Large Filing Separator Sheet

Case Number : 10-176-EL-ATA

File Date : 12/13/2010

Section : 2 of 3

Number of Pages : 135

Description of Document : Exhibits
(Kirtland Hearing)

135

10-176-EL-ATA

EXHIBITS FOR THE

KIRTLAND HEARING

11/23/10

(CONTINUED) PART 2

5

The Public Utilities Commission of Ohio

Monitoring marketplaces and enforcing rules to assure safe, adequate, and reliable utility services

August 11, 2009

Mr. Gary Davies
24276 Mountz
Homeworth, OH 44634

CASE ID: GDAV070109VA

Dear Mr. Davies:

This is in reference to your latest inquiry with the Public Utilities Commission of Ohio (PUCO) regarding Ohio Edison and the recent rate case.

The "all-electric" rate was a concept created in the 1980s and 1990s. At that time, electric utilities were mostly interested in promoting the use and sales of electricity. The rates were designed such that the more kWhs a customer used, the cheaper the cost per kWh became. We are in a completely different environment today with an emphasis on conservation. The Commission's approval of the elimination of the all-electric "discounts" reflects this environment. However, in order to mitigate the impact of the increases to all-electric customers, the Commission also approved discounts to those customers who were being switched from all-electric rates to the standard residential rate. Those all-electric customers who previously were on the all-electric schedules receive a combined 3.67 cents discount from the otherwise applicable schedule for all usage above 500 kWhs in the nine "winter" months of the year (Sept – May). In other words, if an all-electric customer who was previously on a special rate uses 3000 kWh in one of the winter months, the bill would still be $91.75 less than a customer on the standard residential schedule.

Ohio Edison had approximately 65,000 customers on its Residential Space Heating Rate and the transferring of the all electric rate customers to the standard residential rate does not impact on the company's total revenue. Distribution rates were designed to recover the revenue granted to OE in its most recent distribution rate case rate case rate and the generation rates merely reflect what the company has to pay to a third-party generation provider per kWh.

Furthermore, the PUCO has data on Ohio Edison for the first five months of 2009. Compared to the first five months of 2008, residential sales are virtually unchanged. Commercial sales are down 5%, industrial sales are down 23%, and

total sales are down 9.5%.

I hope you find this information helpful. Should you have further questions regarding this issue or any other utility-related matter, please call the PUCO Consumer Hotline at 1-800-686-PUCO (7826). For more information regarding the PUCO, visit us on the web at www.PUCO.ohio.gov.

Sincerely,

Jim Ripke
Service Monitoring and Enforcement Department

app.rpv

Sue Steigerwald 6

From: "Sue Steigerwald" <sue2811@roadrunner.com>
To: "Sue 2-Steigerwald" <suesteigerwald@adelphia.net>
Sent: Saturday, February 20, 2010 9:13 PM
Subject: Fw: Your expertise on electric issue

---- Original Message ----
From: Teryl Bishop
To: 'Sue Steigerwald'
Sent: Friday, February 19, 2010 4:07 PM
Subject: RE: Your expertise on electric issue

Sue,

I am a retiree from FirstEnergy. I worked 16 years in the marketing of electric heat to Ohio Edison residential customers throughout NE Ohio. Prior to joining Ohio Edison I owned a Heating & Air Conditioning company in Springfield Ohio. Following my sale of the company, Ohio Edison hired me to assist, from a dealer standpoint, in the development and implementation of a heat pump, water heater marketing program. This became their A+ (alternative plus) program.

Within a couple of years I had been promoted to the position of Supervisor Residential Marketing for the Youngstown Division of Ohio Edison. There I had 12 sales representatives on my staff working with builders, HVAC dealers and our customers on the sales and installation of electric systems.

One of the major obstacles to our success was the skepticism by dealers and customers that the special electric rates being offered would be eliminated, leaving them with unhappy customers and high bills. To counter this we assured them that if the special rate was ever eliminated, or replaced by a different rate that they could remain on that rate until they decided to change to a different rate, or when there was a change in account (i.e.; they moved). This 'grandfathering' was a normal option whenever rates were changed. To my knowledge, historically there were no rates eliminated without grandfathering existing customers. Additionally, as part of our representatives' responsibilities was to check with those grandfathered customers periodically to see if there was a better rate available to them. This was not unique to my Division and was identical to all other Ohio Edison Residential Marketing areas.

Recently FirstEnergy (with the blessings of the PUCO) eliminated the special rates afforded to those customers who had chosen electricity to heat their homes. There are tens of thousands of customers impacted by this decision resulting in hundreds of thousands of dollars in increased heating costs monthly going directly to FirstEnergy without any additional expense to them or benefit to the customer. This is an incredible move by FirstEnergy that profits them by hundreds of thousands of dollars every month, **all taken from already burdened Ohio consumers**.

I am extremely distressed by the action of the PUCO to allow this to take place. It makes me, and my representatives guilty of lying to our past customers, abandoning the trust and confidence they placed in us.

If you would like to follow up on this with me you may contact me at the following.

Teryl Bishop
3760 Turnberry Drive
Medina, Ohio 44256
330.304.2021 cell

2/20/2010

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

P.O. BOX 5000 ■ CLEVELAND, OHIO 44101 ■ TELEPHONE (216) 622-9800 ■ ILLUMINATING BLDG. ■ 55 PUBLIC SQUARE

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7

IMPORTANT INFORMATION TO ELECTRIC SPACE HEATING CUSTOMERS

Dear Customer:

As a result of the electric rate case recently concluded by the Public Utilities Commission of Ohio, the electric heating and water heating discount provisions of The Illuminating Company's Residential Rate Schedule were changed. If there is a change in our customer of record at any residence served under these discount provisions after July 14, 1980, electric service will be provided on the Residential Schedule without the discount provision.

UNDER THE NEW RATE SCHEDULE THERE WILL BE NO CHANGE IN THE DISCOUNT PROVISIONS UNTIL THERE IS A CHANGE OF CUSTOMER.

Our electric heating customers who own their residences and who are now being provided with discount provisions may want to consider the Residential Energy Conservation Rate as an alternative. The Energy Conservation Rate could provide more efficient use of energy, lower energy costs and assure future owners or tenants of these important benefits.

Qualification for the Energy Conservation Rate is based on meeting certain insulation standards. These standards are designed to improve the thermal efficiency of the dwelling, which aids in reducing energy use and cost.

Attached for your review is a copy of the standards that must be met to qualify for the Energy Conservation Schedule. Please review these requirements carefully so that you can accurately determine if your home would now qualify or what improvements would be necessary to qualify for the rate. When your home qualifies, complete the attached application and return it to The Illuminating Company, Attention F. F. Hammer, Room 511, Post Office Box 5000, Cleveland, Ohio 44101.

We suggest that you give this matter serious consideration as a residence that is thermally efficient provides more efficient energy use, lower utility costs and added comfort today and in the future.

If you need further information, please call The Illuminating Company at 622-9800, Extension 2438, in Cleveland; 354-5661 in Painesville, or your local Illuminating Company number.

Sincerely,

Richard R. Gould

Richard R. Gould
Manager
Residential Energy Application Department

rrg/m
encl.

THE CLEVELAND ELECTRIC ILLUMINATING CO.

P. O. BOX 5000 • CLEVELAND, OHIO 44101

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CLEVELAND AUG-7'83 OHIO

U.S. POSTAGE E 15

SVG

MUNICH DR

CLEVELAND OHIO 44130

8

PLUS

electric heat pump program

June 18, 1988

SAVE

Thomas H Logan
9276 Yo Salem Rd
Canfield, OH 44406

Dear Tom:

As you requested I have enclosed a detailed copy of the new rate which you have been put on. You may notice that the rate is titled "experimental". What this means is if Ohio Edison ever removes this rate from our files you would not be in jeopardy of forfeiting this rate. This rate will be guaranteed for you as long as you wish to utilize it.

Seems like only yesterday that we first spoke. I can easily remember the course and circumstances leading us to our present situation. First I put you on Power Commander. Next came the new heat pump, and finally the new rate. The three years have gone by quite fast since we first met. I hope all the time we have spent together provides years of satisfaction, not only with Ohio Edison, but with the service I have been able to extend to you.

Thanks for all your patience and should you need anything in the future please call me at 747-2071.

Sincerely,

Elio Andreatta
Sr. Residential Rep.
Ohio Edison Company

Enclosures

OHIOEDISON
The Energy Makers

RESIDENTIAL SERVICE

Optional Heating Rate
(Experimental)

Availability:

Available for single family residential service supplied through one meter where electricity is the primary source of heat, where at least ninety-five percent of the electrical consumption is within the residence and where annual usage is generally in excess of 10,800 KWH.

When service is used through the same meter for both residential and commercial purposes the applicable general service rate schedule shall apply.

This rate schedule is not available for service to a commercial, institutional or industrial establishment.

Service:

Alternating current, 60 Hz, single phase, nominal voltage 120/240 or 120/208 as available.

The Company designs and operates its electric system to provide service voltages within the limits specified in American National Standard Voltage Ratings for Electric Power Systems and Equipment (60 Hz) C 84.1-1982.

Rate:

The monthly charge per customer shall be:

	Summer	Winter
Customer Charge:	$ 8.29	$ 8.29
Energy Charge:		
First 900 KWH, per KWH	8.695¢	8.695¢
Balance of KWH, per KWH	8.695¢	2.50¢

The Winter Rates shall be applicable for the eight consecutive billing periods of October through May. The Summer Rates shall apply to all other billing periods.

Minimum Charge:

Customer charge

Special Provisions:

Where a customer has installed electric water heating equipment with a minimum of eighty gallons of tank capacity and the necessary wiring and devices that will permit the Company to control the operation of the water heating equipment during peak load hours, the application of the rates specified above shall be modified as follows:

The customer charge shall be increased to $11.29 and any KWH usage between 550 KWH and 900 KWH per month shall be priced at 2.50¢ per KWH.

PIP Arrearage Adjustment:

The energy charge shall be adjusted in accordance with the Percentage of Income Payment Plan Rider shown on Sheet No. 54.

Fuel Adjustment:

The energy charge shall be adjusted in accordance with the Electric Fuel Component Rider shown on Sheet No. 40.

(Continued)

Filed under the authority of Order No. 88-289-EL-ATA, issued by The Public Utilities Commission of Ohio

(Continued)

Mirror Construction Work in Progress (CWIP) Adjustment:

Bills shall be adjusted in accordance with the Construction Work in Progress (CWIP) Adjustment Rider shown on Sheet No. 56.

Terms of Payment:

If the bill payment is not received by the Company offices two days prior to the next scheduled meter reading date, an additional amount equal to 1.5% shall be charged on any unpaid balance existing after this date. This provision is not applicable to (1) unpaid account balances existing on the effective date of tariffs approved pursuant to the Order in Case 83-1130-EL-AIR, or (2) unpaid account balances of customers enrolled on income payment plans pursuant to 4901:1-18-04, Ohio Administrative Code.

Rules and Regulations:

The Company's Standard Rules and Regulations shall apply to the installation and use of electric service.

Motors and equipment served under this rate schedule must have electrical characteristics so as not to interfere with service supplied to other customers of the Company.

Contract:

Customers selecting this rate schedule must agree to be billed hereunder for a minimum period of one year.

Filed under the authority of Order No. 88-289-EL-AIR issued by the Public Utilities Commission of Ohio

Issued by J. T. Rogers, Jr., President
RES88/255

Effective: March 18, 1988

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FOR SERVICE RENDERED
ON OR AFTER APRIL 18, 1996

RESIDENTIAL WATER HEATING & SPACE HEATING RATE

Where electricity is the sole source of energy for space heating installations (except for incidental requirements) and the electric water heating istallation is approved by the Company and is in service and in regular use.

MONTHLY RATES:	Summer	Winter
	cents per kwh	
First 500 kwh	11.969	9.829
Next 100 kwh	8.969	6.729
Next 400 kwh	8.969	5.929
All excess	8.969	2.852

PIP Surcharge: .0568 cents per kwh

Fuel Cost Listed On Your Bill

Customer Charge (per month): $4.75

The **Winter Rates** specified above shall be applicable in **eight consecutive monthly billing periods beginning** with the **October** bills each year. The Summer Rates shall apply in all other billing periods.

Percent of Income Payment Plan – monthly bills to PIPP customers for electric service shall be reduced by **6.241%**.

OPTIONAL NON-TIME-OF-DAY LOAD MANAGEMENT RATE

Where a residential customer elects to control his load manually, or through the use of a load control device, or requests a load meter:

a. A Non-Time-of-Day option is under which all load will be measured by a Non-Time-of-Day load meter, irrespective of the time at which the highest billing load occurs. The billing load shall be determined monthly and shall be the highest 30-minute load registered in the month as indicated by a kilowatt demand meter but not less than 5.0 kw.

b. The initial 125 kwh per kw of billing load will be billed at the Residential rate schedule. All use in excess of 125 kwh per kw of billing load will be billed at **$.0178** per kwh.

c. A $3.20 monthly metering charge will apply to the Non-Time-of-Day option.

Bill computation on back.

The Illuminating Company
A Centerior Energy Company

10

February 22, 2010

To: **Tim Grendall**, *Attorney-at Law/Senator*
7413 Tattershall Drive
Chesterland, OH 44026
Phone: (440) 729-6145
Fax (440) 729-6196 *Total 13 pages including cover letter*

From: **Paul R. Fisher**
11080 Kimmeridge Tr.
Newbury, Ohio 44065
E-mail: ***prfisher2001@yahoo.com*** Tel (440) 564-9394, fax *(440) 564-5693*

Subject: Class Action lawsuit against:
The Illuminating Co., *a Subsidiary of* **First Energy**
(*other* **First Energy** *Subsidiaries*)
Ohio Edison, Toledo Edison, Met-Ed, Penelec, Penn Power, Jersey Central Power & Light

Memo: Since I have an **All-Electric House**, I'm affected by the **Class Action Lawsuit** you filed. I thought the following information with enclosures I'm sending you might be helpful.

During the summer of 1990, **The Illuminating Co.** was actively soliciting us and our neighbors in the **Kimberly Estates** (*approximately 115 housing units*) Development to switch from **Oil Heat** to (*All Electric*) **Electric Heat** since **Ohio Gas Co.** was proposing to install natural gas lines (*they ultimately did*) in our and other **Geauga County Developments.** Up until that time, only **Oil Heat** was available in our development.

At the time; heating with Electric was on average double the cost versus heating with natural gas in the same Square Footage House. My wife and I were seriously considering converting from **Oil Heat** to **Natural Gas**; we weren't keen on converting to **Electric Heat** because of the cost. **The Illuminating Co.** representative came out to our house making the following proposal: if we converted our entire house to **All Electric** the total monthly cost would be less because we'd qualify for a special discounted rate that was approximately **50%** off they're regular rate! By doing that we'd have only one monthly utility bill to pay instead of two since we'd be paying only the Electric bill. She said if we converted to **Natural Gas** for our Heating, we'd have a monthly Gas bill for heating plus an Electric bill to pay for our other appliances. She stated; even if the Electric rates were to be increased, we'd still keep that **All Electric House percentage discounted rate** indefinitely as long as we owned/resided the house! If we were to sell the house, the **All-Electric discounted rate** would not apply to the new owners because it's not transferable.

In the past couple of months, our monthly Electric bills have increased substantially; the current bill doubled from the same period last year even though we used less electricity. In December, I made an inquiry to **The Illuminating Co.** They're customer service representative told me that the **All Electric House discount rate** was canceled; she said a notice was sent to us in June notifying us of it. I told her, I don't recall receiving it; if it came with our bill, I would have stapled it to that billing statement. I requested she mail me a copy of it because if it came separately, I might have missed seeing it. She put me on hold, came back a few minutes later and stated it wasn't a separate notice; it would have appeared on the billing statement. I told her I have the full year of billing statements in front of me; I asked her, specifically which month's statement it was on? While she looked through my billing statements she said she couldn't find it, and then put me back on hold. A few minutes later, she came back on the phone, apologized saying she was mistaken. We were not sent a notification that they were discontinuing our **All Electric House discounted rate** but since it's a matter of public record, I should have known about it! I reiterated to her about (*Fore mentioned in this letter*) the contractual agreements **The Illuminating Co.** made when we converted to an **All Electric House**. ***"even if the Electric rates were to be increase; we'd still keep the same percentage All Electric House discount rate indefinitely as long as we owned/resided in the house"***. I said because of that, it's not understandable how they could unilaterally cancel it without even notifying us! She stated **The Illuminating Co.** was within their legal rights to cancel it at anytime!

