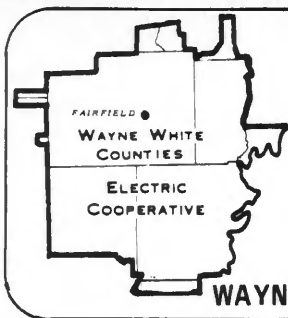


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Wayne-White News

WAYNE-WHITE COUNTIES ELECTRIC COOPERATIVE 618-842-2196 FAIRFIELD, ILLINOIS

Load Management Program Is Under Consideration

Member-owners of Wayne-White Counties Electric Cooperative are being surveyed to determine if a load management program will be helpful in conserving electric power and controlling the cost of providing electric service.

S. J. Miller, manager, said the cooperative's board of directors is considering a proposal that involves installation of small, radio-controlled devices on water heaters to reduce the cooperative's electric consumption during periods of high demand.

Miller pointed out that demand is one of three cost areas for purchasing electric power. Each month when Wayne-White is billed for power used by its members, the cooperative's bill is broken down in three categories of costs: energy used, fuel adjustment and demand.

Although most members' bills do not include demand charges specifically, the charges constitute a large portion of the base rate. The base rate is made up of energy and demand charges.

The contract by which the cooperative secures adequate supplies of power calls for the demand charges to be based on the highest consumption at any one time in a month, even if that peak is reached for only a few minutes on a single day.

By reducing, or shaving, that peak load for brief periods, Miller said, it is possible for the cooperative to lower

the monthly wholesale demand charges and exercise some control over increasing electric costs.

Miller said there would be no cost to the individual members for the control unit or installation.

He illustrated how the demand charges influence the cooperative's costs of securing adequate electric power by using the cooperative's power costs for 1975. Of the total bill of \$3,419,117, \$740,683 went for energy use charges, \$521,756 for fuel adjustment charges and \$2,157,541 for demand charges. Sixty-three percent of the cooperative's power expenditure goes for the demand charges, yet the demand peak is reached only a few times each month, Miller said.

The control devices would shut off water heater elements from five to nine minutes during the few peak periods Wayne-White experiences annually, resulting in lower peaks and reduced demand charges. The water heater would operate normally, Miller said. Water pressure would not be affected. While the program will not greatly lower members' individual monthly bills by shutting off the water heaters, the reduction in demand charges will be significantly reflected in the wholesale power cost adjustment to the cooperative each month and will assist in forestalling future rate increases.

All water heaters in the cooperative would not be shut off at the same

time. By using several radio frequencies, water heaters in limited areas would be affected at a given time, to achieve a balance in load distribution. Because of the short time the water heaters would be off, water temperatures would not be noticeably affected.

Accompanying charts show how power costs have increased in the last decade (figure 1) and when Wayne-White's typical demand occurs and what the load management program is expected to accomplish in reducing the kilowatt (1,000 watts) demand (figure 2).

Power costs, Miller pointed out, have climbed from .758 cents per kilowatt-hour in 1964 to 1.68 in 1975 and above 2.5 cents at the present time, as shown in figure 1.

Figure 2 shows Wayne-White's peak occurs about 5:30 p.m. when demand reaches as high as 39,000 kilowatts. It also shows the anticipated reduction of 3,250 kilowatts in the peak demand, as well as the desired effect of flattening out the demand by transferring the load to a time during which overall demand is down.

Miller said the proposal includes installation of controls on 5,000 water heaters. By using an estimate of 650 watts (.65 kilowatt) reduced demand per water heater, the 3,250 kilowatt peak reduction number is reached.

When 5,000 units have come under the program, Miller said, the coop-



Energy Conservation Now

The energy crisis is still a reality. It's a problem which Wayne-White Counties Electric Cooperative battles daily in its endeavor to satisfy the electric power requirements of its members.

The above symbol has been designed to represent three primary elements for successful energy management: "c" for conservation, "e" for energy and the inward-pointing arrow for the immediate need to conserve our natural resources.

erative anticipates an annual saving of over \$146,000 in its demand charges. If 3,000 of the units are installed, over \$87,000 in annual demand charges savings is estimated and peak load reduction would be about 1,950 kilowatts.

Miller said the material and installation costs would be recovered in about 3½ years if 5,000 control units are used. The recovery period for installation of 3,000 would be about 3 3/4 years.

A survey of appliances was made by mail of all residential consumers. From the results of this survey, a second letter was mailed to those reporting electric water heaters in use. A return-postage-paid card was enclosed, requesting that the consumers indicate if they would permit a control device to be installed on their water heaters.

For the convenience of those members who received but may no longer have the card, a copy of the request form is being reprinted. Please complete it if you have an electric water heater and return it to: Wayne-White Counties Electric Cooperative, P. O. Drawer E, Fairfield, Illinois 62837.

Miller said persons who wished further information could also telephone the cooperative office, 841-2196.

Cents per kilowatt-hour

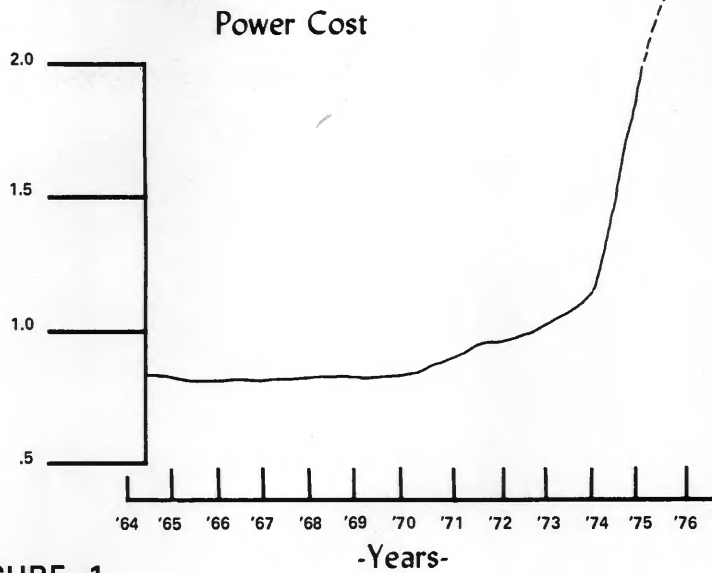


FIGURE 1

Kilowatts

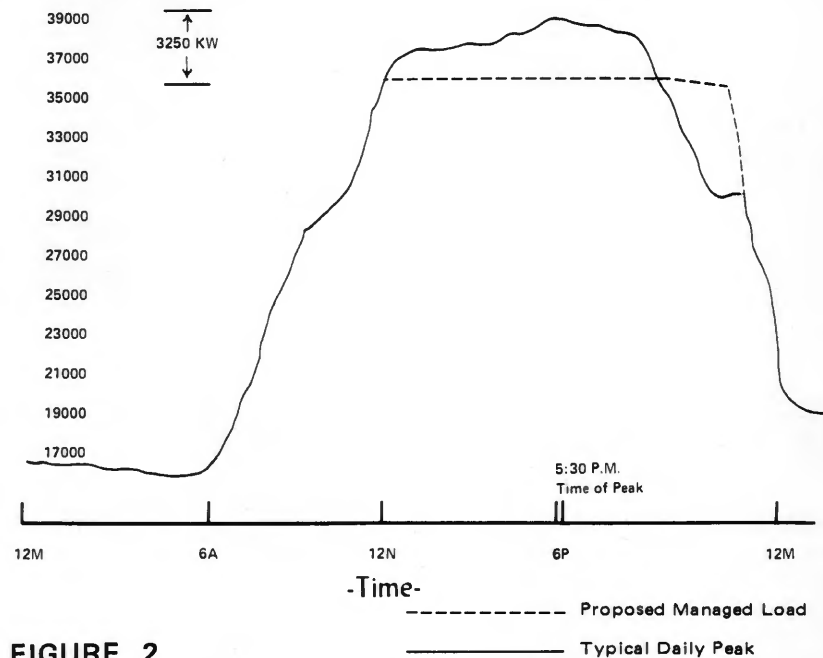


FIGURE 2

TO: WAYNE-WHITE COUNTIES ELECTRIC COOPERATIVE
P. O. Drawer E
Fairfield, Illinois 62837

In order to assist in the conservation of electric energy and to help control the cost of providing electric service, I hereby request Wayne-White Counties Electric Cooperative to have a demand control device installed on my electric waterheater at no expense to me. I understand the device will be installed by qualified personnel, and that it will be operated during peak demand periods for short periods at a time as a means of reducing the cooperative's wholesale power cost.

Member's Signature

Date

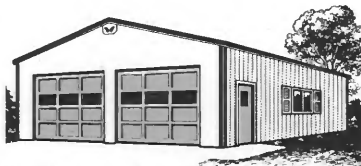
- I will give consent
 I withhold consent
 I would like more information

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**Solar Grain
Drying Conference**

(continued from page 5)

collectors are in use each year, it also has the advantage of being relatively inexpensive—once the collection system is built—and readily available.

Solar's potential was summed up by Sims, who said, "I think this thing is really going to catch on, and there are a lot of farmers out there ready to start using it. There is plenty of energy out there."

Several Illinois electric cooperatives sent representatives to the conference. Attending were: Roger Mohrman, Adams Electrical Co-Operative; John Kober, Egyptian Electric Cooperative Association; Vince Ijams and Charles Kyle, Corn Belt Electric Cooperative; Randall Beasley, Holly Shriver, Rick Phelps and Frank Gibbons, Coles-Moultrie Electric Cooperative; Victor Ketten and David Barbey, Southwestern Electric Cooperative; Ray Weiss, Howard Schweighart and Leo Klingelhoffer, Illini Electric Cooperative; Lowell R. Riffey, M.J.M. Electric Cooperative; and Bob Lands, Southeastern Illinois Electric Cooperative.

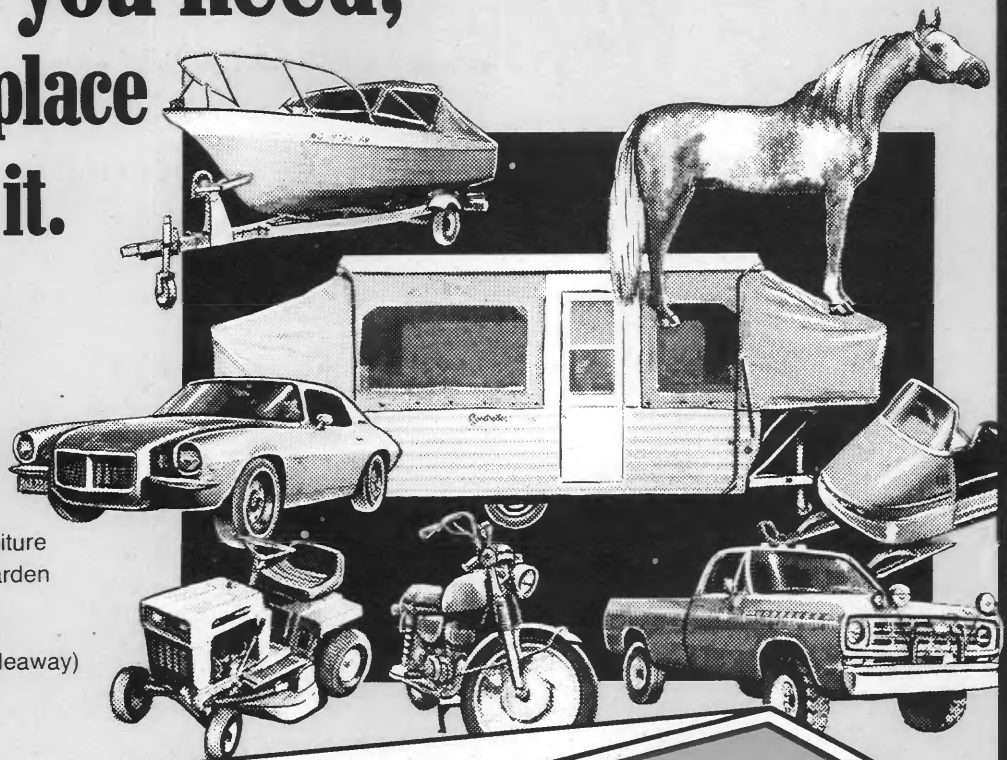
Below, John Kober, member services director for Egyptian Electric Cooperative Association, and Terry Heffernan, assistant director of member services for AIEC, compare grains dried with and without heat. The display was set up at the Solar Grain Drying Conference in Champaign.



ILLINOIS RURAL ELECTRIC NEWS

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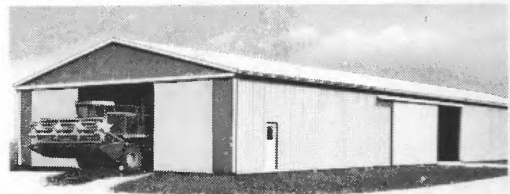
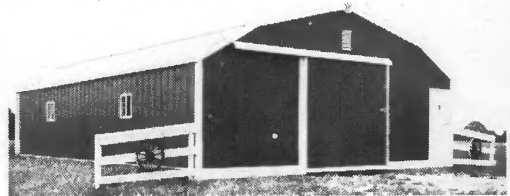


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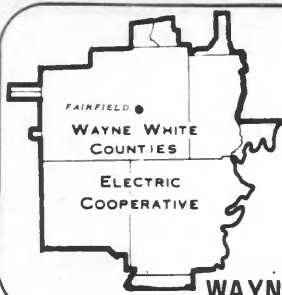
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IR 384



Wayne-White News

WAYNE-WHITE COUNTIES ELECTRIC COOPERATIVE 618-842-2196 FAIRFIELD, ILLINOIS

Manager's Column

by S. J. Miller

The winter of 1976-77 will long be remembered. January will go down in history as being the coldest on record.

Records were also broken at Wayne-White Counties Electric Cooperative. The highest demand in the history of the cooperative was reached, the largest purchase of KWHs and the most money in dollars and cents spent for electric energy.

For sometime, we have been reminded to prepare for the time when energy would be more expensive and

the availability might present some problems. It's very difficult for some people to accept the fact that their house is not adequately insulated and that something must be done to economically heat their home.

Most of us can't do much about the fact that the price of coal has increased over 300 percent in the last year, and most of us as individuals can't do much about inflation. I don't think you want to blame yourself, and I don't think you want to blame your cooperative. While environmental rules and regulations were being passed by our state legislature and the national Congress, we all sat by and let these laws be adopted without even asking how much it would cost. The time has come to pay the price for clean air and clean water.

The only way that we, as individual users, are to come out on top is to conserve as much as we can. We enjoy

the modern conveniences and we are not asking you to give them up. But there are many ways of getting more out of a KWH of electricity.

Thoroughly check your insulation, weather stripping, storm doors and windows, and other areas around the house that might lose heat. Does your TV run from morning to late night? If it does, are you willing to pay the price? Chances are your meter is not to blame for the quantity of power you use and would be the same as blaming the cash register at the grocery store for your high grocery bills.

