, they determined that purchase of a portion of the nuclear Clinton Power Station was the best alternative. At the time, in the mid-1970s, costs of building and operating a nuclear power plant were lower than those of a coal-fired plant. Building costs were known to be greater for nuclear, but the life-of-the-plant operating costs were far less than for coal.

Events since the mid-70s have changed the nuclear power industry. Construction times have been extended significantly mainly because of increased regulatory requirements. In the decade from 1970 to 1980, the average construction time for nuclear plants more than doubled, from



five years to about 12 years. This extra time, combined with rapid inflation and high interest rates, caused plant costs to increase drastically.

The cooperatives knew their share of the Clinton plant would not provide all their power. In fact, only about one-seventh of Illini's power will come from Clinton. Soyland needed a source for the remaining six-sevenths of its members' power needs. A decision was made to build a coal-fired plant in Pike County. However, when load growth patterns changed and economic conditions indicated that construction of a planned coal-fired generating station in Pike County was no longer prudent, Soyland's member-cooperatives made the hard decision to terminate that project, knowing it was far better to absorb the cancellation costs than to forge ahead with a power plant that would not be needed in this decade. Instead, Soyland saw slowing load growth and surplus generating capacity among Illinois utilities as an opportunity to negotiate for purchase of generating capacity from that surplus.



Soyland has contracted with Illinois Power Company for 400 megawatts of Illinois Power Company's coal-fired generating capacity and will be able to operate that capacity as if we owned it. This is a joint agreement between Soyland Power Cooperative and Western Illinois Power Cooperative and includes an operating agreement effective the coming Jan. 1 to cover use of that capacity. Soyland and WIPCO are also negotiating another set of long-term contracts with Central Illinois Public Service Company to provide additional coal-fired capacity from that company's system.

These contracts will assure a diversified source of power for Soyland's 15 member-systems and will provide greater rate stability in the years ahead than we have seen over the past 10 years. Soyland will have the flexibility through the transmission grid to purchase and sell power to other generating companies so that the power we buy on a wholesale basis from Soyland will be the least expensive available to Illini at any given moment, day or night, 365 days a year.

Although there will be a series of rate increases in the next few years, Soyland's emergence as a complete generation and transmission cooperative gives hope for stabilized electric rates in the future.

Between now and November 1986, we expect that wholesale rates for Illini will increase about 2.5 cents per kilowatt-hour, from about 6.5 cents to approximately 9.0 cents. After that, the rates should be stabilized because we have gained control of our power supply and will have costs "locked in" for many years.

Earlier in this report I mentioned that the companies that were our wholesale suppliers told us in the 1970s that future supplies were questionable and that the cooperatives should look elsewhere for wholesale power. At the same time, the wholesale power rates were beginning to increase sharply. In fact, wholesale rates doubled in those years, mainly because the cooperatives were captive wholesale customers.

Now, because Soyland and its 15 member-cooperatives will have control over generation and the ability to make economic transactions through the grid, we can look forward to rate stability after the next three years.

## **Farm Progress Show**



*The Ed Sepp, Don Keith, Ivan and Rick Rogers and Steve Nelson farms teamed up to host the Farm Progress Show, an annual event that rotates among the states of Iowa, Indiana and Illinois. This year's event in Champaign County, just northeast of Fisher, drew some 265,000 persons. Illini Electric Cooperative set up some 70 poles and 60 transformers to serve the site during the show's three-day run and the time before and after the show.*

## **Outage alerts not always possible**

Major outages during working hours will sometimes prompt a question from a member asking why the Cooperative cannot notify everyone when work is to be done. Our procedure for prior notification is to send a notice to all affected accounts when the planned outage is of a large enough scale and for a long enough time period to warrant the expense. Generally such an area would cover the entire substation. However, some judgement by the staff is necessary if a hard and fast rule is difficult to establish.

Notification by phone is impossible for an area which requires looking up and calling 700 to 800 people, so notice by mail is the only practical way. That in itself creates problems. Once a date for work is selected, post cards must have the message printed on them, the computer must print address labels for the affected area, and an employee must stick the labels on the printed cards prior to mailing. All this amounts to nearly \$200 and requires several days advance planning and work. Since the mailing time requires two to three days and it is necessary for you to receive the notice far enough ahead to make alternate plans, a time period of nearly two weeks is needed for proper notification.