Mr. Grendell, if I'm not mistaken, in order to unilaterally cancel ours along with others **All Electric House discount rates**, **The Illuminating Co.** would have to make that request to the **Public Utilities Commission**, then get their approval before thy could implement it. If the **Public Utilities Commission** is complicit with **The Illuminating Co.** by just rubber-stamping their request, it appears they're acting as an agent for the **Utilities** & their **Shareholders** as has been highly publicized; not in the best interests of the consumers!

I'm aware individually; it wouldn't be economically feasible for me to pursue it. A Class Action Lawsuit makes sense since there are over a **100,000** households in the same situation my wife and I are in. Since my main source of income is Social Security, it's a real financial hardship. Also, it doesn't have to be limited to Geauga County residents only as it affects thousands of other customers/consumers throughout the State of Ohio!

I look forward to your reply,

Sincerely,

Paul R. Fisher

Paul R. Fisher

ENCLOSURES

Copy of **Plain Dealer January 16, 2010 article** by John Funk
Copy of **the Illuminating Co.** letter dated August 1, 1990
Copies " " " " advertising promotion flyers
Copy of **the Illuminating Co.** letter dated *August 28, 1990*
" " " " " Marci Spaulding, Survey Representative's Card
" " " " " Conversion Rebate Request Form
" " " " " $400.00 rebate check
Copy of Claridon Heating & Cooling Billing Invoice

1 800-589-3101
customer Service

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

P.O. BOX 5000 • CLEVELAND, OHIO 44101 • TELEPHONE (216) 622-9800 • ILLUMINATING BLDG. • 55 PUBLIC SQUARE
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Number 4 off
1-800-589-3101 - Ex. 7666
Thurs. Oct. 11th. MARCY
SPAULDING
Job No. → AX 60433

Call TUES to have Increase in Service C.B. FRI. for date they will be out

August 1, 1990

Dear Homeowner:

If you're thinking about replacing your oil or propane furnace — or even looking at installing a central air conditioning system this year — The Illuminating Company has some money-saving offers that are hard to beat.

By converting your present heating system to electric, you'll receive not only a $400 rebate, but a special discount electric rate that will help you save money year-round.

Or by purchasing an *Add-On Heat & Cool Pump* — the perfect choice for whole-house air conditioning — you'll receive a $300 rebate and a special discount electric rate.

Of course, there are many other reasons besides our rebates to install either an electric furnace, boiler or baseboard system or the modern *Heat & Cool Pump*. We've enclosed two fact sheets to explain why going electric is the best choice.

Also enclosed is a postage-paid response card if you want more information about these money-saving systems. Before it's time to reorder your fuel oil or propane, you owe it to yourself to investigate all of the options.

If you'd like immediate information, please don't hesitate to call us at 1-800-331-5487.

Sincerely,

Charles S. Heyman
Charles S. Heyman
Residential Marketing

Leslee A. Sintic
Leslee A. Sintic
Residential Marketing

A Centerior Energy Company

HOT TIPS ON ELECTRIC HEATING

Receive a $400 rebate from The Illuminating Company by converting your oil or propane system to either an electric furnace, boiler, baseboard, radiant or other form of electric heat.

*

Get an electric discount rate that helps you save money during the heating season.

*

An electric heating system is cleaner and healthier. Oil or propane leaves a dirty, combustible residue.

*

An electric heating system is easy to install with a home's present ductwork.

*

Electric heating cost is regulated by the government. Oil and propane fuel suppliers can raise their prices at random.

*

A network of trained C.A.R.E. heating and cooling contractors throughout the CEI service area provide reliability and dependability in service and maintenance.

*

The Time Is Right For ELECTRIC HEATING

Call CEI Marketing Representatives Chad Heyman or Leslee Sintic at 1-800-331-5487 and get all the facts on electric heating systems.

The Illuminating Company

The Energy Makers.

A Centenor Energy Company

COLD FACTS ON THE ADD-ON HEAT & COOL PUMP

Receive a $300 rebate from The Illuminating Company by installing the Add-On Heat & Cool Pump to your present oil or propane furnace.

*

Get a special discount electric rate each time you use the Heat & Cool Pump and save up to 20% on summer cooling and 30%-70% on winter heating.

*

The Heat & Cool Pump works just like an air conditioner, cooling and dehumidifying your home in warm weather.

*

A special extended warranty covers parts and labor not covered by the manufacturer through the second through fifth year. Most central air conditioners offer a one-year warranty. Period.

*

The Heat & Cool Pump has an average service life of 15-20 years, compared to 10-15 years for a central air conditioner.

*

The Heat & Cool Pump is backed by a network of certified C.A.R.E. contractors, who are specially trained to install and maintain Heat & Cool Pumps in the CEI service area.

(440) 350-7697

*

If You Need Whole-House Air Conditioning, You Should Definitely Consider THE ADD-ON HEAT & COOL PUMP

Rose Luce X7697

Call CEI Marketing Representatives Chad Heyman or Leslee Sintic at 1-800-~~331-5487~~ and get all the facts on the modern Add-On Heat & Cool Pump.

-89-3101

The Illuminating Company
The Energy Makers.
A Centerior Energy Company

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY
1445 MENTOR AVENUE ■ PAINESVILLE, OHIO 44077 ■ TELEPHONE (216) PAINESVILLE 953-7700 ■ ASHTABULA 997-3131
Serving The Best Location in the Nation

August 28, 1990

Dear Customer:

Thank you for responding to our recent letter regarding electric heating. With the price fluxuation in the oil and propane markets and the frequent maintenance necessary with oil and propane heating systems, electric heat offers you the best of all options!

We have enclosed a pamphlet on electric heat that should answer some of your questions. We have also enclosed a C.A.R.E. contractor list. This is a group of heating and cooling contractors that have demonstrated their competence relating to electric heating installations. You can have confidence when dealing with a C.A.R.E. contractor!

We will be contacting you within the next two weeks to answer any questions you may have. We are available to meet with you in your home and personally review your space heating situation.

If you have any questions in the meantime, please call us at 1-800-331-5487.

Sincerely,

Leslee Sintic
Chad Heyman

Leslee Sintic/Charles Heyman
Residential Marketing Department

Colleen MAJOR

1-800-957-7666

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY
7755 AUBURN ROAD - PAINESVILLE, OHIO 44077
A Centerior Energy Company

MARCI L. SPAULDING
Survey Representative
Concord Section
Eastern District Department

216-953-7665 • MAIL TO P.O. BOX 5000 • CLEVELAND, OHIO 44101

Conversion Rebate Request Form

Program Beginning Date: March 1, 1990 ● Ending Date: December 31, 1990

☐ I just replaced my ☐ Gas ☑ Oil ☐ Propane **Heating System with an Electric Heating System:**

Brand Name Carrier Model# 40 AQ 036 Size 20KW

Purchased From Clarridon Heating & Cooling, Inc. Date October 22, 1990

Installed by ( ) ( ) ( ) ( )
(C.A.R.E. Heating and Cooling Contractor/Electrician)

Attached is a copy of my sales slip.

The Electric Heating System was installed at:

Street Address 11080 Kimmeridge Trail Apartment #____

City/Town Newbury, Ohio Zip Code 44065

I certify that the above information is true and hereby request the rebate in the amount of $400.00

Paul R. Fisher (SIGNATURE) 11-17-90 (DATE)

Make check payable to:

Name Paul R. Fisher (Please Print)

Address 11080 Kimmeridge Trail

City/Town Newbury, Ohio Zip Code 44065

Phone Number (216) 564-9394

Note: Electric Heating installations are subject to verification by a Market Utilization Representative and must be installed by a participating C.A.R.E. Heating and Cooling Contractor or licensed electrical contractor to qualify for the $400.00 Rebate.

Mail this form and your sales slip to:
The Illuminating Company
Attention: Market Utilization, Room 832
P.O. Box 5000
Cleveland, Ohio 44101

** C.A.R.E. Heating and Cooling Contractors provide comfort and reliability in electric heating and cooling installations.*

The Illuminating Company
The Energy Makers.
A Centerior Energy Company

INVOICE

CLARIDON HEATING and COOLING, INC.

Heating and Air Conditioning

732 Old State Road | Chardon, Ohio 44024 | Telephone: 352-2139

Paul Fisher
11080 Kimmeridge Dr.
Novelty, Oh

For Work Done at same

te 10/29/90

Our Job No. 2682

Install complete Carrier electric
Air Handler with 20KW strip 2062.00
Install Aspen Guard Air Cleaner 225.00

Amount Due $2287.00

ALL UNPAID BALANCES OVER 30 DAYS FROM DATE OF THIS STATEMENT SHALL BEAR 1.5% INTEREST PER MONTH.
ACTUAL AND REASONABLE COLLECTION CHARGES AND LEGAL FEES WILL BE ADDED IF DELINQUENT.

THE FACE OF THIS DOCUMENT HAS A COLORED BACKGROUND — NOT A WHITE BACKGROUND

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

CLEVELAND, OHIO

NO. 712708

PAY TO THE ORDER OF Paul Fisher (NAME)

DATE 1/7/91 (NOT VALID AFTER 60 DAYS)

6-12/410

11080 Kimmeridge Trail (STREET)

DIRECT PAY PERMIT HOLDER NO. 98000312

Newbury, OH 44065 (CITY)

AMOUNT Four Hundred 00/100 DOLLARS $400.00

(NOT VALID IN EXCESS OF $500 OR FOR CASH PURPOSES)

PAYABLE THROUGH NATIONAL CITY BANK CLEVELAND, OHIO

RMKT (LOCATION)

L Petrucello (SIGNATURE)

L PETRUCELLO (NAME) (PLEASE PRINT)

⑈0712708⑈ ⑆041000124⑆ 7700392⑈

The Schipper Group

195 South Main St., Suite 200
Akron, OH 44308-1314
Ph: (330) 434-8355 Fx: (330) 434-5326

March 9, 2010

Senator Tim Grendell
7413 Tattersall Street
Chesterland, OH 44026

Re: The case for restoring former all-electric rates for <u>commercial</u> customers.

Dear Senator Grendell,

Thank you for your courageous efforts and leadership in pressuring the PUCO to finally force First Energy to restore all-electric discounts to its residential customers. I trust that through your continued efforts, those discounts will be made permanent.

I'm writing to alert you that a significant number of commercial customers are in the same predicament of experiencing drastic rate increases due to the questionable acquiescence of the PUCO to First Energy's schemes. Attached is a letter dated April 10, 2008 (prior to the passage of SB-221) that I had sent to all elected state-level officials (including yourself) in an attempt to awaken them to the disastrous effect that First Energy's proposed market-based pricing would have. On behalf of more than 2,000 commercial customers like us that were benefitting from FE's all-electric "Rate-22" tariff at that time, I urged our state leaders to vote against what I believed to essentially be a long-term bait-and-switch scheme. It is my strong opinion that FE used the promise of low rates to lure thousands of customers like us to commit investing in all-electric HVAC systems, only to eliminate that tariff (along with many other tariffs) as soon as they gained the political clout with the PUCO to do so.

Also attached is one of the deceptive spreadsheets that FE used in their 2008 rate case to justify the approval of their plan. As you can see, they promoted their new service offer by simply saying that their rates will only increase by 5.23% on average (i.e. when you average all customers together). And for the typical commercial customer using "General Service – Secondary Voltage", the average increase would be only 2.53%. On the surface, that would seem to be a fair and reasonable increase, but it was very deceptive in that it hid the true impact that would be borne by the thousands of all-electric customers on discounted rate tariffs. Rate-22 customers like us were facing an increase of 300% (i.e. heating rates tripling from $.04 to $.12 /kwh)! I grew increasingly concerned as I discovered that very few of our peers in business had any knowledge of what was about to happen... there was simply a false assumption that the PUCO would generally look out for the best interests of the consumer (whether residential or commercial). As I came to understand that FE generally drafts everything that becomes binding upon them via the PUCO, I came to realize that the customer's ignorance is naturally First Energy's biggest asset.

After months of me sounding the alarm bell (including sending letters, testifying in public hearings, shadowing the legal challenges brought by other commercial users), FE finally agreed to give a token $.02 /kwh distribution credit to its Rate-22 customers. I've always viewed this as "hush money"... a token gesture designed to silence opposition despite the fact that FE would raise rates anyway. And it basically worked... we made the business decision that it wasn't worth the time or effort to continue fighting given the PUCO's deaf response. We instead turned our attention to bidding our generation, which we ironically awarded to First Energy Solutions (the only real contender in the market) last fall. Thanks to a terrible economy that had pushed wholesale electric rates to a 7-year historic low, we locked in generation rates at roughly $.055 /kwh for approx. 20 months. As a result, my total rate (generation + distribution) for electric heat for the last 5 months has only increased from $.042 /kwh to $.073 /kwh, still an increase of 74% (including the $.02 /kwh discount)!

Under the present system as I understand it, we are completely at the mercy of the market. Should the economy improve, rates will naturally rise (perhaps even spike dramatically) with nothing to offer us any price protection. Wholesale rates can be extremely volatile (you may recall California's rates a few summers back), and when it comes time to shop our supply again, there is no guarantee that multiple bidders will be present, and there is nothing to cap our rates from doubling or tripling due to overall market demand growth and/or constrained supply. Why would Ohio ever want to introduce such economic uncertainty? It will only drive away new business, and cause existing businesses to suffer.

It appears that the prevailing powers in Columbus are willing to subject the people of our state to this dangerous experiment so that they can tax the billions in revenue collected by for-profit energy suppliers like FE Solutions, the wholly-owned subsidiary of FE. The State obviously needs new revenue, but bottom line - this is a huge tax that voters never approved. What will be the public outcry as this becomes more widely understood? Furthermore, it is a sham that FE is allowed to spin off its generation assets into un-regulated for-profit subsidiaries which it owns and controls. FE knows that electricity is too expensive and too inefficient to transmit long distances, thus guaranteeing a huge competitive advantage on its home turf. FE will always have a natural monopoly to some degree, and they now have greater ability to manipulate price. Thus, we are now at the mercy of FE, and yet consumers are told by the PUCO that this is in their best interests.

I urge you to expand your legal challenge to include reinstating discounts to commercial all-electric customers in addition to residential customers. (Perhaps you could start by demanding a list of all of FE's 2,000+ commercial customer who were formerly on the Rate-22 tariff.) Such reinstatement would be the fairest short-term fix. Long-term, I recommend that you consider ways to wrestle FE back into a more regulated model. I certainly believe in free market capitalism, but such a market only works when there is a level playing field with many players. Such a scenario will never exist with electricity supply.

Please feel free to contact me with any further questions. And thank you again for taking a stand.