Our peak load begins about 5 p.m. and ends about 7 p.m. During that period, we pay a high demand price to our wholesale power supplier. We are working on a program to shift this load to a later time. More information will be coming your way as the program is developed.

Your Electric Bill Will Not Be the Same as Your Neighbor's

Ever wonder why your electric bill is not the same as your neighbor's? Of course you have. We all have until common sense took over.

Your electric bill cannot be the same as your neighbor's any more than your gasoline bill, your grocery bill, your laundry bill, your house payment, your car payment and your other expenses can be the same as your neighbor's.

The point to be recognized is that

no two families have the same living habits. Some families use more hot water, requiring the water heater to run longer. Some families take showers, others tub baths. Some bathe daily, others less frequently.

The number and size of hot meals cooked each day also makes a difference. Even if all appliances in the homes were identical, people's living habits would make a big difference.

There are also the important factors

of the amount of insulation in ceilings and walls and the number of square feet in the home to be cooled and heated. Bad wiring, too, can greatly increase the amount of electricity used.

When viewed from this perspective, it's easy to see that the cost of electricity, like the cost of so many other items in the budget, varies greatly from one family to the next.



Alice Mugrage

When a consumer is connected on the Wayne-White Counties Electric Cooperative's lines, and the work order is completed by the lineman, the process of establishing records for the consumer begins. Alice (Alkie) Mugrage, member records clerk, tackles this all-important task of compiling the necessary information to correctly bill the purchasers of electricity and for rental of security lights. In doing this, it is necessary to make a file maintenance record, listing all infor-

mation concerning the consumer, such as name, address, wife's name, membership number, record of paid membership, meter number, meter multiplier, size of meter and reading.

Alkie also prepares a historical file on the newly connected consumer. This becomes a permanent record for future reference. Historical files are also maintained on each account and each meter combining information for current use. Alkie handles all record changes such as disconnects, meter changes, transformer changes, electric heat coding, grain dryer coding, rate schedules and minimum billing. Along with this, she assumes the responsibility of maintaining a meter card file showing the size, type and history of each meter.

Alkie's work expands into other fields of service for the consumer, including the maintenance of records for the mailing list of the magazine, the *Illinois Rural Electric News*. If you are a member receiving service and do not receive this magazine, you may contact Alkie and she will be happy to get you on the mailing list.

Our employees



Pat Gammon

Pat Gammon, engineering clerk, has quite a variety of duties within her employment with Wayne-White Electric. She does secretarial work for both the Engineering Department and the Power Use Department, as well as fulfilling her obligations as Engineering Clerk.

Pat is responsible for maintaining a current radio log required by the Federal Communications Commission. She keeps the file updated in regard to new consumers and disconnected consumers. Pat also assists with the processing of staking sheets, types three-phase contracts, types substation inspection reports, processes PD57 tapes, prepares substation data, records substation meter readings, and prepares outage reports for the computer.

Pat fills in for others when needed, taking the incoming calls during the secretary's absence and assisting in any way she is needed. It is difficult to report all the work Pat is involved in. We will just comment that she, too, is greatly appreciated.



Karen Zimmerman

With more than 11,000 accounts being served by Wayne-White Electric, Karen Zimmerman, data processing clerk, spends much of her time in the never-ending job of providing an accurate master file on all cooperative consumers. She encodes on the Sycor the changes on the consumers and the accounts as they occur. These changes consist of address changes, accounts connected, accounts disconnected,

meter changes, transformer changes, etc.

When master files are built on a new consumer and a printout of the master file is returned to the office, Karen must check the accuracy of this file against the job work order, comparing the meter number, multiplier and other information, to make sure the information has been correctly recorded. This is vital for the cooperative to properly bill the consumer.

Karen also encodes other information that is of much value, such as wife's name, date of payment of membership fee, pole inventory file maintenance, pole changeouts, and new construction assemblies to transmission and distribution. Again, all the printouts must be checked and corrected, if there are any errors.

During the collection periods Karen assists the cashier in opening mail and comparing payments against the amount billed. She assists other departments when they are in need of help due to sickness or vacations. Her willingness to assist others is greatly appreciated.



Winter bitterly cold temperatures froze the Mississippi along Illinois' western border, halting barge traffic and delaying shipments of vital supplies north. In addition, Ohio River barge traffic was halted because of ice, leaving hundreds of barges and towboats virtually stranded.

Degree-day records illustrate winter's severity

(continued from page 14)

no matter what kind of energy provided the heat.

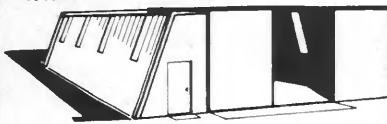
To make matters worse, the degree-day figures do not take into account the wind-chill factor. As far as the degree-day is concerned, the wind makes no difference at all. And, when it comes to heating your home it may not—provided your home is well-sealed against the wind with caulking, weather stripping and storm windows.

Even as cold and expensive as the weather has been here, we have been fortunate. To the east of us, the weather was much worse. Schools closed and factories reduced hours or went completely out of production. Millions of workers were idled; many are still not back at work.

All in all, it has been the kind of winter our grandparents talked about, but this one was worse, according to the records. Throughout Illinois, it has been a winter to remember, even though most of us would rather forget it.

AGRICULTURE

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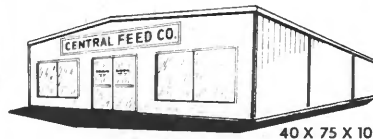
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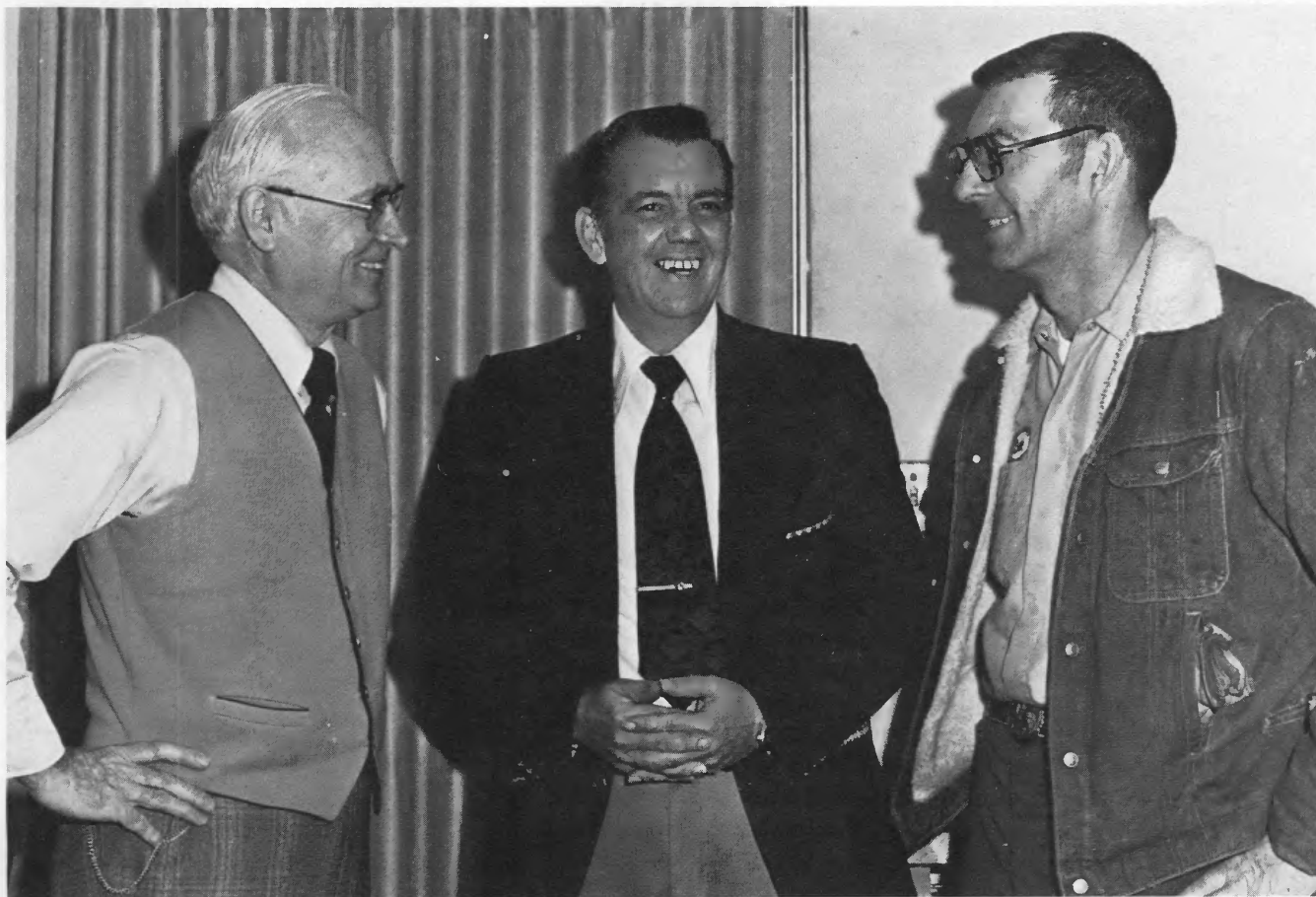
ADDRESS _____

CITY _____ STATE _____ ZIP _____

SIZE NEEDED: _____ X _____ X _____

DATE TO BUILD: _____

elps Weather Service



Tornadoes were the topic of discussion at Spoon River Electric Co-operative recently when the cooperative hosted a tornado spotters meeting. Manager Bill McCamey, left, talked weather with Roger Geer, center, official-in-charge of National Weather Service office in Peoria, and Gene Burchett, coordinator of the Fulton County Emergency Services and Disaster Agency (formerly Civil Defense). Geer praised the area tornado-spotting organization, calling it "one of the best in the nation."

"and we always ask spotters to look for rotation. In fact, we have a slogan that goes like this: 'If it doesn't spin, don't call it in.'"

"On the average," Geer told his audience, "about 700 tornadoes strike each year in the United States, and no state is really safe from them. We hope that by having spotters we can keep loss of life to a minimum. We can't save property, but we can save lives, and that's the most important thing."

A good estimate of wind speed is helpful in keeping track of storm systems, Geer said, and it is possible to estimate wind speeds fairly closely.

"If large branches are moving and

you can hear whistling in overhead wires, the wind velocity is about 25 to 31 miles an hour, and if whole trees are moving and it's inconvenient to walk against the wind, that indicates speeds to 32 to 38 miles an hour.

"If small branches or twigs break, and the wind impedes walking, the wind is blowing 39 to 46 miles an hour, while speeds of 47 to 54 miles an hour will cause slight structural damage and break larger branches and weak limbs," Geer said.

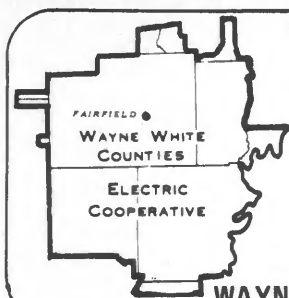
"Winds of 55 to 63 miles an hour will cause moderate structural and tree damage," he continued, "and winds of 64 miles an hour and above cause

heavy-to-severe structural and tree damage."

Information on hailstorm activity is appreciated by the weather service, too, Geer said, and the data is more useful if the size of hailstones is reported. "It's helpful if you relate the size of the hailstones to the sizes of such common objects as peas, marbles, golf balls, and so on," he told the utility men, "or if you tell us its approximate diameter in inches."

Geer also outlined what should be done in the event a tornado watch is broadcast. "A tornado watch is issued

(continued on page 22)



Wayne-White News

WAYNE-WHITE COUNTIES ELECTRIC COOPERATIVE 618-842-2196 FAIRFIELD, ILLINOIS

Greathouse, Williams reelected; Jack Kelsey is new board member

Wayne-White Counties Electric Cooperative members reelected two incumbent board members and elected an Edwards County farmer to succeed a retiring director during the cooperative's 39th annual members' meeting Friday, March 18, at Community High School Gymnasium in Fairfield.

Reelected were Stanley E. Greathouse, Johnsonville, and Evans Williams, McLeansboro. The new director, who succeeds Harold

Shepherd, Albion, is Jack Kelsey, also of Albion. All were elected to three-year terms. Shepherd declined to seek reelection, due to health reasons.

Continuing increases in demand on Wayne-White system and power for the future are primary matters of concern for the cooperative, members were told by President Robert S. Nolen, Carmi, and Manager S. J. Miller, Fairfield.

Nolen said, "We are concerned with the demand that is being placed upon

our system, not so much that the system will not support it, but with the high cost of demand through the power bill." He pointed out that the power supplier for Wayne-White must provide sufficient capacity to meet the cooperative's highest demand peak. This peak demand has led to steadily increasing power costs. He explained that the cooperative was studying a load management concept designed to reduce the peak demand. If such load management can be made effective, "We can experience a considerable savings," Nolen added.

Miller said, "We have experienced the highest demand, as well as the highest kilowatt-hour (kwhr) usage, in the history of the cooperative." He said engineers were studying the system for necessary improvements to meet the increasing requirements of members and it is estimated that present growth trends will create a need for greatly increased substation capacity. "Our current work plan calls for two new substations by next year," Miller said.

Miller asked members to join in the effort to conserve energy, especially when usage in the 5 p.m.-to-6 p.m. period can be reduced.

Nolen said the cooperative was working with other Illinois electric distribution cooperatives to supply members with generation. "Studies show that over a period of time, generation will be cheaper than purchasing all of our power needs," he said.

Wayne-White is one of 15 Illinois distribution cooperatives which make ILLINOIS RURAL ELECTRIC NEWS

Robert S. Nolen, Carmi, left, president of the Wayne-White Counties Electric Cooperative, congratulates Jack Kelsey, Albion, who was elected to the cooperative's board during the 39th annual members' meeting at Community High School in Fairfield, March 18. Reelected to the board were Stanley E. Greathouse, Johnsonville, third from left, and Evans Williams, McLeansboro, who was unavailable for the picture. S. J. Miller, manager, is at right.



up Soyland Power Cooperative, a generation and transmission cooperative which will own a 10.5-percent share of Illinois Power Company's Clinton nuclear power station in DeWitt County.

Miller pointed out that power from the station, after it opens in about five years, will be cheaper than purchased power at that time.

Treasurer Jerry Carter, Mill Shoals, in his report, said "The cooperative has experienced a period of rising costs, which is nothing new in today's world. In the past seven years, the power costs alone have increased over 300 percent. The other operating costs of the cooperative has increased by about 2½-percent per year, or, for the same period of seven years, 19 percent," Carter pointed out.

"We negotiate rates with the power company each year," he said. "To date, they (the power company) have been able to prove that their rates and increases are justifiable," he added. He said the cost of clean air around generating plants adds greatly to the cost of the finished plant.