## **Uncertainty is a problem**

Needless to say, it is difficult at best to predict or plan work two weeks in advance. Weather and other problems can wreck the best made plans even after all the work and expense of getting out notices. For this reason, only a complete substation outage that will last for more than just a few minutes will be reason enough for advance notification.

Individual lines serve fewer meters and are generally off for less time, thus it is not feasible to notify everyone prior to these outages. Although as much work as possible will be done while the line is still on, some outages are required. We realize this can be an inconvenience, however, we hope everyone will understand why it is not always possible to have advance notification.



# Illini Electric News

ILLINI ELECTRIC COOPERATIVE 217-352-5241 CHAMPAIGN, ILLINOIS

## What is Member Service?

### Assistance for members

Many times articles in this center section and other cooperative publications have referred to the Member Service Department as the contact at our office where further information could be obtained. Just what is the Member Service Department? Who is the Member Service Adviser? What is his function?

At Illini Electric, the Member Service Department consists of one person, namely Ray Weiss. Your Member Service Adviser is able to offer help and information on a wide variety of electrical matters, weatherization, heating and cooling systems. He is able and willing to answer any question from "what is the wholesale power cost adjustment" to "what size electric heater should be installed in that spare room."

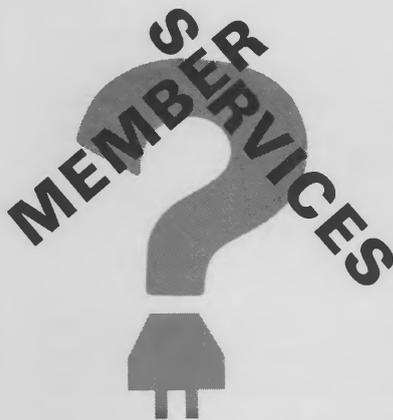
For example, when a call is received concerning a higher than normal electric bill, he can give information on how much electricity should be used, based on the lifestyle of an average family with the same appliances. When a bill is higher than normal the Member Service Adviser can suggest things to check in an attempt to locate why the kwh usage is higher than expected.

Members interested in remodeling their present house or building a new one should contact the Member Service Adviser to discuss the installation and proper amount of insulation, as well as the various ways electric heat can be used. Several good illustrated publications can be picked up and read at your leisure or your specific building plans can be discussed either at our office or the building site. This department maintains information and practical knowledge on the most efficient and innovative electric heating systems such as the groundwater heat pump and the earth-coupled, closed-loop heat pump.

Of course, no one person can have the answer to every question. It may be necessary for us to locate an answer by contacting various outside organizations such as our state or national association, dealer's and manufacturer's representatives and other trade allies. Various departments on the U of I campus also provide information. We want you to realize that every attempt will be made to answer your question.

Generally speaking, questions or problems that occur on the member's side of the meter fall under the area of the Member Service Adviser. These services and many others are offered to all members at no charge. Just call or stop by the office. The object is not to make your electric bill larger, but to make a contribution toward better living and better farming at a lower cost, and to assist you in the efficient use of electricity.

You are encouraged to become acquainted with the services offered by the Member Service Department.



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## Meter seal charge

After reviewing the cost to Illini Electric for meters that have been tampered with and the costs of maintaining the accuracy of meters, the board of directors set the charge of \$50 to be made to any member whose meter seal is found to have been broken without specific authorization from Illini Electric.

The accurate registration of every meter on our system is beneficial to all members. Accurate recording of usage and payment of all accounts protects each member from paying more than his or her share.

Most electricians have been notified of the new policy which requires a call to the Cooperative when changes are to be made in a member's wiring. The Cooperative will take the necessary steps to authorize breaking of the meter seal and will arrange for it to be promptly resealed.

Members planning electric changes will want to make certain that proper arrangements are made with Illini Electric to have the meter seal broken.