Respectfully,

Thomas G. Weise
Vice President of Development

CASE NO. 08-XXXX-EL-SSO
OHIO EDISON COMPANY
ANNUALIZED RATE IMPACTS AT 2009 VS 2008 RATES
WORK PAPER REFERENCE NO(S): SCHEDULES 5A-C, 5A-T

WITNESS:

G. HUSSING

LINE NO.	RATE CODE (A)	CLASS/ DESCRIPTION (B)	CUSTOMER BILLS (C)	kWh SALES (D) (KWH)	CURRENT AVERAGE RATES - 2008 (E)	REVENUE - 2008 (F)	PROPOSED RATES - 2009 (G) ($)	REVENUE - 2009 (H) ($)	2009 / 2008 % INCREASE (I)	% OF TOTAL REVENUE - 2009 (J) (%)
			PROPOSED ANNUALIZED							
1	RS	RESIDENTIAL SERVICE	11,163,837	9,225,981,525	$0.11391	$1,050,950,746	$0.11662	$1,075,935,935	2.38%	41.18
2	OS	GENERAL SERVICE - SECONDARY	1,293,323	7,001,256,350	$0.10598	$742,018,527	$0.10867	$760,803,306	2.53%	29.12
3	GP	GENERAL SERVICE - PRIMARY	13,244	3,215,783,887	$0.08540	$274,619,326	$0.08995	$289,255,833	5.33%	11.07
4	GSU	GENERAL SERVICE - SUBTRANSMISSION	1,214	986,594,660	$0.07252	$71,549,620	$0.07882	$77,763,743	8.69%	2.98
5	GT	GENERAL SERVICE - TRANSMISSION	2,336	5,402,453,751	$0.06006	$324,456,963	$0.07185	$388,161,341	19.63%	14.86
6	POL	PRIVATE OUTDOOR LIGHTING SERVICE	35,009	37,646,793	$0.18278	$6,881,189	$0.18727	$7,050,284	2.46%	0.27
7	STL	STREET LIGHTING SERVICE	18,303	126,154,184	$0.08624	$10,879,288	$0.09618	$12,133,986	11.53%	0.46
8	TRF	TRAFFIC LIGHTING SERVICE	46,957	22,396,480	$0.05782	$1,294,903	$0.06497	$1,455,162	12.38%	0.06
9	TOTAL COMPANY		12,574,222	26,018,267,630	$0.09542	$2,482,650,560	$0.10041	$2,612,559,590	5.23%	100.00

NOTE:
Street lighting contains ESIP.

SO-CALLED "AVERAGE INCREASE"

RATE IMPACTS (1)

12

Concord Township, Lake County, Ohio

Trustees

Christopher A. Galloway
Caroline N. Luhta
Paul R. Malchesky
trustees@concordtwp.com

Fiscal Officer

Amy L. Dawson
(440) 354-7510 Ext. #128
adawson@concordtwp.com

Administrator

Jack J. Nettis, Jr.
(440) 354-7510 Ext. #104
jnettis@concordtwp.com

Fire Chief

R. Mike Warner
11600 Concord-Hambden Rd.
(440) 354-7503
(440) 354-7507 FAX
chiefwarner@concordtwp.com

Recreation Director

Community Center
Linda A. Legg
7671 Auburn Rd.
(440) 639-4650
(440) 639-4654 FAX
llegg@concordtwp.com

Service Director

Terrence Gerson, P.E., P.S.
(440) 354-7510 Ext. #108
tgerson@concordtwp.com

Planning & Zoning Director / Zoning Inspector

Kathy Mitchell
(440) 354-7510 Ext. #106
kmitchell@concordtwp.com

February 3, 2010

The Public Utilities Commission of Ohio
180 E. Broad St.
Columbus, OH 43215

Dear Commission:

As Township Trustees, we are often on the frontline of our residents' issues. Those issues today seem to be more directed at utility rates, in particular electricity.

Most recently, we have experienced a flood of calls from residents realizing significant increases in their electric bills and especially those that have "whole house" electricity for their appliances. We have been told of increases ranging 75% and higher. We have also been told that these "whole house" electricity customers were informed when they made the choice of a single form of utility that they would continue to benefit from a discounted rate of electricity because of their choice. Today they are being penalized for this choice. Unfortunately, their alternative of changing from electric to natural gas/propane is too expensive.

Your Commission has been charged with acting on behalf of the citizens of the state with a hand of fairness to those that provide us these critical services for our everyday life. There is no other alternative to FirstEnergy in this area; even NOPEC has signed a long-term contract with FirstEnergy. In such sole-source situations it becomes even more imperative that your Commission act in service to the citizens. Therefore, we wholeheartedly request that you review this matter.

Thank you for your time and consideration.

Most sincerely and respectfully,

Christopher A. Galloway
Chairman

Paul R. Malchesky
Vice-Chairman

Caroline N. Luhta
Trustee

13

February 4, 2010

To: Mr. Tim Grendell

Dear Mr. Grendell

My name is Bill Arcuri and I have lived in Geauga County (Auburn, Ohio) since 1969.

I will be 68 years old July 3rd and I am on Social Security. I am sending you a copy of last year's electric bill and this year for the month of November to December 2008, December 2008 to January 2009, November to December 2009 and December to January 2009 to 2010. As you can see, my last bill was $1,115.26!

We had an all electric rate until the PUCO granted the Electric Company to eliminate The all electric rate. I served in the Navy and have paid taxes for 50 years, this is the Last straw! I think everyone who was on an all electric should have been Grandfathered in, and if nothing else, the people on fixed incomes Social Security etc., etc. should be Grandfathered for sure.

I am hoping you can bring this to the attention of anyone who has power over the PUCO to rescind this stupid Grant to the Electric Company.

P.S. I'm hoping to hear from you, since I have other things I can't address in this letter.

Respectfully yours,

Bill Arcuri
16515 Auburn Rd.
Chagrin Falls. Ohio 44023
Telephone (Home) 440-543-5769
* (Cell) 440-665-1094

the Illuminating Company
A FirstEnergy Company

December 29, 2008

Account Number: 11 00 28 5803 4 5

121

Bill for: WILLIAM A ARCURI
16515 AUBURN RD
AUBURN TWP OH 44023

Billing Period: Nov 27 to Dec 26, 2008 for 30 days
Next Reading Date: On or about Jan 27, 2009
Bill Based On: Actual Meter Reading

Residential All Electric

Account Summary		Amount Due
Your previous bill was	336.48	
Total payments/adjustments	-336.48	
Balance at billing on December 29, 2008	**0.00**	**0.00**
Current Basic Charges		
The Illuminating Company - Consumption		464.39
Total Due by Jan 12, 2009 - Please pay this amount		**$464.39**

To avoid a 1.50% Late Payment Charge being added to your bill, please pay by the due date.

Under State law, the amount you are being billed includes:
(1) Kilowatt-hour taxes that have been in effect since 2001 and are currently at $265.70; and
(2) Assessments to assist in the support of the operations of the PUCO and the office of the consumers' counsel that have been in effect since 1912 and 1977, respectively.

Customer Information

Bill issued by:
The Illuminating Company
PO Box 3638
Akron OH 44309-3638

Customer Service	1-800-589-3101
24-Hour Emergency/Outage Reporting	1-888-544-4877
Payment Options	1-800-686-9901

visit us on-line at www.firstenergycorp.com

Price to Compare Message

Your current **PRICE TO COMPARE** for generation and transmission from The Illuminating Company is listed below. For you to save, a supplier's price must be lower. To obtain an **"Apples to Apples"** comparison of available competitive electric supplier offers, visit the PUCO web site at www.PUCO.ohio.gov.

Residential All Electric - 1810030564 **1.9 cents per kWh**

LAST YEAR
NOV. — DEC.

Best wishes for a joyous holiday season from all of us at The Illuminating Company.

When contacting an Alternate Electric Supplier, please provide the customer numbers below.
Call The Illuminating Company at 1-800-589-3101 with questions on these charges.

Basic Charges

Customer Number: 0801551172 1810030564 - Residential All Electric - CE-RS70F

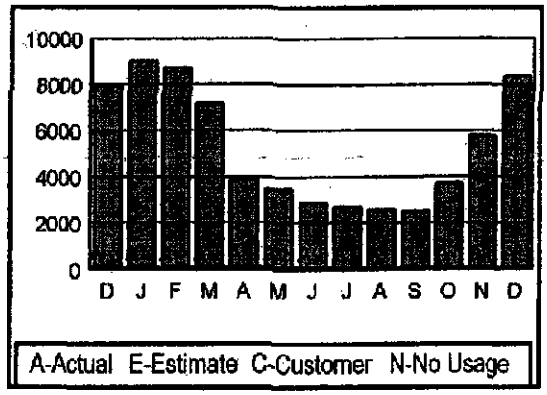
Customer Charge	4.53
Delivery Charge	167.57
Transition Charge	116.83
Generation Related Component	153.89
Transmission Related Component	21.57
Total Charges	$ 464.39

Date	Reference	Amount
Payments:		
12/04/08		-336.48
Total Payments		-336.48
Total Payments and Adjustments		-$336.48

Residential All Electric

Meter Number	143672
Present KWH Reading (Actual)	47,249
Previous KWH Reading (Actual)	38,888
Kilowatt Hours Used	8,361

Usage Comparison



Historical Usage Information

Dec 07	7,913	Jun 08	2,875
Jan 08	9,022	Jul 08	2,716
Feb 08	8,720	Aug 08	2,578
Mar 08	7,160	Sep 08	2,499
Apr 08	3,891	Oct 08	3,707
May 08	3,460	Nov 08	5,789
		Dec 08	8,361

	Dec 07	Dec 08
Average Daily Use (KWH)	264	279
Average Daily Temperature	32	29
Days in Billing Period	30	30
Last 12 Months Use (KWH)		60,778
Average Monthly Use (KWH)		5,065

Pd Jan 2-09
Ck 1273

The Illuminating Company
A FirstEnergy Company

January 28, 2009

Bill for: WILLIAM A ARCURI
16515 AUBURN RD
AUBURN TWP OH 44023

Billing Period: Dec 27 to Jan 27, 2009 for 32 days
Next Reading Date: On or about Feb 25, 2009
Bill Based On: Actual Meter Reading
Prorated Bill

Residential All Electric

Account Summary		Amount Due
Your previous bill was	464.39	
Total payments/adjustments	-464.39	
Balance at billing on January 28, 2009	**0.00**	**0.00**
Current Basic Charges		
The Illuminating Company - Consumption		585.73
Total Due by Feb 11, 2009 - Please pay this amount		**$585.73**

To avoid a 1.50% Late Payment Charge being added to your bill, please pay by the due date.

General Information

Bill issued by:
The Illuminating Company
PO Box 3638
Akron OH 44309-3638

Customer Service	1-800-589-3101
24-Hour Emergency/Outage Reporting	1-888-544-4877
Payment Options	1-800-686-9901

visit us on-line at www.firstenergycorp.com

Price to Compare Message

Your current **PRICE TO COMPARE** for generation and transmission from The Illuminating Company is listed below. For you to save, a supplier's price must be lower. To obtain an **"Apples to Apples"** comparison of available competitive electric supplier offers, visit the PUCO web site at www.PUCO.ohio.gov.

Residential All Electric - 1810030564 **1.9 cents per kWh**

LAST YEAR
DEC TO JAN

Messages

Pursuant to Ohio Law, the Universal Service Fund rider rate has been adjusted effective with this bill.

REMINDER: Please pay the entire amount of your electric bill each month by the due date to avoid being assessed a late payment charge, which is equal to 1.5% of your total amount due.

The PUCO has approved changes to the Company's Interconnection Tariff. Customers adding generating equipment connected to their home or business wiring must comply with the technical specifications referred to in Sheet No.95, Interconnection Service. Customers with on-site generation fueled by solar, wind, biomass, landfill gas, or hydropower, or who use a micro turbine or a fuel cell may request net metering as described in Sheet No. 93, Net Energy Metering Rider. Copies of these documents are available at firstenergycorp.com.

Charges from The Illuminating Company this billing period

When contacting an Alternate Electric Supplier, please provide the customer numbers below.
Call The Illuminating Company at 1-800-589-3101 with questions on these charges.

Basic Charges

Customer Number:

Customer Charge	4.53
Distribution Related Component	203.99
Transition Charge	142.90
Generation Related Component	207.73
Transmission Related Component	26.58
Total Charges	**$ 585.73**

Detail Payment and Adjustment Information

Date	Reference	Amount	
Payments:			
01/05/09		-464.39	
Total Payments			-464.39
Total Payments and Adjustments			**-$464.39**

Meter Reading Information

Residential All Electric	
Meter Number	143672
Present KWH Reading (Actual)	57,783
Previous KWH Reading (Actual)	47,249
Kilowatt Hours Used	10,534

Jan 31-1287

The Illuminating Company
A FirstEnergy Company

December 23, 2009

Bill for: WILLIAM A ARCURI
16515 AUBURN RD
AUBURN TWP OH 44023

Billing Period: Nov 24 to Dec 22, 2009 for 29 days
Next Reading Date: On or about Jan 25, 2010
Bill Based On: Estimated Meter Reading

Residential Service

Account Summary		Amount Due
Your previous bill was	487.01	
Total payments/adjustments	-487.01	
Balance at billing on December 23, 2009	**0.00**	**0.00**
Current Basic Charges		
The Illuminating Company - Consumption		**676.57**
Total Due by Jan 05, 2010 - Please pay this amount		**$676.57**

To avoid a 1.50% Late Payment Charge being added to your bill, please pay by the due date.

Under State law, the amount you are being billed includes:
(1) Kilowatt-hour taxes that have been in effect since 2001 and are currently at $447.61; and
(2) Assessments to assist in the support of the operations of the PUCO and the office of the consumers' counsel that have been in effect since 1912 and 1977, respectively.

General Information

Bill issued by:
The Illuminating Company
PO Box 3638
Akron OH 44309-3638

Customer Service	1-800-589-3101
24-Hour Emergency/Outage Reporting	1-888-544-4877
Payment Options	1-800-686-9901

visit us on-line at www.firstenergycorp.com

Price to Compare Message

Your current **PRICE TO COMPARE** for generation and transmission from The Illuminating Company is listed below. For you to save, a supplier's price must be lower. To obtain an **"Apples to Apples"** comparison of available competitive electric supplier offers, visit the PUCO web site at www.PUCO.ohio.gov.

Residential Service - 1810030564 **4.67 cents per kWh**

See other pages for additional information and telephone numbers

Messages

Please do not write any comments, questions or address changes on the front or the back of the payment remittance stub. We use an automated payment processing system, so any words written on this form will not be recorded or read. If you'd like to contact us, please call us using the toll-free number on page 2 of this bill, or visit our web site: firstenergycorp.com.

Best wishes for a joyous holiday season from all of us at The Illuminating Company.

Charges from The Illuminating Company this billing period

When contacting a Certified Retail Electric Service Provider, please provide the customer numbers below.
Call The Illuminating Company at 1-800-589-3101 with questions on these charges.

Basic Charges

Customer Number: 0801551172 1810030564 - Residential Service - CE-RSF

Customer Charge	4.00
Distribution Related Component	368.54
Transition Charge	70.71
Cost Recovery Charges	15.08
Bypassable Generation and Transmission Related Component	329.78
Residential Distribution Credit	-111.54
Total Charges	**$ 676.57**

Detail Payment and Adjustment Information

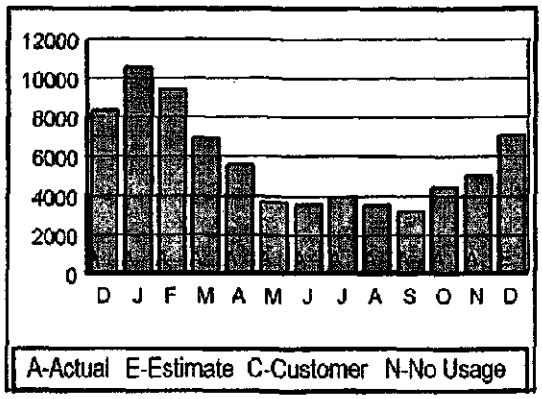
Date	Reference	Amount	
Payments:			
11/30/09		-487.01	
Total Payments			-487.01
Total Payments and Adjustments			-$487.01

Meter Reading Information

Residential Service	
Meter Number	143672
Present KWH Reading (Estimate)	14,105
Previous KWH Reading (Actual)	7,044
Kilowatt Hours Used	7,061

Usage Information

Usage Comparison



Historical Usage Information

Dec 08	8,361	Jun 09	3,549
Jan 09	10,534	Jul 09	3,915
Feb 09	9,424	Aug 09	3,512
Mar 09	6,899	Sep 09	3,228
Apr 09	5,580	Oct 09	4,417
May 09	3,698	Nov 09	5,039
		Dec 09	7,061

	Dec 08	Dec 09
Average Daily Use (KWH)	279	243
Average Daily Temperature	29	35
Days in Billing Period	30	29
Last 12 Months Use (KWH)		66,856
Average Monthly Use (KWH)		5,571

Dd Dec 08-09
Ck 1473

The Illuminating Company
A FirstEnergy Company

January 27, 2010

121

Bill for: WILLIAM A ARCURI
16515 AUBURN RD
AUBURN TWP OH 44023

Billing Period: Dec 23 to Jan 26, 2010 for 35 days
Next Reading Date: On or about Feb 23, 2010
Bill Based On: Actual Meter Reading

Residential Service

Account Summary		Amount Due
Your previous bill was	676.57	
Total payments/adjustments	-676.57	
Balance at billing on January 27, 2010	**0.00**	**0.00**
Current Basic Charges		
The Illuminating Company - Consumption		**1,115.26**
Total Due by Feb 10, 2010 - Please pay this amount		**$1,115.26**

To avoid a 1.50% Late Payment Charge being added to your bill, please pay by the due date.