In 1976, operating expenses and taxes totaled \$6,136,684, compared to \$5,109,063 in 1975. Of the increase, the cost of purchased power in 1976 — \$4,344,617 — was almost \$1-million higher than in 1975. In addition, the cooperative paid taxes totaling \$106,634 in 1976, up nearly \$10,000 over taxes of 1975.

Net margins for 1976 were \$383,606.

Entertainment for the meeting was provided by "The Country Kin," a six-piece instrumental group of Dahlgren.

Following the business session, the board reelected last year's officers: Nolen, president; Greathouse, vice president; Williams, secretary; Carter, treasurer; Robert D. Glover, Mt. Erie, assistant secretary, and Charles R. Moore, Ellery, assistant treasurer.

In addition to the officers and the new board member, G. O. Deem, Geff, and Larry Hosselton, Clay City, also serve as member-elected directors of the cooperative.

Wayne-White serves over 11,200 members in the eleven Illinois counties of Wayne, White, Edwards, Hamilton, Jefferson, Gallatin, Richland, Clay, Wabash, Franklin and Marion.

APRIL, 1977



Above: Wayne-White Counties Electric Cooperative members again found their annual meeting informative, entertaining and rewarding. In addition to officers reports, they were treated to special musical numbers and a large number of door prizes were awarded. Below: Helping distribute the many door prizes were cooperative employees, from left, Evelyn Edwards, Pat Gammon and Doris Stull.



Agriculture leaders

hear Governor for Century



Governor James Thompson talks with Senator John L. Knuppel, Virginia, left, and Senator Thomas C. Hynes, Chicago. Knuppel is chairman of the Senate Agriculture, Conservation and Energy Committee and Hynes is President of the Senate and Majority Leader. At the far right is Sid Hutchcraft, executive vice president of the Illinois Pork Producers Association, who served as master of ceremonies.

Robert W. Vander Pluym, left, manager of Clinton County Electric Cooperative, Breese, and Representative Dwight Friedrich, Centralia, discuss matters of interest to lawmakers and agriculture leaders.



Characterizing the program as one which could "potentially revolutionize food production as we know it," Governor James Thompson told over 330 persons attending the Illinois Agriculture Legislative Breakfast in March that he had recommended fiscal year 1978 commitment of \$3.7-million to a program which will cost about \$36-million during the next two years.

The Governor said the "Food for Century III" project "is to build the facilities that are necessary for expanded research efforts in the field of agriculture—research efforts directed toward increasing the overall productivity of agriculture."

The annual breakfast is sponsored by 32 commodity groups, including the Association of Illinois Electric Cooperatives.

Noting that agricultural programs, services and research are closely tied to colleges and universities, the Governor pointed out that many people still think of agriculture in the context of the classical dirt farmer of several decades ago, buying seed, planting it, reaping the crop and hauling it to market.

"Yet we know that the tremendous crop yields that result year after year are tied directly to research advances," the Governor said, "and we also know that farming, therefore, involves a continuing education aspect for farmers. This education occurs directly through the Cooperative Extension Service of land-grant universities and state agricultural experiment stations.

"Also, there is a need for professionals in the agriculture fields, such as the specialists involved in providing services to farming or running agriculture-related industries," he said.

Funds for a new veterinary medicine basic sciences building and an agricultural engineering building at the University of Illinois at Urbana-

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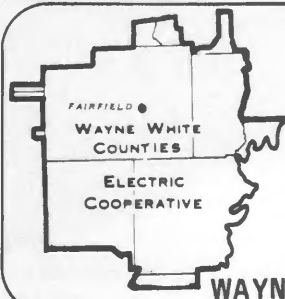
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Wayne-White News

WAYNE-WHITE COUNTIES ELECTRIC COOPERATIVE 618-842-2196 FAIRFIELD, ILLINOIS

Essay Contest Winners Announced

Six finalists in the "Youth to Washington" essay contest read their essays to a panel of judges at the Family Steak House in Fairfield.

Barbara Jo Long, daughter of Mr. and Mrs. William V. Long, Norris City, and Mark Mewes, son of Mr. and Mrs.

John Mewes, Bone Gap, were selected as winners and will receive all-expense-paid tours of Washington, D.C., June 11-18, 1977.

Others participating in the finals were Ida Reed, daughter of Mr. and Mrs. George Reed, Mill Shoals; Ellen

Bunting, daughter of Mr. and Mrs. Edward Bunting, Ellery; Steven Jones, son of Mr. and Mrs. Ivan Jones, Fairfield, and Keven Warren, son of Mr. and Mrs. Eugene Warren, Fairfield. The six students won tours of Springfield on "Illinois Rural Electric Youth Day" April 27.

Barbara Jo and Mark will join about 50 other high school students from other cooperatives throughout Illinois on Saturday, June 11. They will travel aboard an air-conditioned bus for the entire trip to Washington, D. C. During the week in Washington, the Illinois students will join approximately 1,200 other students from many states and will participate in "Rural Electric Youth Week," sponsored by the National Rural Electric Cooperative Association.

Many other planned program activities and surprises await their arrival.



Finalists in the essay contest, shown with Wayne-White President Robert Nolen, center, are, from left, Steven Jones, Keven Warren, Mark Mewes, Barbara Jo Long, Ellen Bunting and Ida Reed.

Winning girl's essay

By Barbara Long

It was 12 o'clock at night, and I was 200 miles away from home. I was on a cold, dark mountain road in an area about which I knew nothing, and my car had just died. The lights were out, and it was pitch black everywhere. I was scared to death! I kept looking for a light. Just one small beam of light at that time would have consoled me, but there was none. Thoughts were racing through my mind. Should I sit here all night or should I go for help? How far was the next hint of civilization?

Finally, I started walking, and just as I was about to give up hope, I saw what I thought to be a light on the top of a hill. I ran for all I was worth toward that great, magnificent beam of light. I topped that hill, and there it was, standing tall and proud on that mountain so still. I stopped in my tracks for just a moment to look at its splendor. It seemed to give off warmth and courage with each ray of light. I loved the

sight of how majestic and enduring it looked. It looked as if it could face any storm, great or small, and conquer it, and still be untouched, unrobbed of its beauty or its power. It seemed almost unreal to me how that one light could mean so much to any one person as it meant to me at that moment. It turned a disastrous nightmare into an unforgettable experience. Even to this day, I cannot believe how that one light gave me the courage and the strength I needed to keep on until I found help. So, ever since that day, there has been no argument with me about how necessary and helpful electricity is. Because, through a tragic experience, I learned the hard way, "The Value of Electricity."

Now, you may ask what does that have to do with "Cooperative Power for America's Future?" Well, it just goes to show that electricity is not just a thing of the past. It is a matter of the present and of the future.

Few would deny the American consumer's dependence upon electricity; a glance at the many electrical appliances in the average home would verify it. We, the American public, take instant electricity as much for granted as we do instant coffee or tea. Generally speaking, we know little, and concern ourselves less, about our nation's

supply of the one commodity we must have in order to function. We think we should be able to use all the electricity we want. Then, we gripe about the rising cost of the use of electricity. We have no legitimate reason to gripe, because the Rural Electrification Administration is a nonprofit organization, so they only raise their costs to meet their needs, not ever exceeding them. What we forget to consider, or what many of us may not ever know, is that the actual construction of electricity costs five times more than it did five years ago and that the increase in the borrowed capital would be raised four times higher in the next 10 years as compared to the last 10 years. The electric companies are therefore presented with a problem. They either have to raise their prices to keep the electric systems flowing, or shut down the process completely.

The rural electric systems alone serve more than 7.3 million farms, homes, schools, churches, irrigation systems, commercial enterprises, and other establishments in 2,600 of the 3,141 counties or county-type areas of the United States, as well as in Puerto Rico and the Virgin Islands. Altogether, America's rural electric systems serve about 25 million people; they

average 3.9 consumers and \$964 gross annual revenue per mile of line. So, imagine for just a minute the way things would get if the Rural Electrification Administration and other organizations like it let their facilities run down. One thing, for sure, life would be a lot different. The availability of electricity to the consumer would eventually come to a standstill. If we no longer could use electricity, think of the electrical appliances in the household alone we would have to give up. Of course, there are some we could do without, but then there are those which are necessary. You must admit that an electric razor, an electric toothbrush, a blender, and others are not absolute musts to the consumer. Then, on the other hand, the refrigerator, the range, the clock, the iron, and others are more than helpful; they are necessary.

Sure, all electrical appliances use

electricity, but as the producers become more advanced they find new ways to conserve energy such as; the blow dryer which we now use does not take as much electricity or take as long to dry hair as the older type of dryer did; the microwave ovens which are being used more and more often by housewives takes less time to cook food as does the conventional type of oven; and the appliances such as the presto burger and the hotdogger cook food items far faster than a conventional range does. If we keep developing faster ways of getting things done, then naturally some electricity will be saved.

Since the beginning of electricity, America has come a long way. But, we would not have progressed to the extent we have without the ambition of prominent men like President Franklin D. Roosevelt, Senator George Norris (Nebr.), and

Representative Sam Rayburn (Tex.), and the programs which they proceeded to get passed and started. We owe a great deal to them and to the Rural Electrification Administration, which not only brought electricity to the farm people of America but also to those in the rural areas which were not being adequately served.

To sum up, I would like to say that I do not know about everyone else, but as for myself, I am willing to sacrifice what I must to be able to have plenty of electricity. But, in the meantime, I hope I am not wasteful, because in the future there may not be enough natural resources to produce electricity freely, if we waste now. I would like to finish up with this one thought: The people of America must realize their need for electricity, and work together as a nation to make sure that there is enough power for America's future.

Winning boy's essay

By Mark Mewes

Electricity is probably the greatest unused hunk in history. There is an old saying, "We do not miss the water until the well runs dry." This saying of yesterday well applies to people and energy of today. It is just human nature to take things for granted, but this peculiarity of humans is one reason why we are in the middle of an energy crisis. We, as individuals, must all get serious about conserving energy if we are going to have enough to meet our growing needs in the future. After all, electricity is this country's lifeblood that has made it into the most prosperous and productive nation in the world.

Each and every one of us is directly affected by electricity. Have you ever thought what would happen if all the electrical power went off nationwide? This country's economy would plummet like a lead balloon; our progressive industry would come to a complete standstill; all vital operations would cease to function. In short, it would be the greatest downfall this country has had since the 1930's.

REA, the Rural Electrification Administration, is one party we can not blame for being in this situation. Many people, especially those living in rural communities and farms, would have not heard the welcome hum of electricity in their homes had it not been for REA cooperatives. Since REA was founded in 1935, it has flipped the switch for more than 25 million people in 46 states. As we have recently reached and passed our bicentennial, the cooperative has played an important role on our country's past and will play an even more important role in our future.

As our nation grows, industrial-wise, our energy output must also rise with it. REA cooperatives and other power companies are constantly trying to find new ways of producing energy more efficiently and abundantly.

Many people ask, "Why are we in a shortage of electrical power, and why is the cost rising so rapidly?" The first part is not difficult to answer. Everybody knows how much our national population is growing. To add to the problem each consumer is using significantly more electricity each year. From 1962 to 1972, the average kilowatt-hour consumption for people living in farm and residential areas rose from 401 to 754, nearly doubling in ten years. It is interesting to note that the price per kilowatt-hour did not rise but actually lowered from 2.44 cents to just under two cents. Also, the more people the more basic products we need, such as food, clothes and shelter. All of these require large amounts of energy to produce. The second part is somewhat more spread out. Electric power producers and distributors, such as REA cooperatives, have many strikes against them. Some of these problems the cooperative has little or no control over, such as inflation.

Inflation has hit everyone, including the energy industry. For example, it cost \$150-million to build a 1,000-megawatt nuclear power plant in 1967. By 1973, the same power plant cost \$500-million and it is projected that by 1983 the building cost would rise to over \$700-million dollars. Labor and construction materials, as well as many overlooked items, such as guy wire and nuts and bolts, have all drastically increased in price in the last few years. The inflation of these things also increases the price the cooperative has to charge to distribute the power on to your home.

Many people do not realize that it takes many key resources, such as petroleum, coal and natural gas, to produce electrical energy. All of these different ingredients used to produce power are in short supply and therefore expensive. If your electric cost rose the same amount as fuel oil alone, your electric bill would be nearly four and a half times what it is. Every year our natural resources steadily dwindle away. Already, more than half of our petroleum comes from foreign countries. It is projected that

by the year 2000 our natural gas and petroleum will be totally used up.

Now comes the most difficult question of them all. How are we going to get ourselves out of this energy crisis? There are many things that need to be done, REA cooperatives and others have already started. For example, finding new sources of energy, such as nuclear and solar energy. We must also start relying more heavily on the one natural resource we have more of than anyone else in the world, coal.

Energy conservation plans such as Project Independence call for the utility power to cut back on consumption of oil by one million barrels a day. To do this our plants would have to convert to use coal instead of oil. This alone would cost 500 billion dollars. Another item badly needed is a nationwide power grid, or, in other words, all of our country's electrical power linked together. With this we could send electrical power from where it is needed the least to where it is needed the most, but this would be costly. This is why we need an energy policy providing for an extensive research and development program.

This program would also be used for perfecting new forms of energy, such as solar energy, fuel cells, and many other forms of energy that need further development before we are able to use them effectively.

We badly need new forms of energy because if you take away our country's energy you have in essence unplugged America. So now you see why productivity and energy go hand in hand.

Our nation represents just six percent of the world's total population but we consume one third of the world's total available energy. This country's consumption of energy is doubling every 15 years. REA cooperatives see this need and are doing their part to see that we have enough energy in the future to meet our growing needs. This is why I said earlier we must all do our part.

The cooperative's number one goal is serving you, and you are the cooperative.

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Home weatherization loans

(continued from page 5)

Shuman, a member of Coles-Moultrie Electric Cooperative, Mattoon, told Illinois cooperative leaders, "We in the FmHA are very enthusiastic about this new loan program. We have had a weatherization loan program, but to be frank, we have not been effective." He said FmHA expects the new system, working through the electric cooperatives, to effectively reach rural residents who need help to finance weatherization of their homes.

"This will cost the cooperative time and money," Shuman said, "but it will make for a better living standard in rural America." He urged cooperative personnel to contact his office or any one of the 42 county FmHA offices in Illinois if additional information is needed by local boards of directors who must decide on program participation.

Jim Tucker, FmHA housing chief in Illinois, cautioned that not all cooperative members would be eligible to participate in the loan program even if they meet FmHA ownership and income standards. Under federal law, FmHA loan funds cannot be used for improvements on property located within metropolitan areas or in certain other densely populated areas. Tucker said each participating cooperative would be given a map outlining areas outside the FmHA loan-making authority.