The unauthorized breaking of a meter seal will result in a \$50 charge. You are responsible for notifying the Cooperative in advance.

## Electric power and fish

Ten years ago a tiny fish, barely three inches long, stirred up a cloud of controversy far out of proportion to its diminutive size or importance and held up construction on the Tennessee Valley Authority's Tellico Dam Project. The contention at that time was that the construction of the dam threatened the snail-darter's very existence and should, therefore, not be completed. The Interior Department now says the snail-darter has now been found in six tributaries of the Tennessee River and doesn't warrant continued classification as an endangered species. However, noting that these "populations are extremely small and subject to threats to their continued existence," the Department decided to maintain protection for the snail-darter as a "threatened" species under federal law. This reclassification, unfortunately, comes long after any opportunity has passed to reverse the costs to utility customers and taxpayers caused by the snail-darter's misclassification.

The snail-darter episode is but one of many instances in which the true public interest is not addressed. Facts are clouded by emotion, or strong opinion. The following comments concern another subject that threatens to add billions to consumers' costs.

### Fish at \$6,000 per pound

PAUL HARVEY: "Oh, my goodness, the sky is falling again! The newest EPA study concludes that acid rain is such a menace we must spend \$21 billion to control it. Well, perhaps, but you know, before we rescue our northeast states' lake fish, at a cost of \$6,000 a pound of fish, let's be sure, because we've let the false alarmists scare us into some frightful extravagance in the past. . . .

"In 1978, HEW reported that 38 percent of all cancer in the United States could be traced to on-the-job chemicals. It was 1981 before two of the world's leading epidemiologists found that report to be grossly erroneous. . . .

"In 1979: A spokesman for the National Cancer Institute testified before Congress that the incidence of cancer was rising toward epidemic proportions. Two years later, a statistical review discovered, on the contrary, our nation's incidence of cancer is not increasing. . . .

"In 1980, 700 families were evacuated from the area of Love Canal after the EPA reported chromosomal abnormalities in some residents. Last May the Center for Disease Control updated that research and found no excess chromosomal abnormalities of any sort. And the other informal health studies alleging that residents of the Love Canal area had suffered

increased epilepsy and birth defects and cancer—those studies have been refuted also. . . .

## Cyclamates and lab animals

“1969: The FDA issued its dramatic alarm about cyclamates, got cyclamates banned from broad consumer use. It caused bladder cancer in lab rats, they said. Twenty-one separate studies have since affirmed that even sustained feeding of high dosages of cyclamates to lab animals produced no significant increase in bladder cancer. . . .

“A 1978 Canadian study of bladder cancer claimed it could be caused by saccharin. But two years later the NCI decisively refuted those findings. . . .

“DDT was blamed in 1972, suspected of causing liver tumors in mice. Six years later the NCI announced no such evidence exists. . . .

“So now we come to the new scare, acid rain. Now the EPA says coal-fired factories in our Midwest are killing fish and forests in our Northeast. However, four other studies affirm that soil formulation and vegetative succession have more to do with acidification of the soil and water than anything falling from the sky. And besides, one active volcano produces more upper altitude pollution in one year than all of our factory smoke put together. . . .

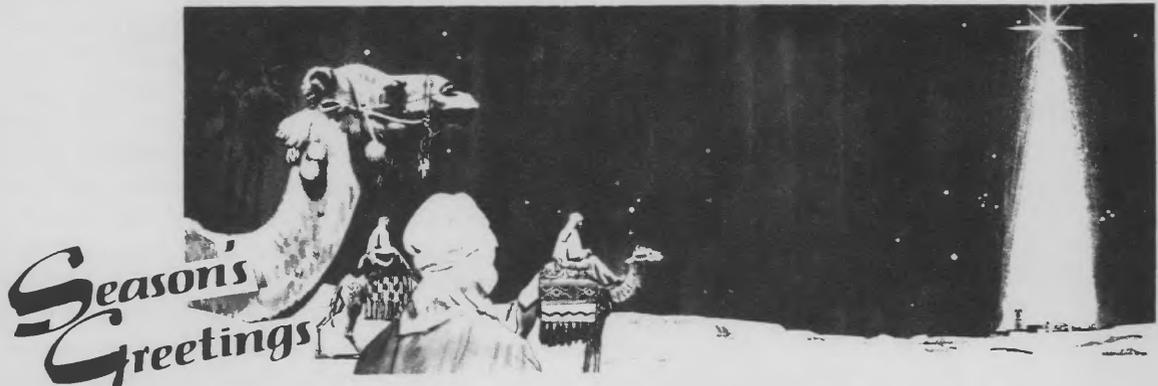
“The jury is still out; this time let’s wait until the jury is in before we spend \$21 billion fixing something that isn’t broken.” — Radio broadcast, Nov. 19, 1983