Bill issued by:
The Illuminating Company
PO Box 3638
Akron OH 44309-3638

Customer Service	1-800-589-3101
24-Hour Emergency/Outage Reporting	1-888-544-4877
Payment Options	1-800-686-9901

visit us on-line at www.firstenergycorp.com

Your current **PRICE TO COMPARE** for generation and transmission from The Illuminating Company is listed below. For you to save, a supplier's price must be lower. To obtain an **"Apples to Apples"** comparison of available competitive electric supplier offers, visit the PUCO web site at www.PUCO.ohio.gov.

Residential Service - 1810030564 **4.82 cents per kWh**

See other sides for additional information and telephone numbers

The Illuminating Company
A FirstEnergy Company

Return this part with a check or money order
Payable to The Illuminating Company

Account Number: 110028580345

Amount Paid	
Please Pay	**$1,115.26**
Due By	**February 10, 2010**

**********AUTO**5-DIGIT 44023
00000504 01 AV 0.332
WILLIAM A ARCURI
16515 AUBURN RD
AUBURN TWP OH
44023-2505

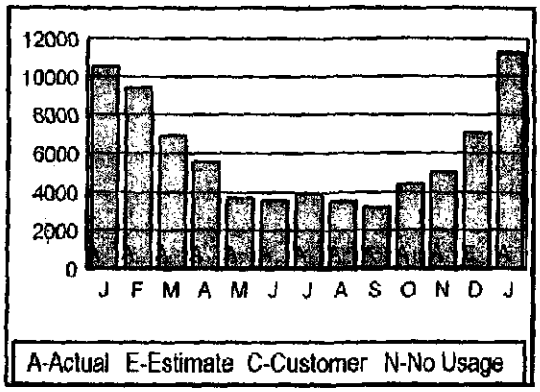
THE ILLUMINATING COMPANY
PO BOX 3638
AKRON OH 44309-3638

0411002858034500000000000000000000001115260001115266

Invoice Number: 90202069477

Usage Information

Usage Comparison



Historical Usage Information

Jan 09	10,534	Jul 09	3,915
Feb 09	9,424	Aug 09	3,512
Mar 09	6,899	Sep 09	3,228
Apr 09	5,580	Oct 09	4,417
May 09	3,698	Nov 09	5,039
Jun 09	3,549	Dec 09	7,061
		Jan 10	11,263

	Jan 09	Jan 10
Average Daily Use (KWH)	329	322
Average Daily Temperature	22	29
Days in Billing Period	32	35
Last 12 Months Use (KWH)		67,585
Average Monthly Use (KWH)		5,632

14

From: Margaret Gift <peggift1@gmail.com>
To: Bobbie.Gilbert@ohr.state.oh.us
Cc: DICK <docgift@gmail.com>; peg gift <PGMSG43@aol.com>; Rich Jordan <rfjind@roadrunner.com>
Subject: eletric rate changes
Date: Thu, Feb 11, 2010 11:00 am

Dear Ms Gilbert:

My name is Richard Gift and my wife (Margaret) and I are writing to you to convey our extreme anxiety and almost panic over the recent loss of our all electric residential rate and the drastic increase in electricity bills.

We purchased this home in 2003. It is in Waite Hill and Lake County. At the time we were concerned that it was an electric home because we had preconceived notions that it would be expensive but as we researched it, we found out that it was very comparable to gas heated homes in large part because of the discount afforded to homes that were entirely electric. So, we bought the house knowing that we were going to need to replace it's appliances and heating/cooling systems in time. We had the option of staying with electricity or converting to gas. We contacted The Illuminating Company to explore the costs of each option and were told by them that as long as we kept our home all electric, that we would continue to receive the all electric residential discounted rate. Consequently, we decided to stay with electricity.

We have since replaced the kitchen stove and oven ($6,000), the air conditioner system ($4,500), two hot water heaters with re plumbing ($2500) and just recently our heating system with two electric furnaces ($17,000). We have done so with the assumption that our electric rates would continue and be affordable.

Before the rate change, our all electric residential rate was 1.9 cents/kWh and it did not vary. Since the change, it varies monthly but ranges from 4.64 cents/kWh to 7.78 cents/kWh. Our December/January electric bills before the 2009 change were $846 in 2004, $767 in 2005, $920 in 2006, $653 in 2007, $806 in 2008, $914 in 2009 but our 2010 bill is $1758!!! Basically, it has doubled and is at a level ($1,000 more) that is unsustainable for us and leaves us with very poor choices, all of which will be financially disastrous for us. To change over to gas would involve losing the above mentioned investments and cost thousand more to replace plus the cost of bringing gas into the house. To sell the house would be even more costly because this is going to drastically reduce the value of our home. No one will want a home with a nearly $2000 winter month heating bill or face the cost of changing it over to gas without a huge discount on the home price. And this is on top of the already difficult and depressed housing market. So, we can't afford to stay and we can't afford to sell! We are forced to keep our home dark and cold!

We feel that this action by First Energy, PUCO and the OCC is particularly unfair because First Energy is essentially a monopoly for our region. Unlike gas consumers, we have no other options and they can charge whatever they want and we have to buy it. It would be fair if we knew the charges beforehand, but to change them so drastically after our enormous investment is just not fair.

We have read arguments from Puco in the newspaper that say some consumers should not subsidize other consumers but this is just a rationalization for price gouging because there are endless examples of quantity discounting in our market place. We hope that Rep. Lundy will do all that he can to to reverse this Puco and First Energy decision which placed such financial hardship on us and many other people.

Sincerely,

Dr. & Mrs. Richard Gift

7621 Eagle Mills Rd
Waite Hill, OH 44094
440-256-2666

Peggift1@gmail.com

3 pages

15

Judy and Ron Neuger

February 13, 2010

Dear Mr. Grendell,

Thank you for all the work you are doing on behalf of all of us who are CEI electric discount customers.

I have faxed our January 2009, before the increase, bill and our January 2010, after the increase, bill.

We put in a GEO thermal heat pump system several years ago with a series of deep drilled wells to capture earth heat. The extra expense for this type of system versus a high efficiency gas system which we already had made sense with the all-electric discount. We would have remained on gas if not for the better electric rate.

The sales person was aware of the special rate that CEI offered customers who use a lot of electricity. We converted to the expensive electric heat pump system because of the special rate. He also said that CEI had lead his company, Apple Heating, to believe that people with the all electric rate would be grandfathered in. This conversion from high efficiency gas furnaces, in addition to the monthly bills, has cost us a lot of money.

Whatever you can do to get CEI to be responsible and live up to its commitments would be greatly appreciated. While you're at it, please look into the effectiveness of PUCO. My experience with them was not pleasant. They are not a public commission.

Thank you so much.

Regards,

Judy & Ron Neuger

Judy and Ron Neuger

4500 Chagrin River Road Moreland Hills OH 44022

440-247-4440

jneuger@roadrunner.com

Q. I am thinking about selling my house. Would the buyer be able to continue receiving the discounted electric rates?

A. Unless the transaction is completed before April 1, 2006, the discounted rates will not be applied to the buyer's account. The new customer will be billed on one of our standard residential rates.

Q. I have been planning on building a new home for several months now and won't be able to have the electric wired until mid-summer. Can I apply for the discount now?

A. Grandfathered rates will not be available to you unless you have your electrical inspection of the permanent service submitted to the company and service in your name by March 31, 2006.

Q. Being a builder, what should I do to ensure that my customers will be eligible for the discounted electric rates?

A. To ensure that your customers will receive the grandfathered rates, you should have the electrical inspection submitted to the company on or before March 31, 2006. Also, the application for service should be made in the homeowner's name because the discounted rate will not transfer from the builder to the homeowner after March 31, 2006.

Q. When you say the term "grandfathered," does that mean forever?

A. The term "grandfathered" does not mean forever. However, as long as the rate remains in effect and you remain in the home using the qualifying equipment, you will receive the rate.

Q. Other than the bill insert and bill message, how will customers be informed about these changes?

A. A letter is being sent to those customers with pending applications for the special electric heating, water heating and load management rates. As always, customers can talk with one of our Customer Service Representatives by calling our toll-free number.

the Illuminating Company
A FirstEnergy Company

2/06

Important Information

for Customers on Electric Heating, Water Heating and Load Management Rates

17

Mike Payne Builder

Illuminating Company and Ohio Edison Marketing Brochures

PUCO Hearing for 10-176 at Lakeland College

November 23, 2010

LETTER TO SHARE OWNERS OF THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

by K. H. Rudolph, President
Reprinted from the
1975 Annual Report
April, 1976

To the share owners of The Cleveland Electric Illuminating Company

None of us, in this year of America's Bicentennial, needs to have the word 'freedom' defined. We know what it means — and how much it means.

What we may be in danger of forgetting is that the word, as used by the signers of the Declaration of Independence, had broad connotations. It did not mean political freedom alone. It meant the freedom of a man to work in his chosen craft, of a business to organize and operate in a climate conducive to growth.

Freedom, in the context of 1776, was not only the physical act of separation from Great Britain — it was the ideal and temper built into the economic framework of the new nation coming into existence.

The nation has changed, however, in these 200 years. The framework has been remodeled; the structure has grown larger. We are living today in an age of relative cynicism, an age when almost all values, once considered fundamental, are being challenged. Is our traditional system of morality still valid? Is the democratic form of government the best form of government? Is the free enterprise system still better and more efficient than a controlled economy? These are serious questions today because they reflect both serious doubts and underlying problems.

One of the constructive things Americans may be doing in this commemorative year is facing up to these problems.

That, in a parallel sense, is the purpose of this letter. As in the nation, there are major problems in the electric utility industry today. They include areas as diverse as inflation, financing of new plant and equipment, lack of timely rate relief and unrealistic environmental standards. We are working to solve

these problems and you, as share owners, have a very real stake in their ultimate resolution. That is why, as in previous years, I wish to discuss them with you now. Let's begin with the problem which goes to the heart of our business.

THE ENERGY CRISIS: *It is real. It is international in scope. Its duration will not be a matter of years but, in all probability, of decades. The crisis arises from the fact that the United States, which has long relied on petroleum and gas for the greater portion of its energy requirements, is contending at the same time with diminishing domestic supplies and the constant threat of petroleum cut-off from foreign sources.*

It is now generally recognized that these resources must be used essentially for purposes only oil and gas can serve. It is also recognized that the nation must rely more and more upon fuels it currently has in greater abundance — principally coal and, to a lesser degree, uranium — and that the energy derived from these fuels can best be utilized in the form of electric power. ***Ultimately, our nation will most effectively resolve the energy crisis by moving towards a more nearly total electric economy.***

In one sense, this is an enviable position for our industry to be in. *In another sense, the position has its own elements of crisis — for the industry must contend with challenges which could impair its primary objective of generating and delivering electric power. These challenges include:*

FINANCING: *The electric utility industry is the most capital-intensive in the nation. To obtain one dollar of revenue, an average of four to five dollars must be invested in power plants, equipment and other capital facilities. In recent years, during a period marked by rampant inflation and mounting capital costs, utilities have been forced to issue stock and borrow money in larger amounts than ever before, and at rates nearly double those paid a decade ago.*

The need for capital will continue, if not intensify, because the demand for electric power in the nation will increase. In our own service area of Cleveland-Northeast Ohio, demand is expected to double in the next 13 years. This means that we must construct new generation and distribution facilities, and that a large proportion of the money to build these facilities must be raised in the marketplace with attendant high

capital costs. These financing costs add to the total cost of producing electricity and ultimately are reflected in the consumer's electric bill.

FUEL AND ENVIRONMENTALISM: *These problems are directly related. Our industry will rely heavily on both coal and uranium for the generation of electric power. In the matter of coal, we are being required to take action on a problem, namely sulfur dioxide pollution, which has not yet been proved a threat, with equipment not yet available, within the restriction of a time limit we cannot meet, and at a cost disproportionate to resulting benefits.*

Nuclear power has been under attack since the first nuclear plant went into operation in 1957. Nevertheless, it has proved to be safe and environmentally clean. The extensive use of nuclear power can appreciably reduce our reliance on dwindling supplies of oil. One 1,000-megawatt nuclear plant, for exampl can save the equivalent of an estimated 10 million barrels of oil a year. The long-range future of this form of energy, however, depends upon the development of the fast-breeder reactor without undue delay.

The concept of a clean environment is admirable. The present mode of achieving it, however, is having both a costly and a crippling effect on the nation's economy. Our Company alone, for example, expects to spend about $270 million over the next five years on environmental improvements and pollution control facilities, an expenditure which, with the cost of operating these facilities, will add significantly to the cost of service. The ratio here is one of extremely high costs to minimal and questionable benefits — costs which, without exception, must be factored into the price of electricity to the consumer.

In addition to the facilities-cost factor, there is the cost factor of time delays. Roadblocks created by environmental groups, together with the amount of excessive governmental regulation involved in putting a new nuclear plant in operation have created construction delays of more than five years. The paradox of environmentalism is that, although desirable in itself, its harsh implementation in all industries is having a destructive effect on our economy at a time when that economy most needs an infusion of strength.

RATES AND REGULATIONS: *Electric rates must be increased if utilities are to secure the financing necessary to build new plants and facilities. Without such financing the facilities cannot be built. The primary problem in securing adequate rates involves the time lag in the granting of increases. In recent years this has been overly long. During the four-year period, 1971-1974, for example, nearly 25 per cent of rate negotiations in the U.S. required longer than a year to conclude.*

In addition to the effects of time lag, Ohio utilities are faced with a probable change in rate-base law, with attendant uncertainties in interpretation of new regulations. Under the present Ohio law, the base is calculated according to a formula known as RCND, Reconstruction-Cost-New-Less-Depreciation; that is, the cost to a company of replacing all its property at today's prices, minus depreciation. In some states, valuation is computed on an Original Cost or on a Fair Value basis. Ohio utilities favor RCND. It is sound; it reflects the realities of the marketplace; the concept behind it is used by almost all businesses in costing their products and in arriving at the tax and insurance value of their properties. Despite the fact that utility rates in Ohio compare favorably with other parts of the nation, there exists a political atmosphere for change. The rate-base issue is now before the State Legislature and in all likelihood will be acted upon in 1976.

All of these factors are part of the critical situation facing the electric utility industry. They are interrelated. They have had the serious effect of forcing many utilities to defer construction schedules, cancel planned generation and transmission facilities, and lay off employees. As a result, should future load levels increase beyond those currently projected by the industry, there could be severe and widespread shortages of electric power in the 1980's.

A REALISTIC ANSWER *to these industry problems involves a number of elements. Capital is a major need in the utility business today, for the industry is generating relatively less and less money to plow back into the facilities needed to serve our customers. Measures which will stimulate savings, encourage investment in capital goods, increase cash flow and improve regulation are necessary. For example:*

- *The investment tax credit for our industry should be increased from 10 to 12 per cent and extended indefinitely.*
- *As utility construction expenditures are incurred,*

depreciation should be permitted for tax purposes.

- *Expenditures for work-in-progress should be included in the rate base.*
- *The five-year, fast write-off of pollution control facilities should be continued.*
- *Share owners should be allowed to defer personal income taxes on utility common stock dividends which are reinvested in new issues of common stock.*
- *Stringent environmental restrictions should be eased to allow utilities to burn high-sulfur coal.*
- *Procedures should be streamlined in order to permit more nuclear plants to be brought on line more quickly.*
- *The process of regulation should be accelerated.*
- *Finally, and perhaps most necessary of all, a comprehensive National Energy Policy should be adopted to bring order out of the energy dilemma.*

These measures will not solve our industry's problems, but they will go a long way toward doing so. Many of them are now under consideration by Congress. Our industry, through its representative body, the Edison Electric Institute, is supplying legislators with the necessary information and background to enable them to reach a fair decision. You, as share owners, should also interest yourself in these matters and make your opinions known. I urge you to do so.