In order to qualify for a home weatherization loan of up to a maximum of \$1,500, a borrower must be a member of a participating electric cooperative and must certify that he owns the property to be improved and that he has an adjusted family income of no more than \$15,600. The cooperative will process the one-page loan application, assist its members in contracting for the weatherization work to be performed and obtain the loan funds from the FmHA for disbursement to the member. The member will repay the loan plus interest over a period of up to five

ILLINOIS RURAL ELECTRIC NEWS

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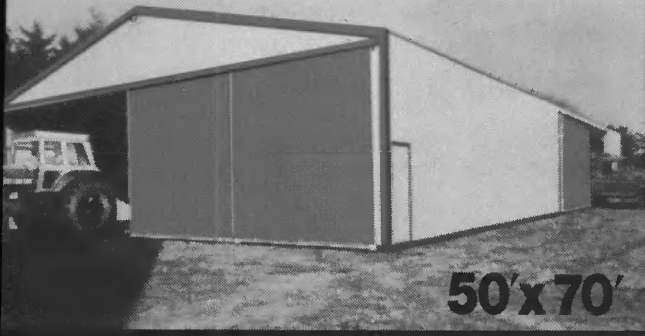
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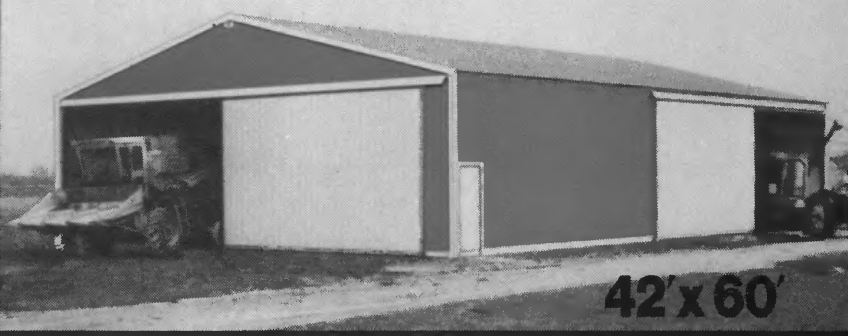
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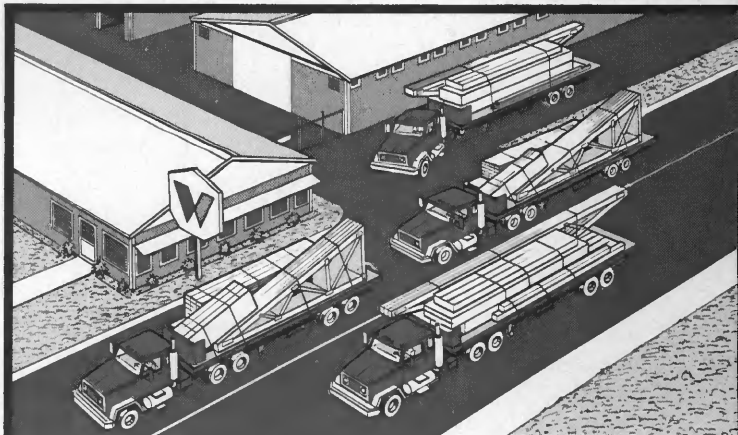
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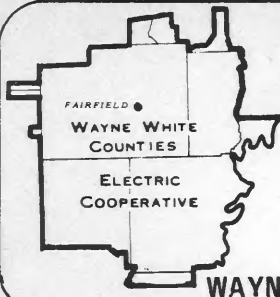
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Wayne-White News

WAYNE-WHITE COUNTIES ELECTRIC COOPERATIVE 618-842-2196 FAIRFIELD, ILLINOIS

Acting Manager's Column by Dale Warren

Your cooperative employees are working during a very heavy construction season to meet the needs of our consumers. Many are upgrading their service due to increasing electrical demands. Many are building new homes or purchasing mobile homes. We invite your inquiries and our staff is at your service. We are here to serve you, the consumers of Wayne-White Co-op.

We are completing the 69-KV transmission line, metering station, and substation to supply power for the Inland Steel Company coal mine east of McLeansboro and the surrounding area. We will be extending the 69-KV transmission to Diamond City, west of McLeansboro, and installing a substation next year to meet the continuing demands for electrical power.

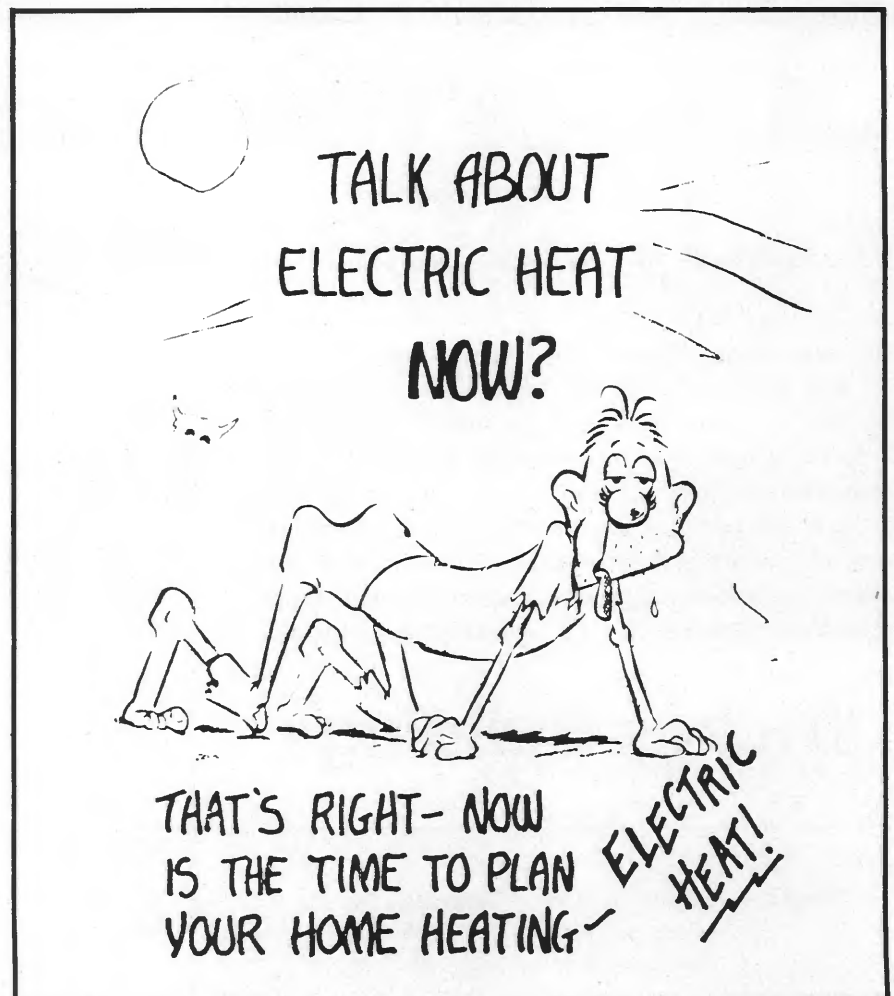
We have our spraying crew working this summer as we try to maintain control of the brush problems. By keeping the lines free, we serve you with dependable power, free of interruptions.

The annual meter testing program will start in August. We test some 1,500 meters every year. This enables us to cover the system every eight years. We take this opportunity to inform you of this program and ask your cooperation.

We are proud of Wayne-White Co-op. We have a fine group of

employees to serve you, our consumers. We are proud of our consumers. We appreciate your patience when we have an outage, your cooperation as we seek to meet your energy needs, your understanding of rising costs and higher utility bills, and your willingness to cooperate as we construct new lines along your property. This is a teamwork program and our goal is to keep Wayne-White a strong co-op bringing you electrical power at a reasonable cost.

Working together, we will continue the development and growth of your electric cooperative.



Insulate and save on the high cost of heating



Worried about high bills?

If you have forgotten last winter when temperatures dropped to the minus 20's, you will, no doubt, remember the high fuel bills that followed. We at Wayne-White Electric are not in the business of selling insulation or heating equipment, but we are in the business of providing service to our consumers. We want to help you keep your home operating costs as low as possible without lowering your standard of living.

How can this be done?

A quick look at your home will usually reveal areas of excessive heat loss. If all doors and windows are caulked and weather-stripped and storm doors and windows are installed, the next step would be to check the amount of insulation in your home. Insulation is used to keep heat inside your home in winter and outside your home in summer. It saves you money the year around and provides a more comfortable home.

The effectiveness of insulation is not only determined by its thickness but also by its density, weight, and other factors. This is measured in resistance, or "R-value." This R-value is marked on all insulation you buy, whether it is in batt, blanket, rigid board, or loose-fill form. The higher the R-number, the more effective the insulation. An insulation with an

"R-22" rating has a heat resistance value of twice one rated at "R-11." Higher R-values may be justified as the cost of energy increases.

For example, in a 2,000-square-foot home, one could expect a savings of about \$50 per year by increasing the ceiling insulation from R-19 to R-30. The majority of our residences were built when energy was relatively inexpensive. There were few incentives to encourage the conservation of energy; consequently, most homes do not have adequate insulation. More can easily be added and the cost will be paid back in lower heating cost in a few years.

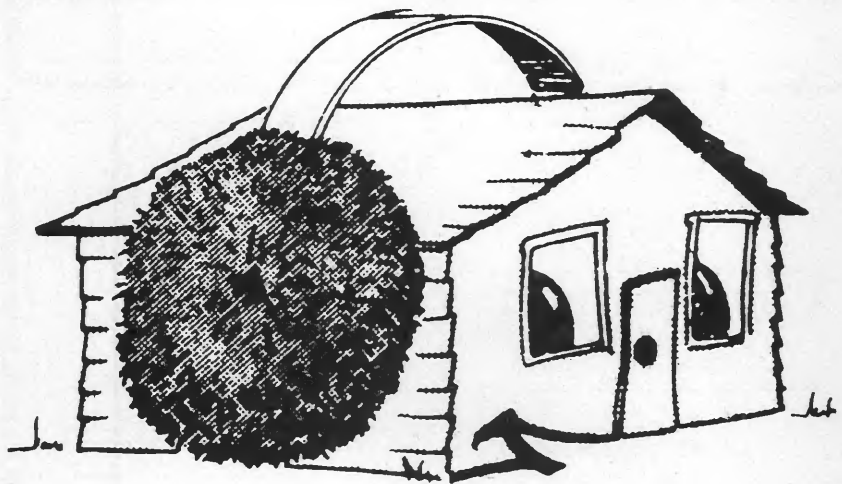
If you're adding blankets or batts to existing insulation in the attic, use insulation with a value of at least R-11. If available, use unfaced insulation with no vapor barrier. If unfaced kind isn't available, be sure to peel off the vapor barrier to avoid trapping moisture in the existing insulation. When using bags of loose-fill or blown insulation, cover the areas

between the joists on top of the existing insulation to a depth of at least six inches.

Wall and floor insulation is also very important in reducing the heating cost and can be installed in almost all existing homes. Unless correct methods are used, moisture problems could exist. We urge you to contact your Wayne-White Cooperative's Power Use Department for guidance and recommendations.

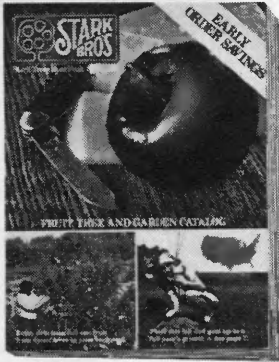
When building a new home, the construction cost is high. Therefore, we feel it is unwise to guess at the type or amount of heat needed for your particular home. What works well for one home and one family may not be the best system for a different home and family. Again, we invite you to contact our Power Use office at Wayne-White in Fairfield for professional advice in selecting your heating system.

Let's help conserve our nation's energy and at the same time conserve your savings.



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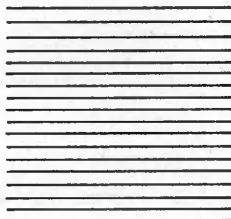
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Newman named Soyland manager

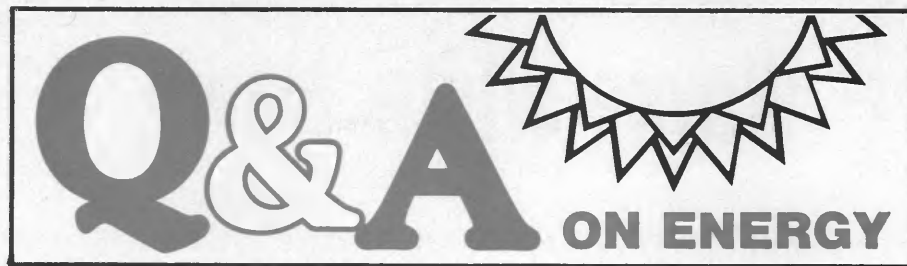
Royal B. Newman, former executive director of the Florida Keys Aqueduct Authority, Key West, Florida, is the new general manager of Soyland Power Cooperative, Inc. Announcement of the appointment was made by Soyland President Walter R. Smith of Champaign, manager of Illini Electric Cooperative.

The cooperative, which will be headquartered at Decatur, was reorganized in 1974 to provide the bulk power requirements for 15 central and south central Illinois electric distribution cooperatives. The power cooperative has entered into an agreement with Illinois Power Company to purchase and acquire 10.5 percent ownership of IP's Nuclear Clinton Power Station, now under construction near Clinton, Illinois. Soyland's cost is estimated at \$190-million.

As general manager of Soyland, Newman will be responsible for the cooperative's overall operations, negotiations and for assisting the 15 member-systems in securing, through purchase or self-generation, an adequate supply of power to meet the needs of the nearly 100,000 member-consumers served by the cooperatives. Consumers of the 15 member-cooperatives are currently using 1.5 billion kilowatt-hours (kwh) annually. Power costs for the 15 cooperatives last year exceeded \$16.8-million.

An electrical engineer with degrees from Auburn Community College and Syracuse University, Newman's professional experience includes serving as executive director/chief engineer for the Virgin Islands Water and Power Authority from 1971 to 1975 and five years as utility director/project manager for the City of Lodi, California.

In addition to his 20 years experience in power and water administration, operation, engineering,



Geothermal Energy

This is another in a series of questions and answers about specific energy problems and opportunities. They were prepared by the Electric Power Research Institute in cooperation with the National Rural Electric Cooperative Association.

Q: What is geothermal energy?

A: It's the natural steam, hot water and very hot rock inside the earth that is shallow enough to be tapped for generating electricity and other uses, such as heating buildings.

Q: How much geothermal energy do we have in the United States?

A: The U.S. Geological Survey estimates there is enough geothermal energy at practical depths beneath the earth's surface to generate electricity at present rates of use for the next hundred years. But we won't get even a fraction of that potential unless we solve some very tricky economic and technological problems.

Q: How much electric power are we generating from geothermal sources today?

A: About one-tenth of one percent of U.S. capacity is from geothermal sources, all of which comes from a stream field at the Geysers in northern California.

Q: Why haven't we exploited more of the potential?