## Don't be careless

If a tractor or piece of equipment hitched to the tractor should contact an overhead line, the tractor and the equipment become energized. However, the driver of the tractor and any riders are usually safe from electrocution as long as they remain on the unit. Rubber tires may partially insulate the tractor and equipment from the ground, possibly preventing completion of a good electric circuit.

Should you find yourself in this situation, or witness someone else in a similar circumstance, be sure that no attempt is made to leave the tractor until help arrives from your local cooperative or a qualified rescue squad. Be sure to keep other persons from contacting any part of an energized tractor or equipment. Avoid touching the tractor with any metal or other conductive object.

If unusual circumstances demand immediate evacuation from the tractor, the individual must jump clear of the energized unit, making sure no part of the body contacts the ground and the unit at the same time. Be especially aware of parts of the equipment extending away from the main unit. Even a momentary contact, making a circuit to ground, can mean a fatal injury. These same precautions apply to an energized automobile.



Season's  
Greetings

## Home wiring

The key to the efficient performance of electrical home equipment is a modern electrical wiring system.

"Overworked" home wiring systems present a dilemma frequently experienced by a high percentage of homeowners. The problem has been amplified over the years by the steady addition of new appliances, while the updating of wiring accordingly has been overlooked or neglected.

The symptoms of an overtaxed system appear as annoyances in various forms: the frequent blowing of fuses or tripping of circuit breakers, lights dimming when motor-driven appliances start, appliances laboring to perform, and a shrinking TV picture are all signs that trouble exists.

We advise present and prospective homeowners to observe the following guidelines for a modern wiring system:

- (1) An up-to-date system should have a sufficiently large conduit and entrance wire to match the capacity of the main breaker.
- (2) We recommend a main panel of at least 100 amperes with space available for 20 circuits. Total electric homes, or homes that wish to wire for future growth will want to have a 200 ampere 40 circuit panel.
- (3) Your home should have an adequate number of circuits not only for your present appliance load but also to allow for added appliances in the future.
- (4) An adequate number of receptacles is important. Recommended: One for every 12 feet of wall space with higher concentration in the kitchen.
- (5) Changes to the wiring leading to your house may be necessary in order not to have a bottleneck further upstream. Since the Cooperative's responsibility stops at the metering point (either on the house or at the pole) each change outdoors will vary.

You are the one, of course, who must look after these things in your own home. Since few know enough about wiring to make sure there is full housepower, we advise you to consult a qualified electrician or the Member Service Department at our office.

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## Garage doors without power

If you have an automatically opening garage door, do you know how to open it if the electrical power is off? It recently came to our attention that one member did not know how to open the door.

There are many things which could cause you to need to know how to open the door manually. There may be an outage due to a storm, a transformer fuse, a main circuit breaker, an individual circuit breaker or fuse, a fault in either the electrical power or control wiring, a faulty control switch, a fault in the lifting mechanism or a breakage of the lifting mechanism.

Most of these doors, if properly installed, should be very easy to open (or close). The door-lifting springs should be adjusted to where only a little extra effort is required to open the door. There should be a short rope or chain hanging from the latching mechanism where the door mechanism is connected to the lifting screw or chain. Pull this short rope or chain towards the lifting motor. The first pull should unlatch the mechanism and then further pulling should open the door. Try it. If it doesn't work, read instructions if you have any. If not, ask a neighbor. Each car driver in the family should know how to do this.