THE FUTURE: *In view of the challenges faced by the electric utility industry today — what of the future?*

I am optimistic.

Nationally, the economic climate is improving. Recovery from the recession is underway and should continue at a moderate rate. With the exception of unemployment, the general outlook for the economy in 1976 is for an improvement from last year. Long-term predictions for consumer durables and capital goods — business sectors in which Cleveland is strong — are that they will be growing faster than the Gross National Product.

I am also optimistic about the future of our industry.

There is — particularly at the Federal government level — a growing awareness of the industry's plight. Rate increases, while slow, are in general of a magn[illegible] that indicates recognition of the problem. Financial markets are improving. The industry itself is thinking creatively in terms of better energy management. There is also a change in certain important attitudes among consumers of electric power. People today, for example, are more conscious of the need for adequate future power supplies than they were four years ago. Surveys show that there is now majority support both for nuclear plants and for their construction by local companies rather than by the government.

Altogether, 1975 might be termed a year in which hope, rather than tangible achievements, characterized the industry. But the hope was solidly based.

I am optimistic finally, because in spite of the challenges faced by our industry, it has both the opportunity and the ability to become the supplier of the most important energy form of the future.

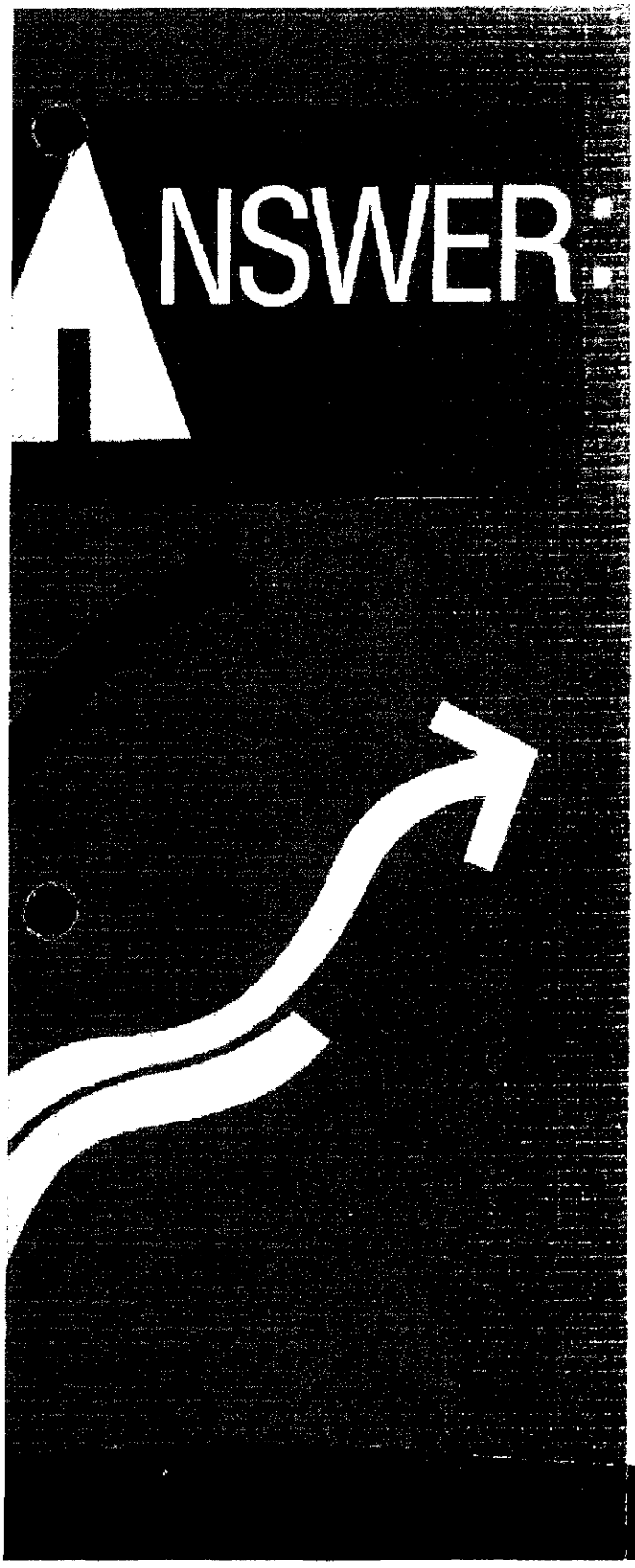
Electric power must be available in blocks large enough to meet the needs of an electrically-geared nation. And it will be. At The Illuminating Company we are [illegible]ing our share to bring this about.

Sincerely,

Karl H. Rudolph

February 18, 1976

Karl H. Rudolph
President



MOST FOLKS.

This brochure tells the whole story on the unmatched comfort, efficiency and economy you get with a flameless electric heat pump, especially if you already have a regular heating system.

The Illuminating Company

flameless electric add-on heat and cool pump, in combination with your present heating system, can bring to your home the most comfortable, most energy efficient, most affordable heating and cooling system available today.

This modern, high tech, state-of-the-art comfort system, working with your gas, oil or propane fueled furnace, will keep you more comfortable, at lower cost, than you have been in the past. Look into it. You'll be glad you did.

[illegible] today, among [illegible] efficiency [illegible] aspects of [illegible]

YOU OWE IT TO YOURSELF TO LOOK INTO THE ADD-ON HEAT AND COOL PUMP.

The following pages describe in detail how this comfort system can be a great benefit to your family on a year-round basis.

If, in order to make a completely informed decision regarding your own heating requirements, you need additional information, feel free to call The Illuminating Company and ask for a residential heating specialist to discuss your specific situation. There is no cost or obligation for this service. The Illuminating Company can also provide you with a list of qualified "CARE" heating and cooling contractors - contractors who are committed to providing: **C**omfort **A**nd **R**eliability in **E**lectric heating and cooling installations.

When is the best time to look into the add-on heat and cool pump?

- *Whenever you decide to replace or add a central air conditioning system.*
- When you're about to replace a worn out forced air furnace.
- When you're shopping for a new home.
- At any time that you decide to increase the comfort, efficiency and economy of your present heating system.

THE ADD-ON HEAT AND COOL PUMP OFFERS TOTAL COMFORT – YEAR ROUND AT LOWER COSTS.

If you're considering a new central air conditioning system or thinking about replacing your present one, you owe it to yourself to look into the high efficiency add-on heat and cool pump.

By adding it to your present furnace, you optimize the efficiency of both your heating and cooling system. In summer, the "cool" pump serves as a central air conditioner, removing warm air and humidity from your home. In cold weather, the "heat" pump comes on automatically to provide comfort down to about 30°F outdoor temperature. Below 30°F, the gas or oil furnace takes over to provide for your heating needs.

You see, your furnace is designed to work most efficiently when it's below 30°F outside. But above 30°F, when a furnace is much less efficient because of constantly cycling on-off, it's the add-on electric "heat" pump that reaches peak heating efficiency. The system's automatic selection of energy sources provides you with the least expensive means to warm your home . . . no matter how severe the weather.

HERE'S HOW IT WORKS TO SAVE YOU MONEY.

When you add a high efficiency add-on electric heat and cool pump to your present furnace, a separate meter is installed to record only the electricity used by the add-on heat and cool pump. This separate meter allows us to record electricity usage and bill it to you at a special discount rate – in the summer for cooling, in the winter for heating.

Using this separate meter and taking advantage of the discount electric rate, you'll realize savings of 30% to 70% for water heating and savings of up to 18% for summer cooling.

The money you save on your gas or oil bills during the winter heating months may more than pay for your whole house cooling in the summer. In fact, it may be cheaper than air conditioning.

HOW IT WORKS IN CONCERT WITH YOUR PRESENT HEATING SYSTEM.

[illegible] heat pump will work in combination with your oil or natural gas [illegible] furnace or any other ducted system. Each operates when it's most efficient.

[illegible] *outdoor temperature is warm to hot*, the heat pump [illegible] *cooling*.

[illegible] mid-range outdoor temperatures, the heat pump [illegible] your *heating* requirements.

[illegible] outdoor temperatures are at their coldest, your [illegible] can take over the heating duties.

THE BALANCE POINT IS A KEY FACTOR.

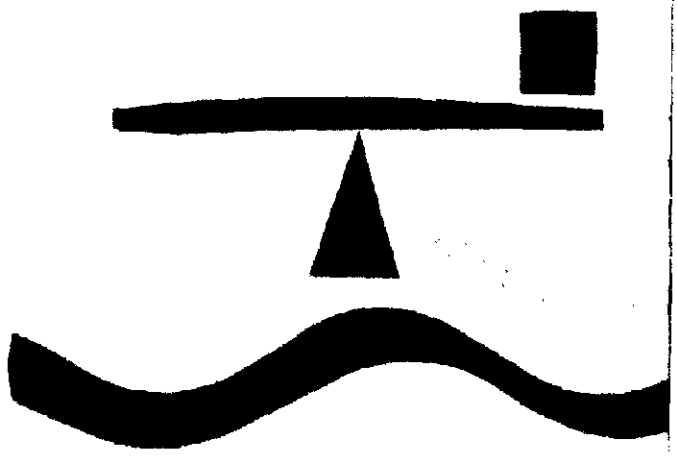
[illegible] point is expressed in terms of the [illegible] outdoor temperature [illegible] the heating requirements [illegible] heating requirements are [illegible]

[illegible] most used most often [illegible] is 30°F. On normal fall [illegible] temperature is likely to be above 30°F [illegible] *works out* to be the most [illegible] So on days when the [illegible] 30°F the add-on heat pump can [illegible]

[illegible] heat loss of your home may be [illegible] heat pump. On those days [illegible] take over. As a matter of fact [illegible] designed to work best when it's [illegible] gas or oil furnace becomes [illegible] instantly cycling on and off. [illegible] add-on heat pump reaches its [illegible]

[illegible] on a number of variable factors [illegible] heating system you now have, the [illegible] future and the way your home is [illegible]

[illegible] is that by taking advantage of the [illegible] heating systems, you'll get greater economy [illegible] and, of course, greater comfort. It's [illegible]



ENERGY EFFICIENCY

The add-on heat and cool pump is very different from your typical fossil fuel burning furnace. It heats differently. It doesn't produce heat. It moves heat and that's easier and less costly than producing it.

There's a substantial amount of heat in winter air. In fact, the air at 0°F contains about 89% of the heat that is available in air at 100°F. A heat pump extracts this heat from the outside air and pumps it into your home and circulates it throughout the house. You get higher efficiency because the heat is free to begin with as it comes from the sun.

Since the heat pump is transferring heat, rather than creating heat, it can produce up to three units of heating for each unit of electricity used. That's 300% efficient.

By comparison, the majority of gas or oil furnaces in operation today only range between 50% and 70% efficient. That means you get only 50¢ to 70¢ worth of heat for every dollar spent on heating energy. That's not a very good deal.

A heat pump, on the other hand, produces up to $3 worth of heat energy for every $1 worth of electricity it uses. That's real energy efficiency! The highest efficiency you can get, in fact, from any conventional residential heating system on the market today.

YEAR ROUND COMFORT IS ANOTHER KEY FACTOR.

One of the biggest advantages of the add-on heat and cool pump is its ability to provide summer air conditioning. In fact, if you are thinking about replacing an old central air conditioner, the add-on heat and cool pump should be the first option you investigate.

For only a slightly larger investment as you would make just to keep your home cool, you could have an add-on heat and cool pump that would both cool your home in summer and heat it during the spring, fall and winter.

The add-on heat and cool pump looks and operates like a central air conditioner. It is sized based on your cooling needs and will provide all of your heating needs down to an outdoor temperature of about 30°F. Below that temperature, your present furnace takes over.

So it's easy to provide for an add-on heat and cool pump in your future. Whatever the size, age or style of your home, if it has reasonably good insulation and the ductwork is properly sized, your home is a prime candidate for adding the advantages of the add-on heat and cool pump.

While heat pumps have been around for more than 40 years, manufacturers have continuously improved upon their efficiency, performance and durability.

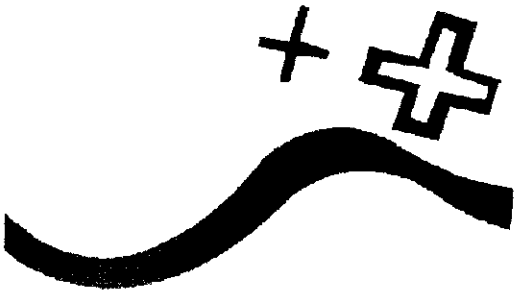
Also noteworthy is the fact that add-on heat and cool pumps are being installed today in all kinds of commercial buildings as well as residential homes. You'll find them in office buildings, stores, supermarkets, hotels, restaurants, nursing homes, hospitals and schools.

THE HEAT PUMP IS IDEALLY SUITED FOR NEW HOMES.

[illegible] to buy or build a [illegible] the benefits and advantages of the [illegible] right at the outset before you start [illegible]

AND THERE ARE MORE BENEFITS...

- CLEAN. Because there's no combustion, there's no soot [illegible] no oily film. Walls, furnishings and draperies remain [illegible] looking and clean longer.
- COMFORT. The air supplied by a heat pump is [illegible] temperature permitting the heat pump to run [illegible] longer period of time. This results in even temperatures in each room and overall comfort throughout the home.
- FULLY AUTOMATIC. You can set the temperature [illegible] want and your heat pump will maintain it.
- LOWER OPERATING COSTS. The Illuminating Company has special electric rate discounts which make [illegible] costs lower with a heat pump.



[redacted]

There used to be a myth that heat pumps are unjustifiably expensive to install. The fact is that when you compare the costs of a new high efficiency electric heat pump with the costs of a high efficiency gas furnace plus a high efficiency air conditioner, the installed costs for heat pumps are just about the same or less. The benefit of a heat pump is that you don't have to buy a separate cooling system. *You already have one.*

OPERATING COSTS ARE HIGHLY COMPETITIVE WITH GAS.

[illegible] that claim. For example, [illegible] of 157 nearly identical homes all [illegible] heated. Some of the homes had [illegible] air conditioning. Others were [illegible]

[illegible] usage of gas and electricity. [illegible] heated homes and electrically [illegible] throughout one year.

[illegible] energy costs for [illegible] less than for the [illegible]

[illegible] through the [illegible] Budget Billing Program [illegible] Budget billing [illegible]

THERE'S NO QUESTION ABOUT HEAT PUMP RELIABILITY.

Today's modified and simplified heat pumps have been making a very strong showing in various reliability tests. Attesting to their strong reliability, in fact, are the extended service contracts offered by several manufacturers after the usual one-year warranty expires. These contracts are at the same cost (sometimes lower cost) as equivalent service contracts on gas or oil furnaces with central air conditioning. It now is common to get a ten-year limited warranty on selected brands of heat pumps.

A recent study of about 600 actual heat pump installations in the Chicago and northern Illinois area, sponsored by the Electric Power Research Institute, disclosed a service life of about 16 years. Many of the heat pumps had been in service for over 26 years.

By contrast, the recently introduced gas furnaces which promise high efficiencies still have a long way to go in achieving acceptable reliability. Research conducted in the U.S. and Canada of medium and high efficiency gas furnace models has revealed s[illegible] problems: corrosion, discomfort, component failures, high maintenance costs and other problems.

THE HEAT PUMP NEEDS NO MORE MAINTENANCE THAN A CENTRAL AIR CONDITIONER.

Like any other piece of equipment with moving parts, a heat pump will require a little of your attention now and then. Filters should be cleaned and changed and the outdoor coils should be kept free of grass and debris.

And, like any other piece of equipment, it should be inspected by a qualified service person once or twice a year in order to assure peak efficiency and a long, trouble-free working life.

But, by and large, the heat pump is a very hardy piece of equipment and it requires relatively little maintenance to keep it in fine working order.