A: The Geysers is the only place in America where we've found dry steam that can be commercially developed. Geothermal steam is

very economical because it is just piped from the ground into turbines. Geothermal hot water systems are more complex and maintenance is costly because the water is so full of dissolved minerals.

Q: How important are the various forms of geothermal energy?

A: Natural steam, which is so easy to use, represents less than one percent of the potential. Hot water accounts for another 10 percent. Geopressured water, which contains dissolved methane gas as well as hot water, represents 20 percent. Hot rock represents about 70 percent of total geothermal potential.

Q: Why aren't we getting more energy from hot water, geopressure and hot rock?

A: We're not sure of the economics of extracting energy from hot water and geopressure systems, and new technology is required for hot rock systems. The future of these geothermal sources will depend on how successful we are in bringing the cost of producing electricity from them down to compete with other fuels. We also are looking at them as direct sources of heat.

Q: How much research is being conducted?

A: The U.S. Energy Research and Development Administration (ERDA) is spending about \$400-million over the next five or six years. The electric utilities together are planning to invest

some \$2-billion in commercial geothermal development over the next decade if the basic technical problems are resolved and the economics are competitive. For example, rural electric cooperatives for several years have been involved in the Raft River experimental geothermal project in Idaho, partially funded by ERDA.

Q: Are there any other problems besides economics and basic technology?

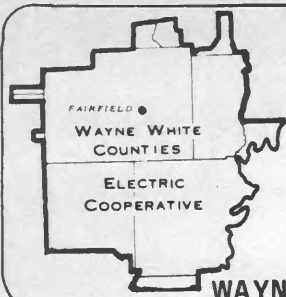
A: Yes, there is a pollution problem with contaminants in some steam and hot water systems, but that can be handled.

Q: Is geothermal energy found all over the nation?

A: If you go deep enough, there's hot rock all over the world. But within reach of present drilling methods and within the bounds of anticipated economics, usable geothermal areas are concentrated in the western states, Alaska, Hawaii and along the Gulf Coast.

Q: Given all the problems that still must be solved, how much of our electric power is likely to come from geothermal sources in the year 2000?

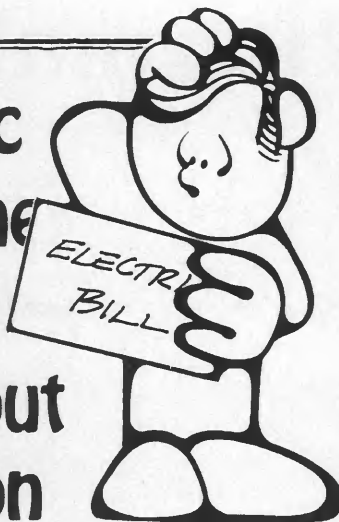
A: It could be as high as five percent or less than one percent. The actual amount will depend on how rapidly existing hot water fields can be developed and how successful we are in developing new technology that makes geothermal energy forms economically competitive with other fuels.



Wayne-White News

WAYNE-WHITE COUNTIES ELECTRIC COOPERATIVE 618-842-2196 FAIRFIELD, ILLINOIS

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Efficient use of electricity is energy conservation.

WAYNE-WHITE COUNTIES
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Plan Power Needs Now

If you are considering the installation of grain bins this fall, please let your Wayne-White Electric Cooperative know as soon as your plans are finalized.

It is important that we work with you in planning your power needs. There are two major issues involved in this type of installation: the availability of power at the proper voltage when you need it and the best location from a safety point of view.

Last fall our crews did a reasonably good job in keeping up with the service revisions and line extensions needed to supply the power to the new installations. This fall looks as though the work load may be even greater. Therefore, we must have sufficient notice in order to guarantee you service when you need it. Before you purchase motors and controls for your system, be sure and contact our engineering department for advice on proper phasing and proper voltage; otherwise you might purchase motors and controls for which we could not supply power. Our policy states, "Motors having a rating in excess of 15 horsepower should be three-phase." Be sure to check with us to see if three-phase is available at your location and, if three-phase is available, talk with us about the three-phase contract. Some of our consumers have been misinformed thinking that three-phase power cost is less than single-phase power. This is not true. Three-phase is



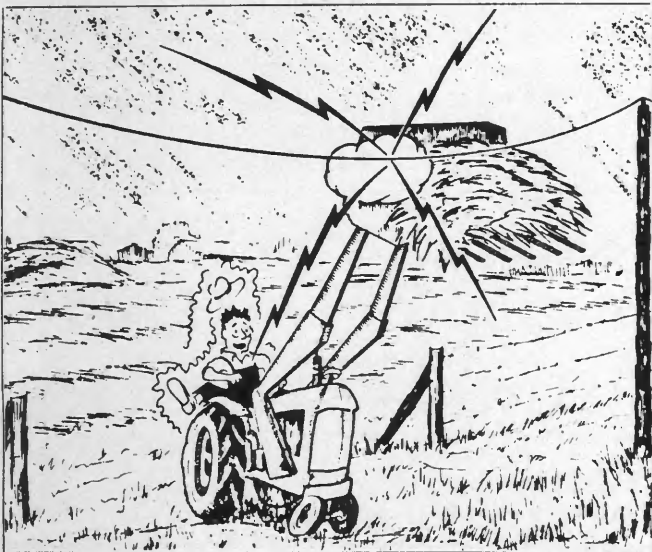
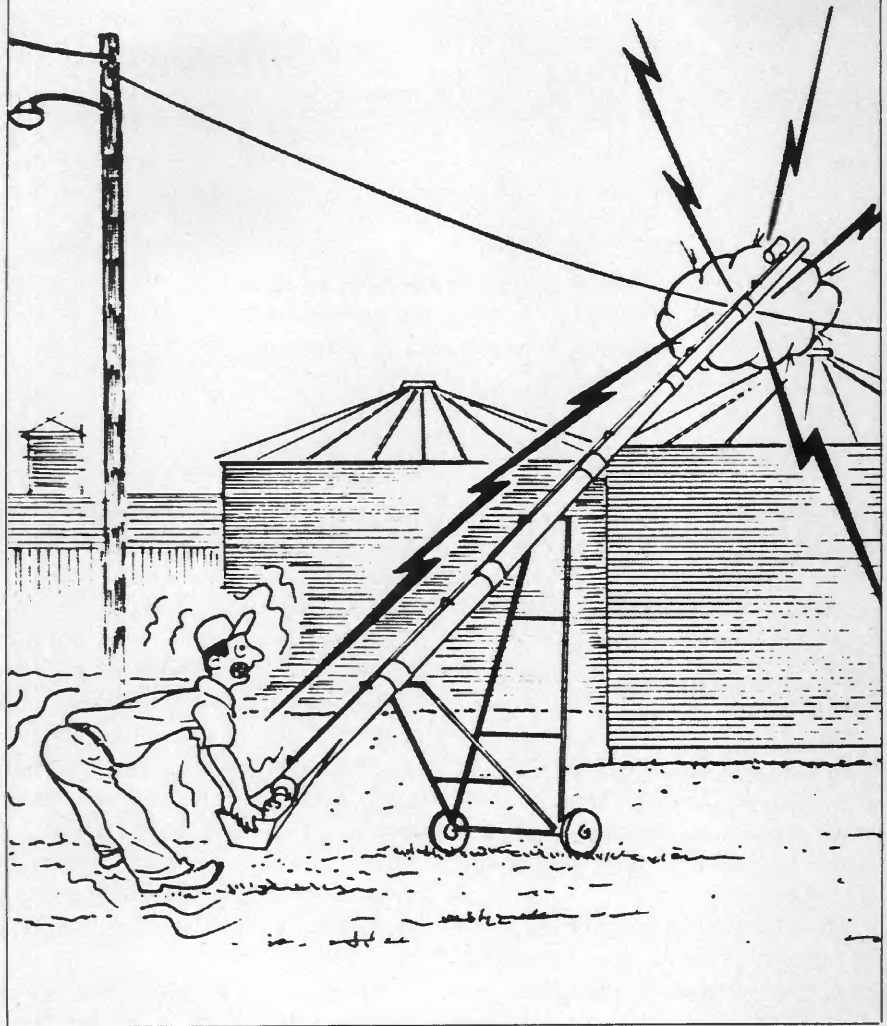
© NRECA

the best service for large loads, but it also costs more. Contact us and we will help you decide what is the best for you and your cooperative. Most important, don't wait until September or we may not be able to supply the power you need for your new grain dryer.

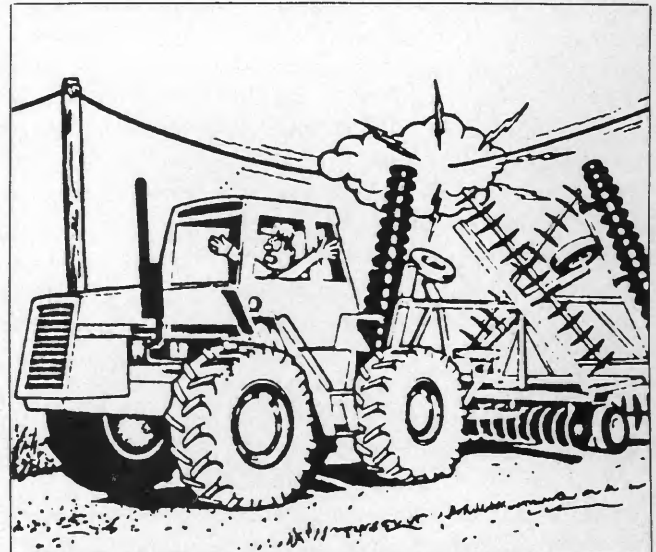
We urge you to "Look up and live." We can all bear witness that electrical hazards on the farm are on the increase. In many cases the grain bins are under construction when we arrive on the scene. Too often we find these structures under or very close to high voltage power lines. The power lines surrounding your fields and farm buildings are NOT insulated. Should a grain auger or other farm equipment come in contact, the implement would become energized, resulting in death or serious injury to the operator and to others nearby. Let us help you plan the location of your operation for safety benefits. Extra precaution must be taken when using augers and moving tall farm machinery under or near high voltage lines. Grain bins certainly don't belong under power lines. Warn your neighbors of the danger in these situations and suggest that they be corrected. Check your own property for hazardous conditions and be alert for overhead power lines not only during crop harvest but whenever large equipment is moved on the farmstead.

Live to enjoy the fruits of a bountiful Illinois harvest.

LOOK UP!



Many loaders rise high enough to contact overhead wires. Keep your loader in a low position whenever possible and allow for uneven ground and bouncing of the machine.



As modern machinery gets larger and taller, the risk of accidents with overhead wires increases.



Energy Conservation Now

Save in the kitchen

This is another in a series of articles designed to help you save money through the wise and careful use of electricity.

Most of your utility bills will go for comfort conditioning, and that's where you can effect your greatest savings. If you've weather-stripped your home and insulated it, you'll have taken a big step in keeping your bills down.

Water heating is next, and after that your savings will come in grudging little nibbles, but there are still many ways you can save energy around the house as you cook, wash clothes and do the dishes.

Of course, food preparation takes energy, and you can save by making sure your refrigerator and freezer are in good condition, especially the door gaskets. Close a piece of paper in the door and try to pull it out. If it slips out easily, your gaskets need replacement. You can save a little, too, by opening the doors as few times as possible, and a little more by defrosting regularly. It is wise to vacuum your refrigerator/freezer coils occasionally, making sure to unplug the appliance before poking around with the crevice cleaner. The coils are usually attached to the back of a refrigerator, or in the bottom section.

The kitchen range is another place where small savings can add up to big annual savings. Be sure to cook on elements that are about the same size as the pan, and certainly no larger. Incidentally, glass or ceramic cookware is a little more efficient than metal. Use a tight-fitting lid, unless the

recipe calls for cooking uncovered, and shut the unit off a few minutes before the food is completely cooked. Residual heat will do the rest.

Ovens take a lot of current. For that reason, you'll be wise to use your oven efficiently, and bake an entire oven full of food at a time. You can store the rest for later use, being sure to cool it to room temperature before placing it in a freezer or refrigerator. Or, if you have a small countertop oven, it is more efficient—if you can only bake one item anyway—to bake it in the smaller unit.

Probably one of the biggest mistakes people make in baking is peeking. When you open the oven door, as much as a quarter of the heat is lost, the thermostat signals for more, and the oven's heating element pulls additional current. Cook by time and



temperature! Be sure to preheat only a few minutes, and you can turn the oven off a few minutes before the cooking time is up. With a large roast, you can shut the oven off as much as 30 minutes before cooking time is up, if you can resist the temptation to peek.

These energy conservation measures won't spell the difference between wealth and poverty, but they will save you a few dollars a year, and they'll help conserve valuable natural resources, too.

To: A.I.E.C. Member Services Department
P.O. Box 3787
Springfield, Illinois 62708

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*Light
aircraft repair
is his
enjoyable work*

(Continued from page 5)

have anybody who can do recovers on the older fabric-covered planes, and I love the heck out of that kind of work. I kind of got into it as a fun hobby," he says," adding, "I really enjoy doing the very kind of work they don't want to be bothered with."

Max is expanding his operation slowly, working on the hangar or airfield, as his work load permits or requires. "At first I kept all the planes I was working on in the hangar, but there got to be too many, so I put a couple of tiedowns outside. When I get more airplanes than I have space for, I go out and put in another tiedown.

"I've got a set of plans for installing runway lights," he says, "and I hope to do that soon, and I'll have a fuel setup in the very near future, too."

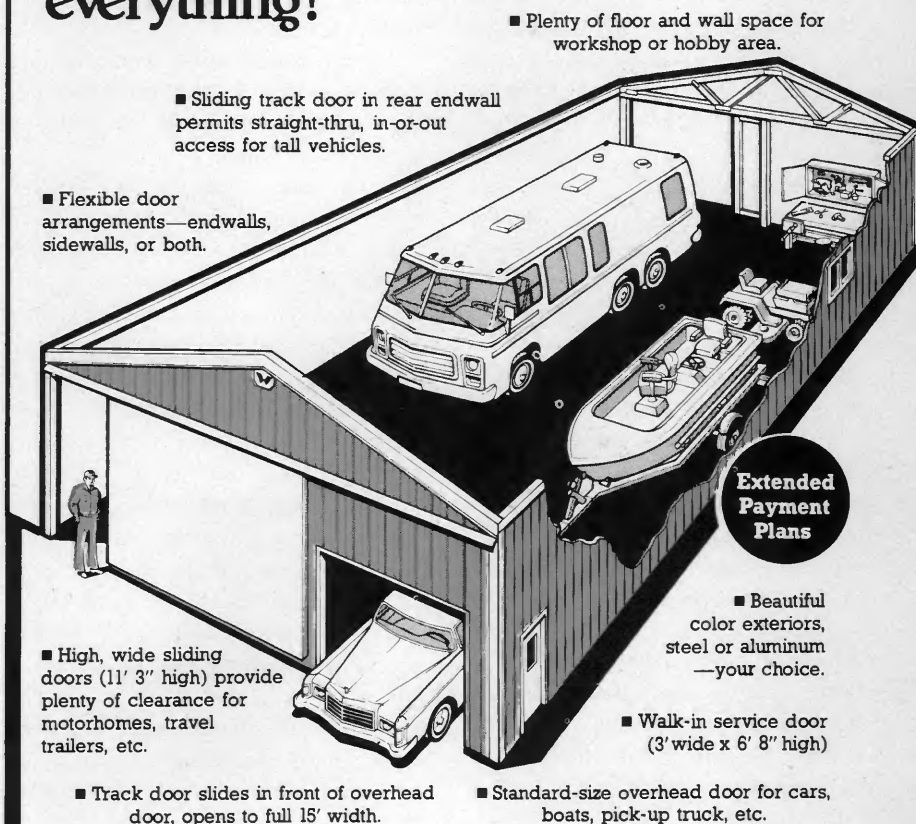
Max notes that interest in aviation seems to be picking up in Brown County. "As far as I can tell, there are about 155 light plane owners in Brown County and the adjoining counties," he says, "and that number's increasing every day. There's an awful lot of interest in aviation around here, and I think my shop has helped spark it because it exposes many local people to aviation. Many of them had never really become interested before because they had never thought about it.

"There are a lot of people who get almost a fever when they get around airplanes," he says "and that seems to be what's happening here. There's even talk about a flying club, where people will be able to go in together to buy an airplane and take flight instruction."

It looks as though grass roots aviation is taking off in Brown County.

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see the Man in the Red Car!

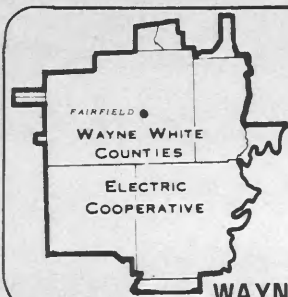
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Wayne-White News

WAYNE-WHITE COUNTIES ELECTRIC COOPERATIVE 618-842-2196 FAIRFIELD, ILLINOIS

Cooperative Services

Is your electric bill higher compared to last year at this time? Unless you have exercised some extreme energy conservation measures, it probably is. Some of the big reasons why your electric bill is up are:

Power Distribution Costs Are Higher. Transformers, poles, power lines and all the hardware needed to build new sections and replace old and inadequate lines have increased in price.

Power Production Costs Are Higher. The generating facilities needed to produce the electricity and fuels... coal and oil... needed to generate electricity have doubled and tripled in recent months.

Special Equipment Costs Are Higher. The price of service vehicles has gone up greatly. Bucket trucks, special hot line trucks, and even the small pickup trucks used by our service men are much more expensive now.

Other Expenses Are Higher. The miscellaneous, necessary items for day to day operations inside and outside the office are up too. So are wages, insurance, and interest rates on borrowed money.

It simply costs more money—a great deal more money—to operate an electric system now than it did in past years. These are some of the big reasons why your electric bills are up now, and why they are likely to remain up. No one can sell electricity for less than it costs to make it available, not even a consumer-owned electric cooperative. That's why we are in a bigger business than just selling electricity. That's why our consumers are the people who own the system. And that's why we are working to provide the services to meet our

peoples' needs and help them solve their problems.

Energy conservation is one way to help but energy conservation does not mean stop. To use energy conservation means many things.

It means preventing energy waste—turning down thermostats on winter nights or while away, driving within the speed limit, turning off unneeded lights. It means using energy more efficiently. Energy conservation does not mean lowering our standard of living or doing without the good things of life. It sometimes means an alteration in our living habits to prevent waste. Even with all this, our kilowatt-hour consumption continues to climb higher and higher.

We often times are not aware of the additional electric equipment added to our system each year, or that much of the equipment that is replaced when worn out, or failures occur, is replaced with bigger equipment or with more automatic devices that require more energy. With this understanding in mind, it's doubtful that your bill will ever be going down. What can we do?

We are at your service. We want to give you the best service possible. Let's list just a few of the free services available to you through your cooperative:

1. Electric heat planning: thinking about building a new home, consider electric heat. We'll do the design work for you. Don't guess at the amount to install, you have too much invested to guess. Maybe you want to convert your existing heating system to electric. It can be done and we will be happy to give you direction. We must know these things in order to upgrade our service. So, call us, so we can help

you in your planning.

2. Low voltage problems: It may be your wiring or it may be the cooperative's side of the meter. Either way, we'll locate the problem. We need to check it out.

3. Three phase: Be sure to contact us before purchasing any three phase equipment. Many people call on us for three phase service after buying three phase equipment, only to find out that three phase may not be available at their location. Not all lines are three phase; you need to know before you buy.

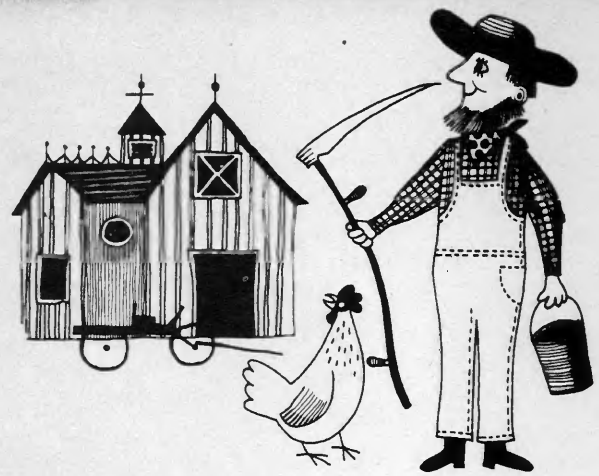


The "Electric" Smile

You've seen it . . . all over the place . . . Modern electric living turns it on! And it's our happy job to have a part in turning modern electric living on.

Yes . . . we really are in the happiness business. Our whole purpose is spreading electricity around so our consumers can work better and live better. It's a nice business. Serving people. And we want you to know we love to see you smile.

Farm Wiring Hits the Dirt!



For some years now, industrial and residential builders have been burying electrical wiring for their subdivisions and other projects underground. Why shouldn't farmers benefit from the advantages of underground cable to achieve the most reliable electric service possible?

Many farmers in electric cooperative service areas throughout the state are doing just that. Illinois electric cooperatives report that a growing segment of the agricultural community is requesting the installation of underground wiring on their farmsteads. New wiring to crop drying and grain handling equipment as well as wiring which increases the capacity of existing electrical facilities to accommodate larger loads — it's all going underground with growing frequency.

Advantages Are Many

For the farm builder, many electrical wiring problems are solved by laying all circuits underground after running wires down from a main distribution pole at the edge of farm property or at some other desirable location. Cables can then be trenched underground from one central overhead entry location.

Underground electrical circuits to farm buildings, grain dryers, security lights and other outdoor equipment are economically feasible on farms for a number of reasons, according to W. S. Allen, Texas A&M University agricultural extension engineer. Swinemen, poultrymen, dairymen and many other different farming operations achieve particular benefits from underground wiring installations.

Underground wiring:

- Does away with clearances and restrictions where lines must cross driveways on which high loads and equipment must be moved.

- Eliminates the danger of insulation deteriorating on electrical wires and causing "shorts."
- Eliminates the danger of tall derricks, long grain augers and the like contacting high voltage lines and seriously injuring someone.
- A safety element is introduced in the farm building where underground wires rise above ground and pass through conduit directly into the service entrance.
- Properly installed underground wiring will not be added to haphazardly, as with overhead wiring hanging in the open — overloading of wiring system is averted.
- Wires are not broken by snow and ice or falling trees during a storm.
- The aesthetic value of the farm is improved when sagging overhead wires are eliminated. The skyline is clear except for buildings and trees.
- It improves the appearance of the premises, promoting neatness in other areas around the farm.

Favorable Relative Costs

Engineers at Idaho State University point out that in addition to these advantages, the relative cost of an underground installation is favorable compared to overhead which takes a great deal more time to install.

The types of wires and cable used for underground installation are very likely to cost more per foot than those used for overhead construction. On the other hand, labor costs can be less because the installation takes less man-hours. Installing overhead poles

and line is more expensive because of the greater amount of labor time required.

Must Meet Codes

One important fact should be kept in mind at all times when planning an underground installation — the installation must comply with local electrical codes, local electric cooperative standards and the National Electrical Code.

Usually power comes in from outside transmission lines and poles at 7,200 volts and transformers are used to step down the voltage to 120-240. Most underground conductor is of the direct burial type. Conduit is seldom necessary except for physical protection.

Aluminum conductor is more economical than copper — it costs about one-third as much and should be used wherever the electrical code will allow. Each underground connection and terminal must be treated with a special graphite contact compound to prevent oxidation.

Electric cooperative personnel are available to aid members planning to install underground wiring systems. Your member service department has the technical specifications and recommended conductor and conduit sizes, trenching procedure, connections, etc. They are experienced in various phases of underground cable installation.

If you plan to install underground electrical cable, either for a new building addition, for heavying-up or replacement of overhead with underground, contact your cooperative's member service department.



Old barn

For a long time, Gary and Diane Richards were bothered by the fact that they had no particular use for an old barn on their 100-acre farm near Casey in Clark County. They thought of several possible uses for the structure, but it was a while before they came up with just the right idea.

"There were several old buildings on the place that we had torn down instead of fixing, and it really bothered me to let it go too, but it was a liability, just standing there," he says.

"For a long time we thought of converting it into a house," the former junior high teacher relates, "and it would have made a great house, too, but that wouldn't have made us any money."

Years ago, he says, he had thought of turning it into a teen center, "When I was young and crazy," he laughs, but

is no longer a liability

Above: Old farm equipment lines the walls of the Richards Farm Restaurant, and placemats carry a pictorial minihistory of barns in America. Richards notes that he spent countless hours searching for the artifacts for the walls, and that old siding from four barns went into the interior walls of the restaurant. At right: Gary and Diane go over the morning's receipts.



**Joint NRECA-CFC
committee**

(continued from page 11)

award for its work with foreign participants during visits to the cooperative. Wayne Laning, Mt. Sterling, Adams president, accepted the award on behalf of the cooperative.

Searls also was a panelist during a general session discussion, "Coping with Conservation." The Illinois NRECA Director, Raymond Rusteberg, Valmeyer, presided during the panel discussion. Robert Wagner, Burnside, District 5 CFC Director, presided during the CFC annual meeting. Wagner is a director of Western Illinois Electrical Coop., Carthage.

Stanley Greathouse, Johnsonville, past president of the Association of Illinois Electric Cooperatives and Illinois NRECA Director-elect, was named Region V Executive Committeeman. Greathouse is a director and vice president of Wayne-White Counties Electric Cooperative, Fairfield.

Three Illinois women were active. Mrs. Iona Greathouse, Johnsonville, was introduced as the Region V Chairwoman. Mrs. Adeline Rusteberg, Valmeyer, was a member of the woman's nominating committee. Mrs. Margie Mohrman, Camp Point, was reelected Region V Committeewoman on the NRECA Women's Action Committee.

The need for developing power supply capability to meet the requirements of electric cooperatives was illustrated by David A. Hamil, Administrator of the Rural Electrification Administration (REA). Hamil said a recent survey indicated that kilowatt-hour sales of electricity by electric cooperatives are rising at rates ranging from eight to 12 percent, compared to six to nine percent for commercial power companies.

While urging electric cooperatives to continue their practice of energy conservation, Hamil went on to say, "Intensified conservation efforts alone are not enough to meet our electric energy needs." He said electric cooperatives should use all possible

(continued on page 20)

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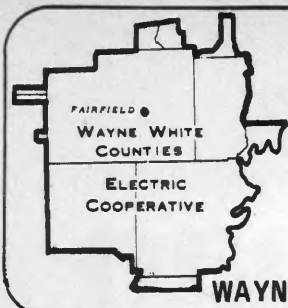
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IR 10



Wayne-White News

WAYNE-WHITE COUNTIES ELECTRIC COOPERATIVE 618-842-2196 FAIRFIELD, ILLINOIS

High Electric Bills

During a recent pay period we were surprised at the number of people who came through the doors of Wayne-White Electric's office with fire in their eyes because their electricity bill was higher than they had expected. We were also pleased at the calmness of our cashiers as they tried to settle jangled nerves. We are very much aware of the wholesale power cost adjustment and how it fluctuates, causing instability in the cost per kilowatt-hour, but the higher bills come about primarily because of increased usage of electrical energy. We wonder how many times people question their service station attendant because they drive more miles than they plan or because their car isn't getting as good mileage as their neighbors.

We want our people to know that our service is available to all our members. We want our consumers to use electrical power as they need it or want to use it, but keep in mind that we must pay the price for that energy used and recognize that it isn't Wayne-White Electric's fault if our kilowatt-hour consumption is high.

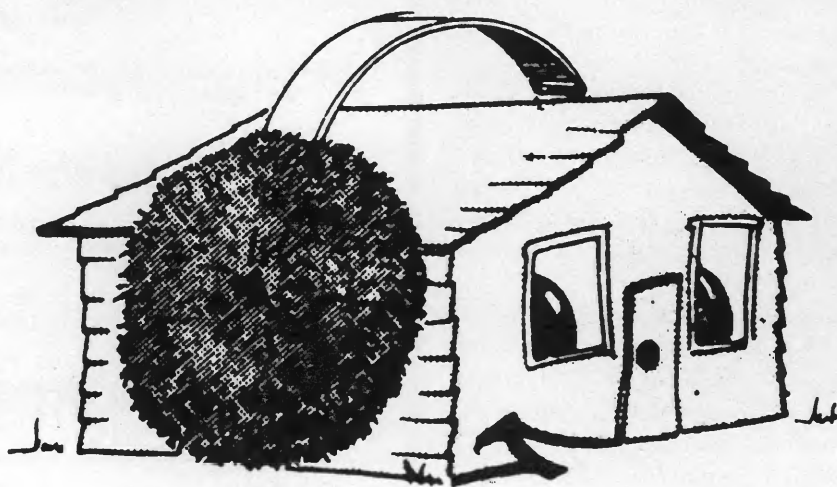
Too often we think if we are gone from home our meter stops or slows down considerably. Yet, when we reason it out, we will remember the automatic devices continue to operate while we are away, such as freezers, refrigerators, pumps, air conditioners or heating equipment, night lights, and many others. Many times we compare our electricity bill with our neighbors and yet this is not a good yard stick for measuring. Our house payments are not the same, our telephone bill, gasoline bill and other bills are not the same. No two families are alike, even if

the number in the family is the same.