In fact, many maintenance programs now are available on heat pumps at the same cost as those offered by the contractor on regular air conditioners. And the air conditioners, remember, are used only during the summer.

ONLY THE BEST INSTALL THE BEST.

It's also good to know that, if you decide to have a heat pump installed in your home, you can rest assured that the work will be performed by a thoroughly trained, knowledgeable and competent contractor who is an expert on heat pumps. All you have to do is select a contractor who is participating in The Illuminating Company's CARE program, which means **C**omfort **A**nd **R**eliability in **E**lectric heating and cooling installations.

Those CARE contractors have been trained to perform this work in a professional manner according to heating equipment manufacturers' specifications. More than 70 contractors have passed the special heat pump competency test of the Refrigeration Service Engineers Society. Their commitment to

[illegible] installations and service [illegible] So make sure that you deal with [illegible] to provide you with a list of [illegible]

YOU REALLY SHOULD GIVE THE HEAT PUMP SERIOUS THOUGHT.

[illegible]

If you are considering replacing a worn out air conditioner or forced air furnace, or if you are shopping for a new home, or if you just want to upgrade your heating system, we recommend that you consider the modern, efficient heat and cool pump.

For additional information, call The Illuminating Company at 1-800-589-2222 and ask for the heat and cool pump hotline. There is no cost or obligation for all the information you need to make a completely informed decision regarding a cool pump.

The Illuminating Company

[illegible]

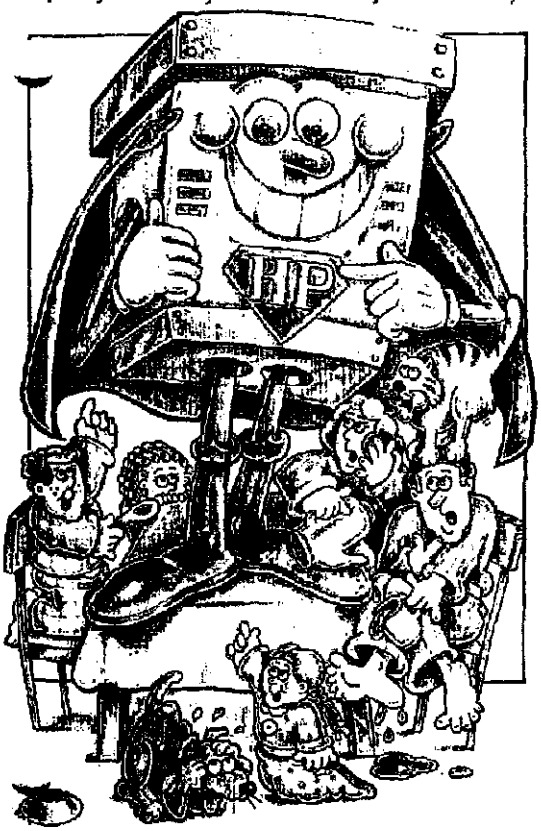
A Centerior Energy Company

UESTION

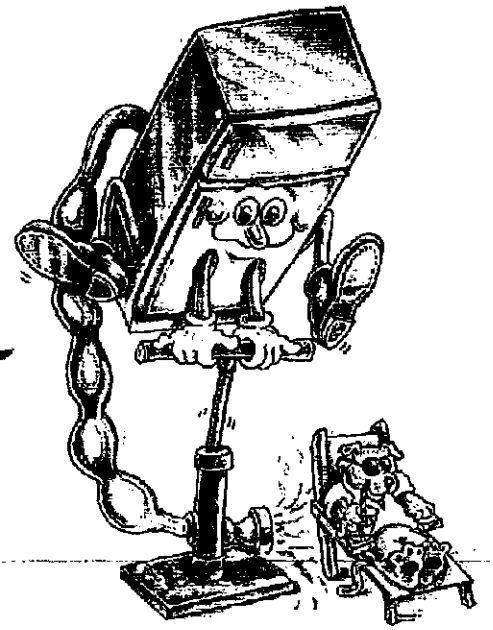
"Since most folks already have a heating system, who needs a heat pump?"

THE AMAZING ELECTRIC HEAT PUMP

(Did you know you had one in your kitchen?)



The Illuminating Company



Your household refrigerator is a "one-way" heat pump

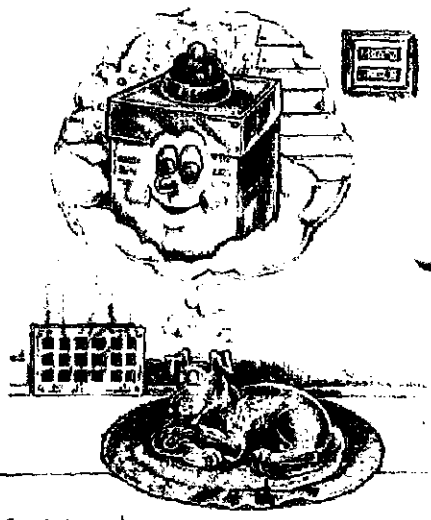
Although it may seem that a refrigerator is creating "coldness" inside the appliance, it is actually simply removing heat from inside. When this heat is removed or "pumped" out of the interior of the refrigerator, the temperature inside drops. If enough heat is pumped out, the temperature inside the refrigerator can reach the freezing point and below.

Refrigerators "pump" this heat into the room. You can feel that it's warmer behind the refrigerator. Heat pumps work much the same.

Heat pumps are "two-way" refrigerators. Just as the mechanism in a refrigerator can collect the heat inside the appliance and transfer it to the outsi the heat pump can collect heat from the outside home and transfer it to the inside (or it can "pump" heat out of your home to cool it).

Many people are surprised to learn that there is heat in even the coldest arctic air. However, we know that even at below zero air contains considerable heat **which is usable** by the heat pump. For example, at 0°F. air contains 89% of the heat available at 100°F. And although it may not seem so, the average winter temperature in northern Ohio is 37°F. That's well into the efficient operating range of a heat pump.

The heat pump's ability to capture and transfer existing heat, rather than creating heat, makes it the only climate conditioning system with efficiencies over 100 percent. Some heat pump systems even attain efficiencies of 300 percent, meaning for every three units of heating the heat pump provides, only one unit of equivalent electrical energy is needed. By comparison, the efficiency of the great majority of existing gas or oil furnaces in operation today is only about 50 percent on an annual average.

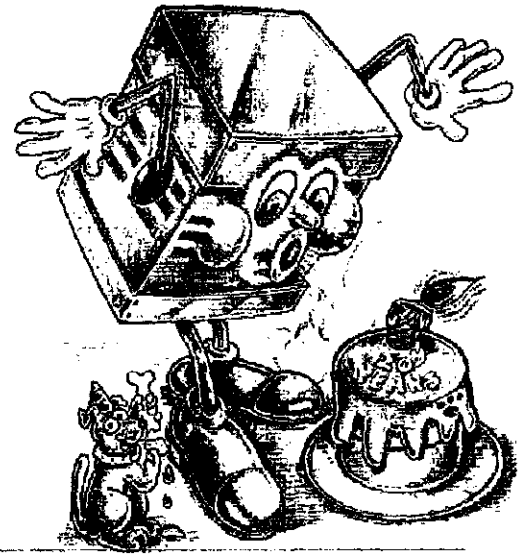


Comfort to please

You set your own temperature level and the electric heat pump will maintain it. The lower air temperature at the register means a more even distribution of warmth throughout the room, without hot and cold spots. But if you set the thermostat at 70°, be assured that the room temperature will be 70°.

Heat pumps have built-in electric heating elements to supplement the transfer of "free" outdoor heat into your home. They come on automatically when extremely low outdoor temperatures require it. This assures that your home is always maintained at the desired temperature. During a normal heating season, the heat pump alone can provide up to 97% of heating requirements. The relatively small remaini heating requirement is provided by supplemenl heaters.

Humidity, too, is important to comfort. And here the heat pump delivers again – higher humidity levels in winter, lower in summer when it's cooling. Total comfort the year 'round!

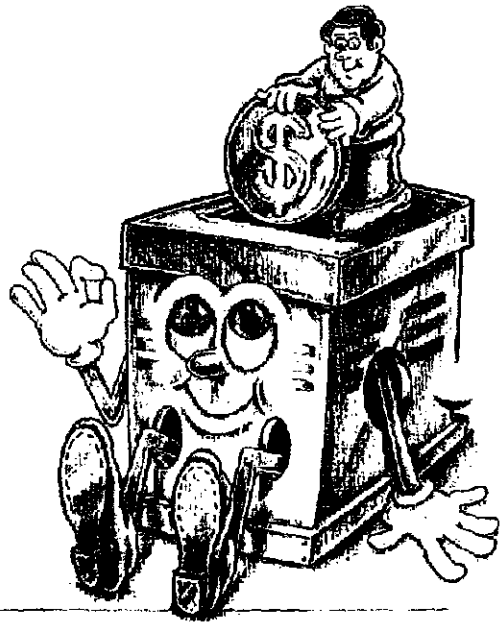


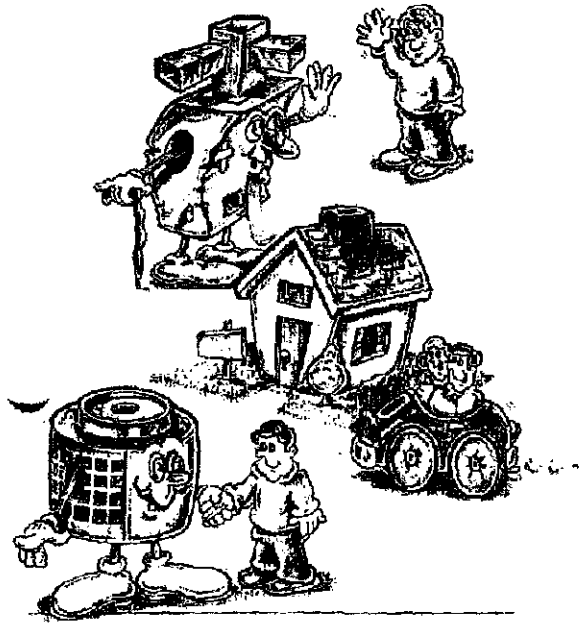
Year after year of reliable service!

A recent study of about 600 actual heat pump installations in the Chicago and Northern Illinois area, sponsored by the Electric Power Research Institute, disclosed a service life of about 16 years. Many of the heat pumps had been in service for over 26 years.

Several manufacturers attest to the reliability of their heat pumps by offering extended heat pump service contracts at the same or lower cost than equivalent service contracts on gas or oil furnaces with central air conditioning. A ten-year limited warranty is now available on some models of heat pumps.

The recently introduced gas furnaces which prom-he high efficiencies still have a long way to go in chieving acceptable reliability. Research conducted in the U.S. and Canada of medium and high-efficiency gas furnace models has revealed serious problems: corrosion, discomfort, component failures, high maintenance costs, and other problems.





The economic choice for today!

Today, electric heat pumps are less expensive to buy and install than most so-called high efficiency combustion type furnaces and central air conditioning.

A study was conducted of 157 nearly identical homes constructed by a major Ohio builder in Northeastern Ohio, some heated with natural gas furnaces with electric air conditioning and some heated and cooled with heat pumps. **The results disclosed that the average annual energy costs for the heat pump homes were about the same or less than the gas-heated homes. The study was based on actual owner usage of gas and electricity.** Furthermore, on an average, the thermostat settings in the electrically-heated homes and the gas-heat homes were virtually identical.

With the electric rates for heating available through The Illuminating Company, you can buy heating energy at a price which is very competitive.

When should you consider an electric heat pump?

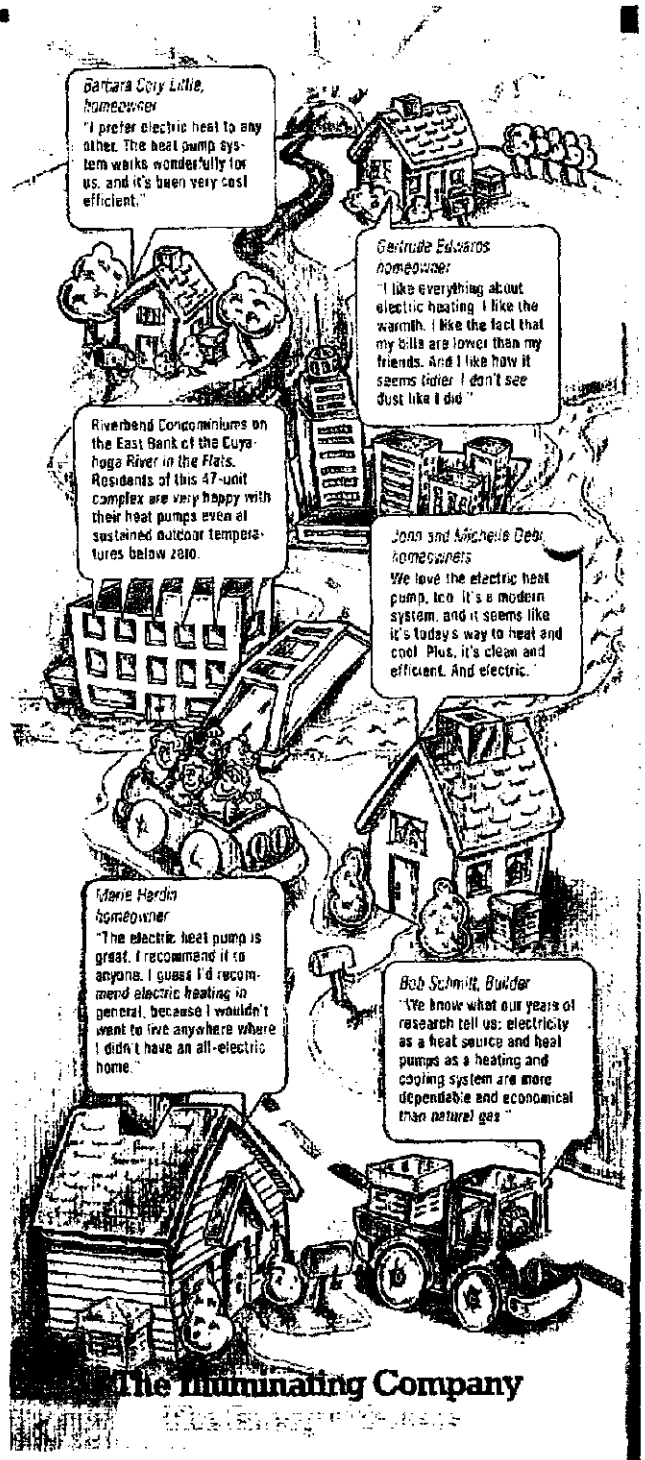
- ***When you're shopping for a new home.***
- **When you're about to replace a worn-out forced air combustion furnace.**
- ***When you're about to replace or add a central air conditioning system.***

You have the opportunity to install an electric heat pump to work right along with your existing combustion furnace. In cold weather, your "add-on" heat pump heats your home until the temperature outdoors drops very low. Then your existing furnace takes over. Thus, you increase the efficiency of your entire heating system while realizing the *added benefit of efficient air conditioning in the summer months.*

THE HEAT PUMP IS THE MOST AFFORDABLE AND COMFORTABLE YEAR-ROUND COOLING AND HEATING SYSTEM AVAILABLE TODAY.

For further information call or write a heat pump contractor, or call The Illuminating Company.

Cleveland: 447-2538 Painesville: 354-5661
Ashtabula: 1-800-331-5487

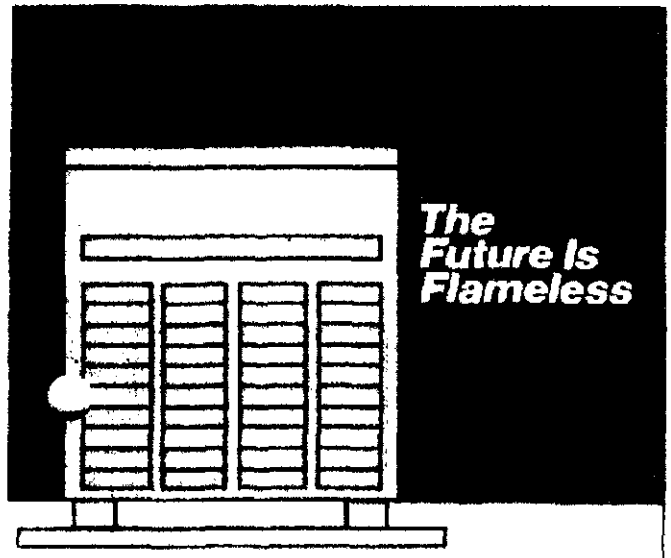

Barbara Cory Lollie, homeowner
"I prefer electric heat to any other. The heat pump system works wonderfully for us, and it's been very cost efficient."
Gertrude Edwards homeowner
"I like everything about electric heating. I like the warmth. I like the fact that my bills are lower than my friends. And I like how it seems tidier. I don't see dust like I did."
Riverbend Condominiums on the East Bank of the Cuyahoga River in the Flats. Residents of this 47-unit complex are very happy with their heat pumps even at sustained outdoor temperatures below zero.
Joan and Michelle Debi homeowners
"We love the electric heat pump, too. It's a modern system, and it seems like it's today's way to heat and cool. Plus, it's clean and efficient. And electric."
Marie Hardin homeowner
"The electric heat pump is great. I recommend it to anyone. I guess I'd recommend electric heating in general, because I wouldn't want to live anywhere where I didn't have an all-electric home."
Bob Schmitt, Builder
"We know what our years of research tell us: electricity as a heat source and heat pumps as a heating and cooling system are more dependable and economical than natural gas."
The Illuminating Company

HOW YOU CAN BENEFIT FROM

An electric heat pump in combination with a gas or oil furnace

WITH

POWERCOMMANDER



If you have a gas or oil furnace, you can convert it to a dual fuel heating system by adding an electric heat pump. An electric heat pump will heat and cool your home and when used with Ohio Edison's Power Commander can reduce your heating costs. Through the use of modern electronic equipment supplied by Ohio Edison and installed by a qualified contractor, Power Commander enables you to save on your heating costs without affecting comfort or lifestyle.

Q. *Who can benefit from Power Commander?*

A. *You may be able to benefit if you install an electric heat pump in combination with your central gas or oil furnace to provide heating and cooling. By choosing this option you can reduce your cost of heating through reduced electric costs.* *(Power Commander rate option is not available in combination with a whole house load control).*

Q. *First, how does an electric heat pump work?*

A. *The electric heat pump supplies year round comfort; it provides heat to a home during cold weather and removes unwanted heat and humidity during warm weather. An electric heat pump can work in combination with a central gas or oil furnace.*

Q. *What makes the electric heat pump so efficient?*

A. *An automatic electronic control determines when the electric heat pump is more economical than your present oil or gas furnace and signals it to begin working. This is generally when temperatures are above 30° (approximately 75 percent of the heating hours). An electric heat pump, when used with your gas or oil furnace in this manner, can save you heating dollars.*

Q. *What does all of this have to do with Power Commander?*

A. *Power Commander allows Ohio Edison to control the operation of your electric heat pump during the heating season. And you won't have to sacrifice comfort or convenience. In fact, in most instances you won't even know your equipment is being controlled since heating for your home will not be interrupted. The benefit to you is a 3 KW reduction in your measured load which results in a lower cost to heat your home.**

Q. *How much can I save through the use of an electric heat pump and Power Commander?*

A. *You may save enough on your total winter heating bills (for your heat pump and gas or oil furnace) to pay for the cost of cooling in the summer.*

** The minimum billing load is 4 KW*

Q. *How can I find out more about the cost saving Power Commander?*

A. *Call your local Ohio Edison office and ask for a marketing services representative.*

Q. *Why Power Commander?*

A. *Our generating capacity must be able to handle peak loads. Power Commander allows us to control the electricity to the electric heat pump and turn it off during our peak so that we can reduce the need for additional generating capacity. If we can postpone new generating plant construction, we can reduce future rate increases and pass on savings to you now.*

OHIO EDISON

MKT-10-88

HOW TO GET THE MOST VALUE FROM YOUR NEW ELECTRIC WATER HEATER:

- Have your Electric water heater installed as near the point of use as possible.
- After installing a new water heater, drain a bucket of water from the bottom of your tank every two to three months. This will reduce the build-up of mineral deposits and sediment that causes the heater to loose efficiency and use more energy.
- If you have hard water, consider installing a water softener to prevent mineral deposits from coating the element.
- Turn off your water heater if you're going on vacation for more than two or three days.
- Insulate hot water pipes whenever they're exposed especially when they run through unheated areas such as basements or crawl spaces.
- Install a reduced-flow shower head or add a flow restrictor on your present shower head.
- Keep your water temperature at 140°F if you use a dishwasher, 120°F if you wash dishes by hand.
- Wait for a full load before running one dishwasher or clothes washer.
- Repair leaky faucets promptly. One drop a second can waste 192 gallons of water a month. If the water is hot, you lose not only the water but also the energy used to heat the water—and that water was enough for 19-24 showers.

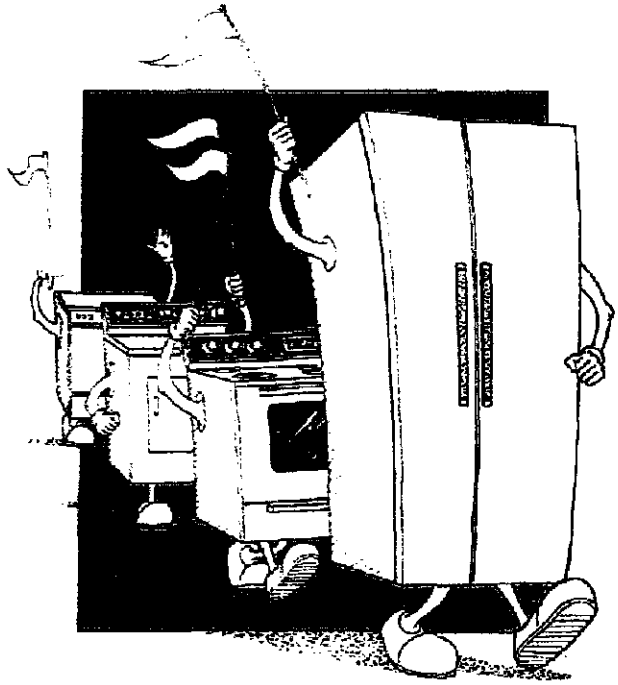
This brochure was prepared by The Illuminating Company and is intended to help you as you shop for your new Electric water heater. If this information doesn't answer all of your questions, we invite you to call the Appliance Answerline at 622-9800, extension 2551. A Home Economist will be happy to talk with you from 8 to 5, Monday through Friday.

HAPPY SHOPPING

The Illuminating Company
The Energy Alternative

YOU GET Everything You Want For Less...

When You Purchase An Electric Water Heater



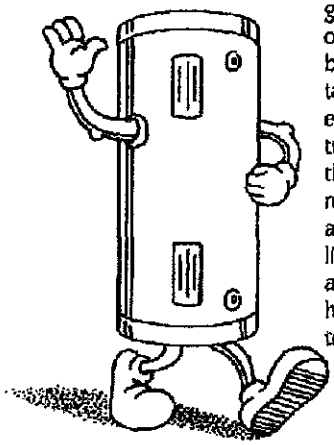
- Extremely High Operating Efficiency
- Completely Safe
- Cool To The Touch
- Doesn't Require a Vent Or Flue
- No Expensive Pilot Lights
- Long Tank Life
- Completely Insulated Tank
- Can Be Installed Any Place For Maximum Efficiency
- Fully Automatic

Flameless Electric Appliances Lead The Way

The second biggest energy user in your home, next to your heating system, is your water heater. So it's important to consider several things when purchasing a new water heater.

Shopping will be much easier if you first make a decision regarding the type of water heater you want. Following are some important facts you should consider.

An ELECTRIC water heater is a beautifully uncomplicated piece of equipment that most manufacturers give a 10-year warranty on. There are only three basic elements; the tank, immersed heating element and temperature controls. Other than the temperature regulating thermostat and the temperature limiting safety switch, an Electric water heater has no moving parts to wear out.



- Only an Electric tank is completely insulated on the top and bottom as well as the sides. It is safe to place anywhere in the house, even where small children might touch it. The outside of the heater is always cool to the touch.
- In an Electric water heater, the heating element is immersed in the water. Because heat is applied directly to the water rather than to the bottom of the tank, efficient operation and long tank life are assured.
- Since it does not require a vent or a flue, and is cool to the touch, you can locate your electric water heater under the stairs, in a small closet or under a kitchen or bathroom counter.

Now that you know all the advantages only an Electric water heater can give you, it's time to consider your household needs and demands for hot water. While there's no set formula for determining the hot water needs of a family, it's wise to estimate your needs generously, and remember to consider future needs. It's a proven fact that demand for hot water grows as the family grows.

The following table lists average amounts of **hot water** used for some common household tasks:

Tub Bath	10-15 gallons
Shower	8-12 gallons
Hair Shampoo	4 gallons
Baby's Bath	5 gallons
Meal Preparation	3 gallons
Hand Dishwashing	3 gallons
Automatic Dishwashing	8 gallons
Automatic Clothes Washing	18 gallons

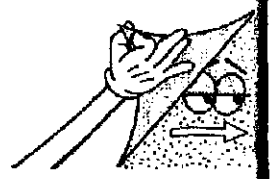
Electric water heaters come in 40, 52, 66, 82 and 100 gallon sizes. Families of 1 to 3 usually find the 52 gallon tank adequate, while families of 4 to 7 usually prefer the 82 gallon size.

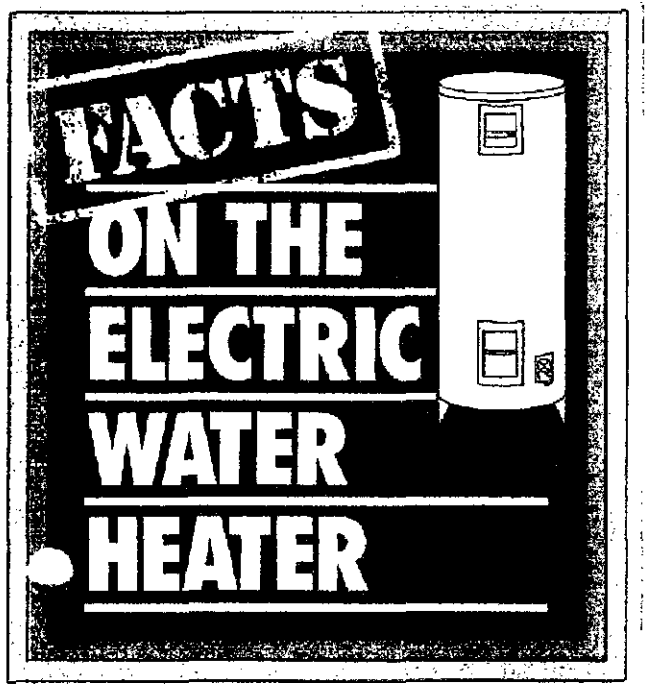
A WORD ABOUT COSTS...

Since ELECTRIC WATER HEATERS have an extremely high overall operating efficiency—almost 100%, it's not unusual to find that the costs of operating one compare favorably with gas, especially with our special water heating and Load Management rates. Utilizing our Load Management Rate at its most advantageous cost, water heating cost can be reduced to 3½¢ per kilowatthour. And on top of that, you have the **big advantages** of low cost installation and maintenance.

ASK YOUR FAVORITE SALESPERSON ABOUT ELECTRIC WATER HEATERS...

YOU'LL BE GLAD YOU DID.





Your electric water heater is probably the most overlooked appliance in your home. As the second largest energy-consuming appliance in your home, it heats water for showers and baths, laundry, dishwashing, food preparation, and other household tasks.

FLAMELESS ELECTRIC WATER HEATING

- Because an electric water heater doesn't require venting, it can be installed anywhere in your home. When placed close to the point-of-use, water line heat losses are reduced.
- New electric water heaters have thick insulation in the walls for maximum efficiency.
- Ohio Edison offers a special rate option, Power Commander, to customers who have 80 gallons of water heating capacity. To find out how you can reduce

HOW TO USE AND CARE FOR YOUR ELECTRIC WATER HEATER

your water heating costs with Power Commander, contact an Ohio Edison representative.

- If your electric water heater is in an unheated area, consider insulating the hot water pipes to reduce heat loss.
- Water heaters are built with some insulation, but you can improve the efficiency by adding an extra layer of insulation. Ready-made water heater insulation kits are available and easy to install. Follow manufacturer's directions.
- If your electric water heater is less than a year old, get in the practice of draining a bucketful of water each month to get rid of mineral deposits that can settle at the bottom of the tank.
- Set your electric water heater at 140°F or lower. For every 10°F you can reduce the temperature setting, you can save 4-6% in water heating energy.
- Use hot water efficiently...

  Whenever possible, wash clothes in warm water and rinse in cold.

  Install a low-flow control shower head.

  Wash full loads in your automatic clothes washer or dishwasher. A full load in an automatic washer uses proportionately less water than smaller loads.

  Repair any leaks in your faucets and hot water pipes.

OHIOEDISON
The Energy Makers

MKT7 87

THE ELECTRIC HEATING DECISION MAKER

Ohio Edison

Dear Customer:

Planning to build a new home? Converting your present heating system? Interested in modernizing with electric heating? This booklet can help you decide which electric heating system is best suited to your family's needs, how to choose insulation that will best contribute to the comfort and efficiency of the electric heating system in your home, and how to save energy and money by operating your electric heating system efficiently.

If you are considering electric heating, we want to make sure that you are completely familiar with all the facts — importance of proper installation, recommended insulation minimums and costs and the many other factors you should consider before you install.

Here's what you'll find in this booklet:

1. Types of Electric Heating Systems
2. What You Should Know about Insulation
3. How to Get the Most from Your Electric Heating System
4. How We Can Help

We think, once you know the facts, you'll understand why more and more people have decided on electric heating systems for their homes.

Ohio Edison

1. TYPES OF ELECTRIC HEATING SYSTEMS

Decide which is the right system for your house. Basically there are two types of electric heating systems. One type produces heat right in the area to be heated. This is called an individual room system. The other type, the central system, produces heat and distributes it from a central source. No matter which system you select, proper installation is very important for efficient and satisfactory operation.

INDIVIDUAL ROOM SYSTEMS

Electric Baseboard Baseboards are individual electric heating units that are installed against the wall, take very little space and blend with room decor. The concealed elements heat by natural upward movement of warm air. Most electric baseboard units are so trouble-free that they have a "life-of-the-structure" guarantee. Separate thermostats allow individual room temperature settings.

Electric Ceiling Cable The ceiling cable is concealed overhead in the ceiling. It heats by radiating warmth downward into a room. Ceiling radiant heat offers greater decorating freedom than any other individual room system and provides room-by-room temperature control. Preformed board sections and individual ceiling panels are also available.

Electric Wall Units Wall units are fan-driven units that heat through a resistance element protected by a grill. They are simple, quick and economical to install and offer versatility in location and size. Most often wall units are located in bathrooms, kitchens, workshops and hard-to-heat areas such as hallways and foyers.

CENTRAL SYSTEMS

Electric Heat Pump The heat pump is a dual-purpose home comfort system offering forced air heat and air conditioning from the same unit. The heat pump system is the most efficient electric heating system and uses about one-third less electricity than other electric heating systems. A heat pump system includes: 1) an outdoor compressor, 2) an indoor unit with supplemental heating similar to an electric furnace, and 3) a thermostat. The system can include humidification, dehumidification and electronic air cleaning for complete climate control.

Electric Furnace The electric furnace is a compact whole-house heating unit that can be installed in basements, attics, closets or utility rooms. Its electric fan circulates heat through ducts. The unit may be combined with air conditioning, humidification, dehumidification and electronic air cleaning units for complete climate control.