What we are saying is that no two people are the same, we have different living habits, therefore, our electrical consumption will be different. Sometimes we get careless and forget to read our meter on the same day of the month. Let's say we read it one week late. This will make five weeks usage on one bill and three weeks usage on the next. It's important that the meter is read on the same day of each month for uniform billing. Often times, upon receiving a high bill, we accuse the meter of being unreliable and running fast. Quite the opposite, the meter is a precision instrument more accurate than a watch, more accurate than the meter on the service station pump where we gas up and more accurate than the gas and water meter

measuring the amount used in our homes. Even though meters are very accurate, practically every condition affecting a meter will cause the meter to slow down. Wayne-White Electric has a regular inspection program and the possibility of a fast meter is very remote.

What is the possibility of our meter jumping 1,000 kwh? We are told about one in five million times. There is always the possibility of faulty appliances or poor wiring running the bill up and this is not too difficult to check out. But most of our success in lowering our electricity bill will come when we go home and begin to look for ways of conserving electrical energy. It's easy for us to blame our power supplier when our own neglect is the greatest contributing factor.



INSULATION HELPS YOUR HOME AND YOUR POCKETBOOK FIGHT INFLATION

What's Missing from This Meter?

The Seal Is Gone

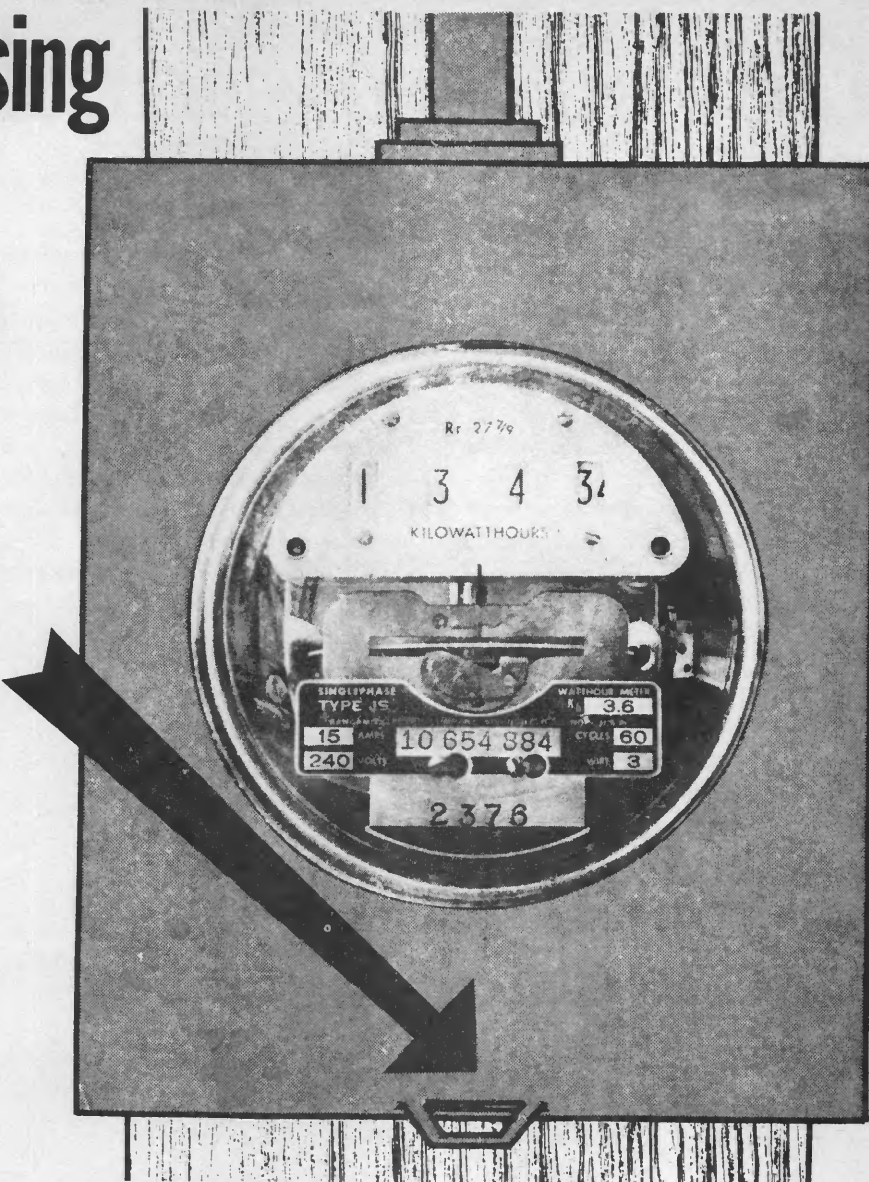
Meter Seals Are Like Locks

Illinois Revised Statutes,
Chapter 111 2/3, Paragraph 382:

Any persons who, with intent to alter, obstruct or prevent the action of any meter provided for the purpose of measuring and registering the quantity of electric current consumed by or supplied to, or electricity which may be consumed or utilized without passing through or being registered by a meter or without the consent or acquiescence of the company shall be guilty of a Class B misdemeanor. A class B misdemeanor carries a penalty of up to \$500.00 fine and up to six months imprisonment.

Seals which your cooperative places on each of its electric meters are the same as the locks on your doors. Your cooperative affixes these seals on meters to protect both the member-owner and the cooperative. Breaking the meter seal is the same as breaking a door lock, an illegal entry. AND, it is extremely dangerous to break a meter seal because wires located at the meter base are energized. Serious injury or electrocution could result if contact is made with these meter wires.

When your cooperative's personnel observe a meter without a seal or with a broken seal, they automatically suspect that the seal has been broken for the purpose of removing the electric meter. Only Wayne-White Electric employees have authority to



break a meter seal. Your cooperative must assume that a meter found without a seal has been tampered with.

Your cooperative is a nonprofit organization, owned and controlled by its local members. One member taking electricity without paying for it contributes to the overall increase in the price of electricity for ALL members. Since your cooperatives purchases its electricity from a power supplier and passes it on to members through its distribution system, the membership actually pays the real cost of providing electric service. Honest members who pay for their own electric energy use also pay the electric bills of dishonest members who tamper with meters or take electricity fraudulently by sending in meter readings showing less kilowatt-hours

than were actually used.

We believe that our members are honest. We need the help of the majority to police the small number of members who are not so honest. Any member who knows or learns of someone taking electricity fraudulently or tampering with one of the cooperative's electric meters in order to steal electricity should contact the cooperative immediately so that the proper authorities can take action.

If it becomes necessary for an electric meter to be removed, such as during initial hook-up of the safety disconnect below the meter or because of necessary wiring changes, you are responsible for notifying your Wayne-White Electric Cooperative in advance, as employees are the only ones to remove these seals.

Despite ups and downs, h

Tom Marckese has one of those hobbies that has its ups and downs. He goes up in airplanes and jumps out of them, for fun and profit, as they say. He has jumped from as high as 13,500 feet.

Marckese, who is a member of the Trackers, Inc., of Annawan, has been in the sport parachuting game since about 1970, or thereabouts. He and his wife Mary Lynne, are members of Farmers Mutual Electric Company, Geneseo.

Actually, his involvement in the sport came about as a combination of business and pleasure. He was in the Marine Corps, a member of an air and

naval liaison gunfire team; members of such teams are required to be qualified parachutists.

"I found that I liked parachuting," Marckese says with a grin, "so I joined the Camp Pendleton Sport Parachute Club. All told, I've made about 1,100 jumps since then," he says. The Marine Corps required qualified parachutists to make two water landings, and a night jump, too, but Marckese's activities are not quite so lively now, even though they certainly cannot be considered mundane.

Sport parachuting today generally centers around two activities—performing acrobatics after the

'chutist jumps and before he opens his parachute, and attempting to hit—or come very close to—a tiny target.

"The target's four inches in diameter," Marckese says, "or perhaps I should say 9.84 centimeters, since sport parachuting is an international activity. Measurements are metric because of that."

The Trackers operate out of the Harold Thompson farm at Annawan, and they occasionally perform exhibitions for shopping center promotions and such activities. "Actually, we could do more jumping just at the farm," Tom says, "but the exhibitions help pay for the airplane and publicize the club."

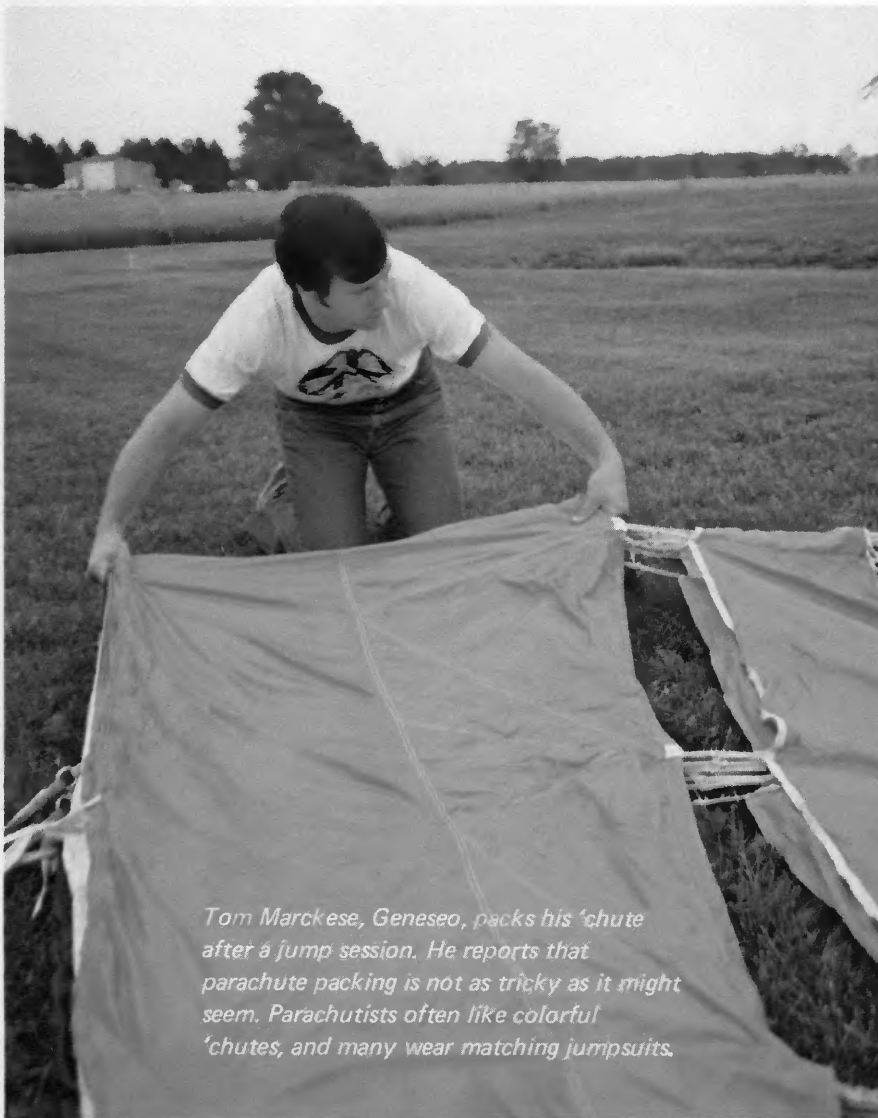
Members, he notes, can join the club by paying a \$1,000 fee and then jump all they want after paying a \$30 monthly fee. Members who choose this plan hold part ownership in the airplane. "I've been a member since September, 1972, and I've gotten my money back several times over," he says.

The club owns a Cessna 205 Skyvan.

Members with less-expensive tastes can pay \$200 a year and pay the \$30 monthly fee and jump all they want, too, he says, but they hold no ownership interest in the airplane, and have no say in how the club is run.

"We keep track of how many jumps we make," he notes, "and we write each jump down in a log book. Each book has enough spaces for 150 jumps, and I'm working on my seventh book now. Another thing we keep track of is the amount of free-fall time we build up. Free-fall is that time after you leave the aircraft and before you open your parachute, and I have almost four hours of free fall time," Marckese says.

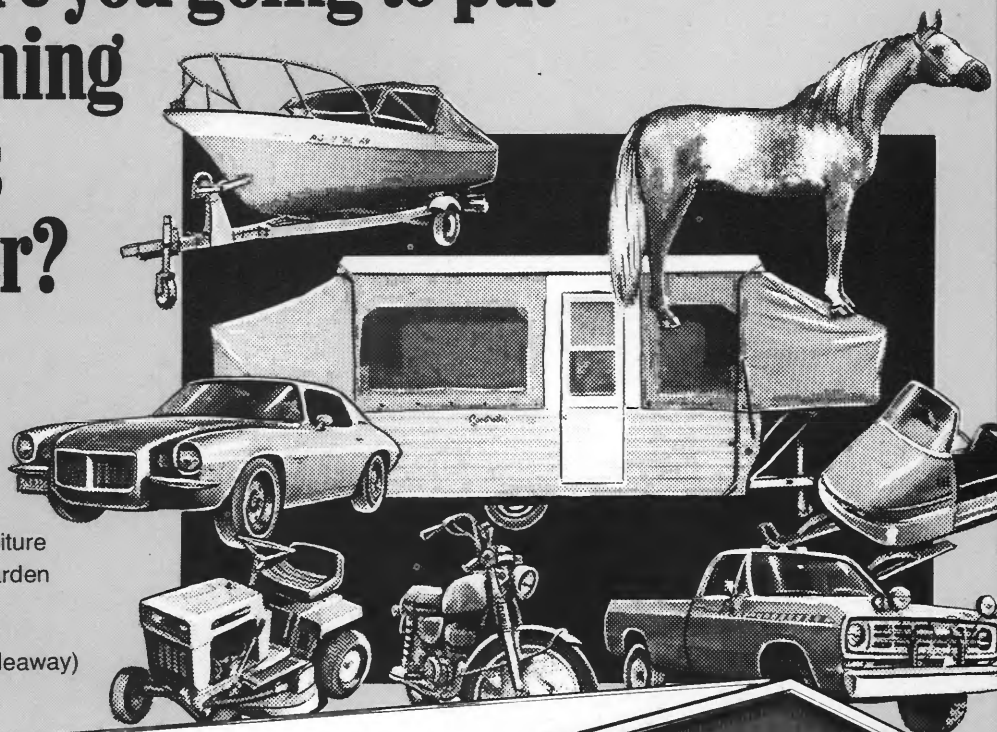
Marckese uses a square parachute as a main chute and has a round reserve chute. "This is my fifth main chute," he says, "and this one and my last one were square. I like them better because you can pack them smaller and



Tom Marckese, Geneseo, packs his 'chute after a jump session. He reports that parachute packing is not as tricky as it might seem. Parachutists often like colorful 'chutes, and many wear matching jumpsuits.

Where are you going to put everything this Winter?

- Trucks
- Cars
- Boats
- Bikes
- Campers
- Trailers
- Outdoor Furniture
- Lawn and Garden Equipment
- Snowmobiles
- (A Handy Hideaway)



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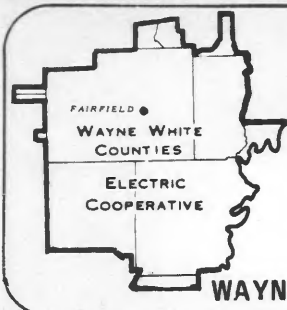
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Wayne-White News

WAYNE-WHITE COUNTIES ELECTRIC COOPERATIVE 618-842-2196 FAIRFIELD, ILLINOIS

Degree-days influence heating costs

When we calculate the heating cost for an all electric home, we are often asked to give an estimated heating cost on a monthly basis. This, of course, would depend on the severity of the winter and the number of degree-days.

The degree-day is a unit of measurement used by weather stations in recording the severity of the winter or summer. With the recording of the past 40 years to use as a base for the average number of degree days, a reasonably accurate estimated cost can be established on a given home.

A degree-day is the difference between a fixed set-point and the daily mean temperature. The fixed set point used is 65 degrees Fahrenheit, which is the temperature of the outdoors when a home normally needs no heating. This 65 degree temperature is called the base. The mean temperature is the midpoint between the high and low for the day. Thus, the high temperature of the day is added to the low temperature of the day and the sum divided by two to obtain the mean daily temperature.

During the heating season, the mean temperature is subtracted from the base (65 degrees) to arrive at the number of degree-days for that one day. For example, if the temperature

were to drop to five degrees during the early hours of the morning, and go to 35 degrees during the day, the mean temperature would be 20 degrees. The 20 degree figure would then be subtracted from the base temperature (65) thus arriving at 45 for the number of degree days for that one day. Adding the figures each day for the month would give the total heating degree-days for the month. Adding the total heating degree-days for each month would give the total heating degree days for each year.

The annual degree days for the Wayne-White Electric Cooperative area is 4,500, based on the average of the past 40 years. The heating season for the year 1975-76 total 4,381 degree days, an above-average temperature of 119 degree days. The heating season for the year 1976-77 exceeded the average degree-days for the year by mid-February and totaled 5,710 degree days at the end of the heating season.

Calculations for heat loss in your home are based on the "R" factor of the insulation (resistant to heat), exposed walls, square feet of glass, number of doors, type of construction, infiltration, number of degree days and other factors.

About 60 percent of the annual heating fuel will be consumed in December, January and February. About 25 percent will be used in November and March and the remaining 15 percent will be used at the beginning and the end of the heating season.

The heating costs vary as the number of degree-days vary. This is why we are able to anticipate what electric heating usage is expected to be. Higher degree-days equal higher electric usage.

Capital Credits Refunds

Members who received electric service from Wayne-White Counties Electric Cooperative during the year 1956 will be receiving patronage refund checks the first of December.

The checks will range from a few dollars for the smaller users to several hundred dollars for larger electrical users. The refunds will total \$244,783.

The Value of a Farmer



Longfellow could take a worthless sheet of paper, write a poem on it and make it worth \$6,000... that is genius.

Rockefeller can sign his name to a piece of paper and make it worth millions... that is capital.

Farmers, with the help of God, can take soil and seed, wind, rain, fertilizer, machinery and labor and produce enough food for 55 people... that is a miracle.



THE DAY THERE WAS NO THANKSGIVING

November 25, 1776.

The British had just captured 3,000 Americans; our northern forces were in retreat. Winter was setting in. Tired and dispirited, with precious little to be thankful for, the Continental Army struggled on . . . and on.

Because they did, thirteen colonies became the nucleus for a great and powerful nation. Because they did, we have a heritage of strength and indomitability on which to build for the future.

Because they wouldn't give up, we Americans have much to be thankful for on this 24th day of November, 1977.



Wayne-White Counties Electric Cooperative



'Born farmers' build family grain business

"We got to talking about putting up some grain storage here, and it seemed to be a little short in this vicinity, so we put up more than we needed ourselves," said Mark Marquis, explaining how his family started in the grain storage, trucking and buying business.

The company, which is located just south of Buda on Illinois Valley Electric Cooperative lines, is owned by Donald and Darrell Marquis. Mark is Darrell's son.

"We're set up to store about half a million bushels," Mark says, "but we'll buy and sell about a million and a half bushels this year, the way it looks now.

"We were doing our own drying," he continues, "and using a portable dryer that we had to move around. We used about four different locations and each move took most of a day, so we decided to build a centrally located setup. It's really handy here. We used to have grain wagons going all over the roads like crazy, and now it's not bad.

"Here we have a good location, a good road, and high ground, so we set up our storage and drying facilities. Of course, we set up a larger grain drying operation than we needed for just our crops, too."

Mark, who is 21, thinks of time in terms of crops. "Let's see," he muses,



Top photo: M. M. "Bud" Jontz, left, manager of the Illinois Valley Electric Cooperative, visits with Darrell Marquis in front of one of the huge grain bins that make up part of the Marquis Brothers' grain operation. Above: Wilbur Nordstrom, a director at Illinois Valley, talks with Mark Marquis. Nordstrom is employed as a truck driver and mechanic, and Mark is the son of one of the owners.

"this is our third crop since I got out of high school. We've had two good ones and this year's a break-even year. It's a good crop year, but prices are bad and it's a bad year for foreign matter, too." He is a graduate of Western High School in Buda.

The Marquis operation is designed to dry 1,500 bushels an hour at ten-points removal, and their three

trucks can take a good-sized crop to the river for shipment. They have two bobtails and a semi, and when they put all three on the road, they can haul 1,665 bushels at a time.

Trucking grain to the terminal is an important part of the business, and it requires a well-maintained set of trucks. That's where Wilbur Nordstrom fits in. Nordstrom, an Illinois Valley director, is employed by the Marquis Brothers as a truck driver and mechanic.

The family has been farming in the area for a long time.

"We were born farmers," Darrell laughs, "our mother was born more than 85 years ago in the house Donald's living in now, and we don't know how long her folks lived here before she was born, so the family's been here quite a while, all right."

They farm 1,500 acres, two-thirds of which was in corn this year. The rest was in soybeans.

Denny Thromberg is the bookkeeper for the operation, and has been working full time since June. A former junior high school math teacher, the sandy-haired Thromberg takes care of the truck scales, does the moisture testing, checks for foreign matter in grains, keeps in radio contact with the trucks, and handles the office side of the operation.



touch nearly everyone's life

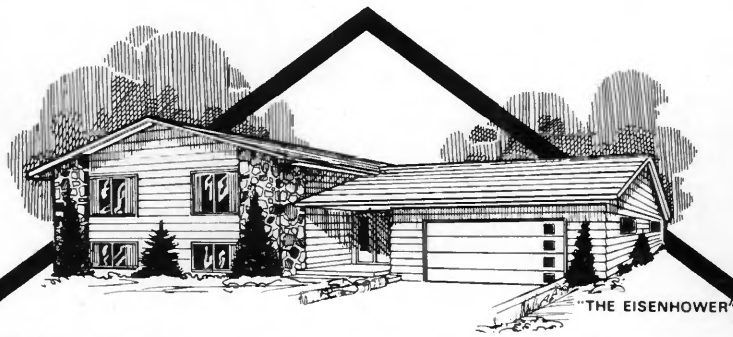
threatened our plant in Savanna. We made a hasty decision to move our valve and thermostat line to Hanover, even though the building was far from being ready, and we moved in the last week in April with two supervisors and six employees."

The plant is but one of several Controls Division plants across northern Illinois. "We have two plants in Havana," Kubicki says, "and a fabrication plant in Rochelle. There's also a molding plant in Batavia, where they make the molded plastic parts. We don't do any actual fabrication here. We receive parts from other plants by truck, assemble them and ship them out.

The products made by the division are used in virtually every kind of motor vehicle, and in appliances manufactured by several companies. We sell to Maytag, Speed Queen, Hobart, D and M, White Consolidated and Whirlpool."

"All the automotive companies buy our products, too," he remarks, adding, "Our products are original equipment in cars produced by Ford, General Motors, Chrysler and American Motors, and we supply parts for their aftermarket sales too, for replacement parts and so on."

In a small way, workers in several small Illinois towns affect the lives of others all over America.



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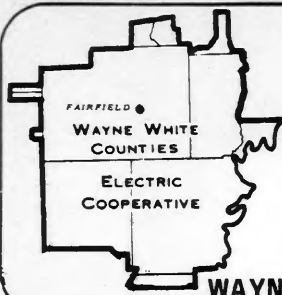
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Wayne-White News

WAYNE-WHITE COUNTIES ELECTRIC COOPERATIVE 618-842-2196 FAIRFIELD, ILLINOIS

Season's Greetings

FROM

Wayne-White
Counties
Electric Cooperative



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Evans C. Williams
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Robert D. Glover
Larry Hosselton
Charles R. Moore
Jack Kelsey

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Richard D. Hubele
Voris G. Thomason
William A. Venters
Lowell Jamerson
Weldon E. Galiher
William A. Lydick

Reporting service outages

We can't guarantee that power failures will not occur. Many things can happen between the generating plant and your house. But there are some things you can do to lessen the worry of power failures at this crucial time of the year. We suggest you insulate your water pipes instead of using electrical heat tapes. This will save energy as well as eliminating the dependency of the tape. Make sure your water pump enclosure is insulated so no freeze-ups will occur in case of power failure. Have arrangements for some type of standby heat, such as a woodburning stove or a gas space heater. Remember: if your power goes off, your gas and oil furnace will be off also. Be careful about operating any kind of gas heater without proper venting and automatic gas shut off. Don't be concerned about heating your entire house in case of an emergency. One room would be better than nothing. The better your house is insulated, the longer it will hold heat during a power outage.

If an outage does occur, check your main breaker by first turning it to the off position, then to the on position. If you have fuses in your main, you should have a spare set on hand. Replace both fuses with the ones you know are good. You can have the others tested later. If this does not correct your trouble call your neighbor to see if they have power. If they are out also ask if they have reported this to the cooperative. There is need for only one to report a line outage. If it has not been reported, you may call the Fairfield office, 842-2196, collect. We will accept collect calls in case of power outages only.

When you call in to report an outage please have this information available for your cooperative. First the name of the person as it appears on the billing card. Then, the map number (number below stamp on billing card) or the account number on the card. If these numbers are not available, the serial number on the meter will give us information that we check other records for your exact location. Finally, any other

information that might help in locating the power failure would be appreciated.

Lots of snow and ice is predicted for this winter. Perhaps we'll be fortunate again and escape the most severe part of the storms. But if we do get hit in the Wayne-White service area with heavy ice on poles and lines, we could have damage that would run

into long outages. In the summer months we know the outages will be short. We leave our refrigerators and freezers closed, turn our air conditioners off and go about our business. In the winter things tend to be a bit more critical. Our furnace is usually off, the house is dark, the threat of plumbing freezing and the inconvenience seem to add up faster.

Essay winners will tour Washington

Wayne-White Counties Electric Cooperative will again sponsor one boy and one girl on a one-week, all-expense paid trip to Washington, D. C. in June. Making the trip will be the winners of the 1978 essay contest.

Five boys and five girls—runners-up in the competition—will receive one-day all-expense trips to the "Illinois Rural Electric Youth Day" in Springfield, where they will tour the State Capitol Building, visit with area legislators, and tour the Lincoln shrines.

Students who enter this year's contest will have two topics to choose from: "Electricity's Tomorrows," or "Energy Management/Energy Conservation."

Eligibility is limited to high school sophomores, juniors and seniors living in the Wayne-White Counties Electric Cooperative service area. They need not live in a home receiving electricity from the cooperative.

Essays should be at least 500 words in length, but not more than 1,000, and they should be typed, double-spaced, and on one side of the page only. Pages should be numbered, and the entrant's name should be typed on a separate sheet, attached to the essay. Preliminary judging will be done by number.

Further information may be obtained from the cooperative, or from high schools in the cooperative's service area.



Installing blown-in attic insulation

This is another in a series of articles designed to help you save money through the wise and careful use of electricity.



While batts, blankets and pour-in insulation offer their strong points, one of the main advantages they have is that they seem to be reasonably easy to install. One person, with a little preparation, can climb into an attic and do the necessary work.

Blown-in—or pneumatic—insulation is not like that. First of all, you need a formidable-looking machine; then you need someone to pour insulation into it while you're crawling around in the attic hosing the insulation into place.

But blowing insulation into your attic is not a complicated chore. You need some of the same things you'd need to do the job with the other kinds of insulation: a dust mask, goggles and temporary lighting. You'll need some temporary flooring too, since ceilings are not designed to hold your weight.

When you are deciding what kind of insulation you want, you will need to take into consideration what is available. With insulation in short supply, your choices may be limited.

If you decide to use pneumatic insulation, you can get the mineral-wood or cellulose variety. Mineral wool offers the advantage that it is noncombustible. Cellulose is recycled paper which has been treated to make it fire-resistant and rodent-proof.

Cellulose varies in quality, and today's high demand and even higher prices have given rise to many manufacturers, some of which may cut corners; careful treatment is of utmost importance. Buy from a reputable dealer and look for the insulation industry's label of approval or the Underwriters' Laboratories seal.

Poorly treated material may pose a fire hazard.

Before you can determine how much insulation to buy, you will need to know what R factor you need, and how thick your insulation will need to be to achieve that factor (the R factor is the resistance to thermal passage the insulation give you, and varies from material to material).

Then, you need to know how many square feet of space you need to cover. Federal regulations require that each bag of pneumatic insulation be marked to show how great an area it will cover to various depths, and what R value each depth gives. Your supplier can tell you how many bags you will need to achieve the results you want. Many Illinoisans are insulating their attics to R-38, but if you add any insulation at all you will reduce your heating and cooling bills.

The machine is really fairly simple, and may be supplied by the people who sell insulation, a rental business. There is a big hopper you pour the insulation into, and a mixer that fluffs it up, since it is compressed into a bag when you buy it. Then, there is a

blower, which shoves the material down a hose to the operator and the place he wants to place the insulation. The blower features some kind of regulator so you can adjust the flow, and compensate for longer hoses. Normally, the insulation should come from the hose about like toothpaste from a tube, but if you need to spray it into eaves where you cannot reach, you can increase the flow. Too fast a flow, however, will make for a dusty environment.

To make sure you are getting the depth you need, you may want to divide your attic into sections and find out how many bags you will need for each section, then do one section at a time and see if you are using the right amount.

For example, one cellulose supplier packs insulation in 30-lb. bags. Each bag will cover 16 square feet to a depth of 10 inches, and will give an R-value of 37.5. If your house is 1,000 square feet, you will need 63 bags. Dividing your house into five equal sections will mean that you will need to put about 12½ bags in each section.

You should be sure, before you leave your supplier's place of business, that you know how to work the machine. Many have instructions printed on them, but you can check with the salespeople to be absolutely certain that you know what to do. If you rent the machine, they owe it to you to see that you get the job done right, and if they lend you the machine when you purchase your insulation, there must be a service fee built into the price of the insulation, so ask for the service. It will make for a better job and lower energy bills in the future.

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