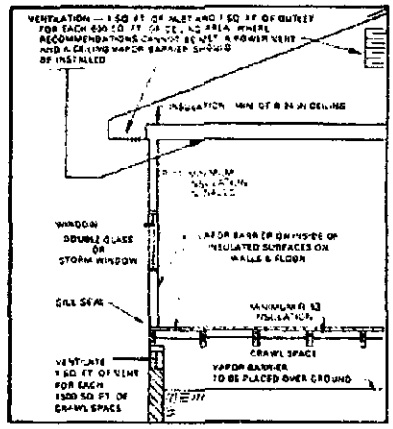
Hydronic Boiler In a hydronic or hot water system, liquid is warmed electrically in a central boiler, then circulated through pipes in baseboards throughout the house. The system offers small size and low maintenance. The boiler, about the size of a suitcase, can be mounted in a closet or on a basement wall. The baseboards are mounted against the walls in individual rooms for accurate control of temperatures.

2. WHAT YOU SHOULD KNOW ABOUT INSULATION

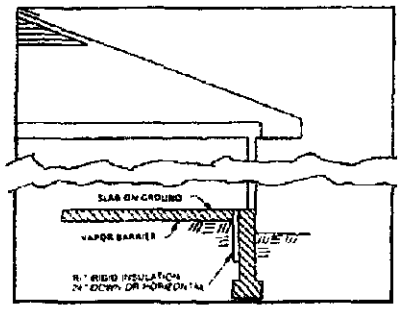
Insulate, Insulate, Insulate! It's almost impossible to over-insulate your home. Insulation is the single most important factor when you are considering electric heating. Inadequate insulation can waste heat and increase your heating costs. A home insulated to Ohio Edison minimum recommendations can reduce electric heating requirements by as much as 50 percent compared to inadequately insulated homes. These minimum recommendations are indicated by R values. "R" is the resistance to heat flow. Put simply, R-Value of insulation controls the amount of heat flow from a warm area to cold outside air.

Minimum Recommendations The following are Ohio Edison minimum insulation recommendations for electric heating. Keep in mind that these are only minimums. **Increased values should be used where practical.**

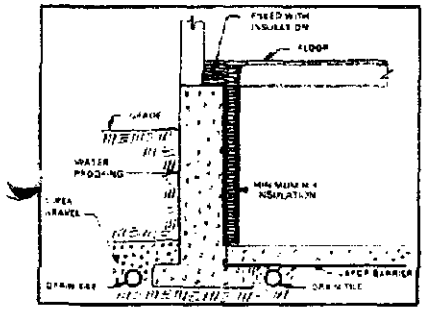
Ceilings	R-24
Walls	R-11
Floors over unheated areas	R-13
Basement walls (below grade)	R-4



INSULATION OF A HOME WITH CRAWL SPACE



INSULATION OF A HOME WITH SLAB-ON-GRADE CONSTRUCTION



INSTALLATION OF BASEMENT INSULATION

Types of Insulation The two types of commonly used insulation are batt and blown. Either type can be installed during the construction of a home and blown is usually used in converting older homes. It is important to remember when cellulose fiber and fiberglass blowing wool are used that they must be installed to the proper thickness in inches and **density** per square foot to obtain the recommended R-value.

Insulating Windows and Doors Windows and doors can be areas of high heat loss. When building a new home, choose a design with fewer or smaller windows. Reduction of glass area is one way to cut heat loss. Weatherstripping, caulking and stuffing insulation around door and window cracks reduces heat loss and prevents cold outside air from entering. Double glazing or storm windows are very important. A double-glazed window can reduce heat loss by as much as 43 percent over a single-pane window. Triple glazing can provide an additional 27 percent reduction.

VENTILATION

One thing all homes have in common is the need for adequate ventilation of attic and crawl space areas. Ventilation provides air circulation to remove moisture in winter and reduce temperatures in attics during hot-weather months. Humidity contributing to moisture build-up in attics and crawl spaces can lead to many problems and damage if not properly ventilated. Static ventilation, using ridge/soffit or roof/gable vents, allows attics to "breathe" through the normal flow of air. Proper ventilation requires one square foot of inlet and one square foot of outlet for each 600 square feet of ceiling area. Where recommendations cannot be met, a power vent and ceiling vapor barrier should be installed. Power

ventilation, coupling electric fans and soffit inlets, controls moisture by forced air. There are many types and styles of ventilating systems available which can provide the proper air flow and blend with the decor of your home. Remember that recommended insulation and adequate ventilation must be included in your plans for an electrically-heated home.

3. HOW TO GET THE MOST FROM YOUR ELECTRIC HEATING SYSTEM

Stay comfortable and save. For every 1° above normal that you keep your home, add approximately 3% to your monthly heating bill. Three degrees: nearly 10%. Once you've decided where you want the thermostat set so that your home will be comfortable, but no warmer than necessary, don't constantly change the setting. Changing temperature settings with your thermostat could cost extra dollars, and do a poor job of keeping your home comfortable; however, reducing temperature settings for an extended time can save energy and money.

Turning down the thermostat at night may not be best for you. Thousands of satisfied electric heating customers have learned that maintaining a constant, comfortable temperature at night doesn't cost them any more money. Heating systems differ from home to home, so someone else's opinion about nighttime settings may not be right for you. We want to help you get the most from your electric heating system.

Varying Room Temperatures Electric baseboard and ceiling cable systems allow individual room temperature control. This means that work areas such as kitchens, workshops, study areas and playrooms can be kept at lower temperatures than bathrooms or nurseries. You may wish to keep the bedroom temperature lower than other rooms. If the temperature difference is considerable, the door may be closed to prevent drafts. If you sleep with the window open, close the bedroom door, and turn the bedroom thermostat off.

Fireplace Dampers Keep fireplace dampers closed when not in use. Open dampers, when you're not using the fireplace, are great heat robbers. A chimney with a good draft can draw off as much as 25 percent of the heated air in your house **each hour** the fireplace damper is left open.

Furnace Filters At least once each month, check the filters in the furnace. If they're dirty, the heating system has to work

harder to provide the heat you need. Clean filters can save you unnecessary maintenance and service calls and keep the air in your home cleaner.

Unused Areas Don't waste money heating space you're not using. Close doors to attics, basements, garages and other unheated parts of your house.

Attic Insulation Make sure attic insulation has not shifted or become dislodged. Double-check the insulation at least once a year to ensure adequate protection.

Heating Ducts If heating ducts or pipes run through unheated spaces, make sure they are well-insulated against heat loss. Also be sure heating outlets and return air ducts are not obstructed by furniture, drapes or other objects.

Blinds and Drapes On sunny days, open blinds and drapes and let the sun help heat your home. When the sun isn't shining, keep window coverings closed to help insulate against cold outside air. With *electric baseboard units*, the following suggestions should be followed when installing drapes:

Recommended: The bottom of the drape should be a minimum of six inches above the top of the heater.

Alternate: Hang draperies a minimum of one inch from the ceiling and the bottom a minimum of one inch from the finished floor covering. A minimum of one inch clearance must be maintained between the heater and the portion of the fold in the drape that's nearest to the heater.

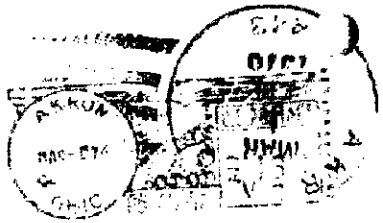
4. HOW WE CAN HELP

Computer Estimate You can find out how much it will cost you to operate a modern electric heating system in your home, free. All we need to know are your home's vital statistics: total floor area, construction specifications, and window and door areas. The computer will analyze these facts, then provide an accurate heating cost estimate. For your free estimate call Ohio Edison and ask for an electric heating specialist.

Booklets/Brochures We offer a number of publications designed to answer the questions of customers interested in heating their homes with electricity. Two of the most helpful are, "*How To Insulate Your Home For Electric Heat*" and "The Electric Decision Maker." They're free. Just stop at any Ohio Edison office, or drop us a card.

We want you to count on us for help with any questions about electric heating. For more details or additional information, just call. Or contact an electric heating dealer or contractor.

Ohio Edison Company
47 N. Main Street
Akron, Ohio 44308



Mike Payne
3598 Palmerston
Shaker Hts Ohio
44122

YOU AND YOUR ELECTRIC SERVICE

Ohio Edison

Dear Customer:

At Ohio Edison, we want to provide you with reliable electric service at the lowest possible price. We realize that inflation and the energy crisis are teaming up to raise the price of nearly everything you and we have to buy. You're paying more for electric service and we're paying more for fuel, labor, materials and equipment.

The people in our company are concerned about the effects of inflation on our customers and on their ability to pay monthly household expenses, which includes the electric bill. We also understand that from time to time you may have questions concerning your electric bill, such as how it is calculated and the bill-paying alternatives available to you. For this reason, we want you to know more about Ohio Edison, its policies, programs and the customer services available.

Whether you are an established customer or new to the area we serve, we welcome the opportunity to provide you with your electricity needs in the most efficient manner possible.

Ohio Edison

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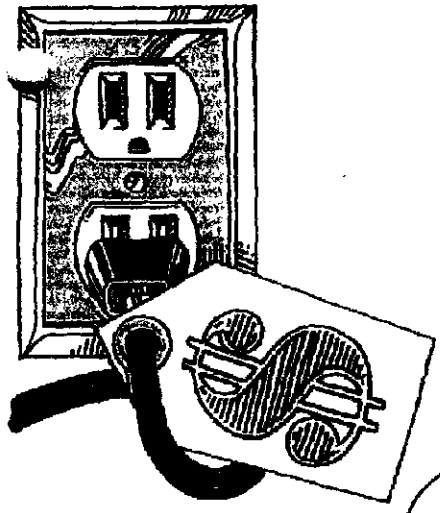


PUTTING A PRICE TAG ON ELECTRICITY

Ohio Edison is one of eight investor-owned electric companies in Ohio which are required by law to maintain service and anticipate demand for electricity in the respective areas they serve. All electric rates are regulated by either The Public Utilities Commission of Ohio, or the Federal Energy Regulatory Commission (formerly the Federal Power Commission) in the case of wholesale rates to municipal electric systems. Through public hearings, rates are established for all utility company customers. Within a given community, the established rate applies to all customers using the same type of service regardless of where they live within that community.

When The Public Utilities Commission of Ohio approves a rate change for residential customers, Ohio Edison prepares a new residential rate schedule which is approved by the Commission and all affected customers are mailed a notice summarizing the nature and the change in their electric rates.

In regulating these rates, both commissions allow the utilities to cover their costs and allow for a fair return on their investment. Most electric companies, including Ohio Edison, establish rates on a "cost to serve" basis. Thus the traditional rate structure differs among three major customer classes: industrial, commercial and residential.

Large industrial and commercial customers are charged what appears to be a lower rate because the cost of supplying and distributing electricity to a single large factory or shopping mall is far less than the cost of supplying the same amount of electricity to thousands of individual homes.

There are three basic costs involved in determining electric rates:

1) The **demand or capacity cost** is the total you get by adding up the costs of power plants, transmission lines, distribution lines, substations, meters and other tangibles, and the labor costs of people required to operate the generating plants.
2) The **energy cost** involves the actual generation of electricity, such as the cost of fuel and equipment maintenance. These costs vary with the amount of electricity a customer uses.
3) The **customer cost** includes meter reading, billing and customer services.

KWH ≈ 5¢

Currently, the average price for a kilowatt-hour (KWH) of electricity is about 5¢ for residential customers. Your individual cost may differ somewhat due to changes in the monthly fuel adjustment charge, the amount of electricity you use each month and the rate schedule for your area. The rate schedule for your area is available on request at your nearest Ohio Edison office. To compute your own cost per KWH, simply divide the net amount of your bill by the number of kilowatt-hours used.

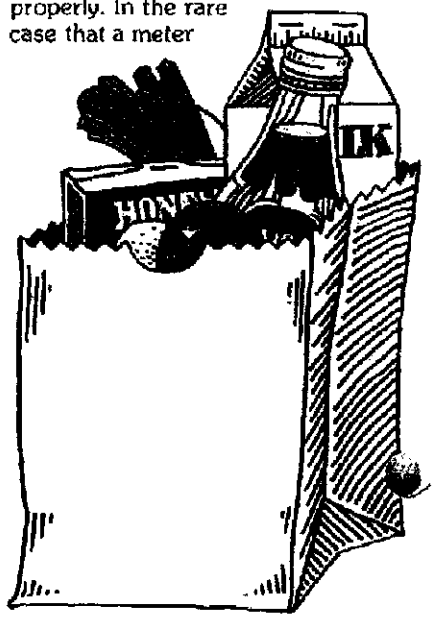
For more information on electric rates, call us and ask for our consumer booklet titled "Plain Talk About Rates."

MEASURING ELECTRICITY... THE INVISIBLE SERVANT

Electricity is different from most things you buy. You flip a switch and the lights come on, or the range heats up, the mixer mixes, or your home is warmed or cooled. Then sometime during the month you get a bill. But unlike buying a pound of beef or a dozen eggs, you really didn't see how much you used—electricity is an invisible servant.

So how is it measured? By the kilowatt-hour, or abbreviated, KWH. A kilowatt simply means 1,000 watts. Ten 100-watt light bulbs burning for one hour will consume one kilowatt-hour of electricity.

The number of kilowatt-hours you use during the period for which you are being billed is registered on an electric meter normally located on the outside of your home. All new meters are checked at Ohio Edison's meter department before they're installed to insure that they accurately record how much electricity is being used. On a random basis, these electric meters are periodically checked after installation to make sure they are still operating properly. In the rare case that a meter



is found to be inaccurate, it's almost always because the meter has slowed down—not speeded up!

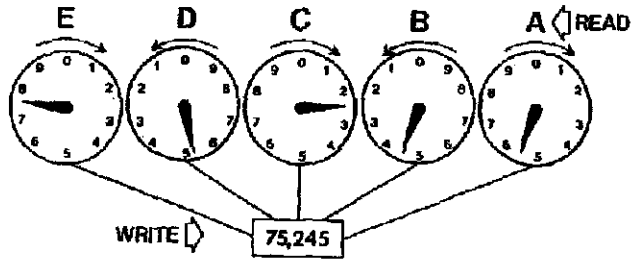
Once a meter is read by an Edison meter reader, it is not set back to zero. The previous meter reading is subtracted from the new meter reading to determine the kilowatt-hours you've used since the last reading. You are *billed only for the electricity* used between meter readings.

YOUR ELECTRIC METER... HOW IT WORKS

Your electric meter may look complicated—but it's not! If you would like to read your own meter to determine your daily, weekly or monthly use, or to check an electric bill for accuracy, you should read your electric meter as follows:

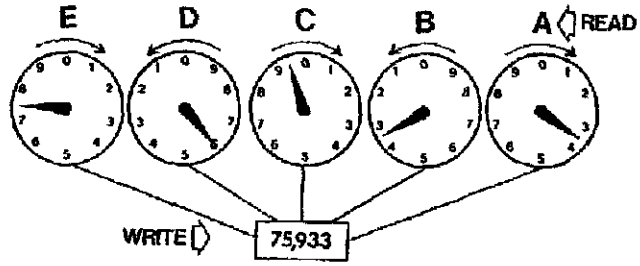
Stand directly in front of your electric meter, with the meter at eye level. You will notice that on the face of the meter there are either four or five round dials which measure your electric use (except for a load meter, which could have up to eight dials as explained later). Each dial has ten numbers and a pointer like the hand on a clock. The pointers advance only when electricity is being used in your home. These dials measure the number of kilowatt-hours you use in 1's, 10's, 100's, 1,000's and 10,000's.

To determine your correct meter reading, read the dials in order, starting from the right and moving to the left. Read each dial, and write down the number from right to left. In most cases, the dial pointer will be between two numbers on the dial. The correct number is the lower of the two numbers. A typical reading is shown below:



When a dial hand appears exactly on a number, as dial (D) in the next illustration, look at dial (C) on the right. If the hand on dial (C) has not passed zero, the number 6 has not actually been reached on dial (D) and the reading on that dial is the next lower number—5. The reading on dial (C) is 9.

To figure the number of kilowatt-hours used during the current month, subtract last month's meter reading, which appeared on your previous bill, from the present reading. This will give you your kilowatt-hour use for the period.



So, if your reading last month was 75,245, and this month it was 75,933, the kilowatt-hour use is the difference between the two numbers, or 688 kilowatt-hours.

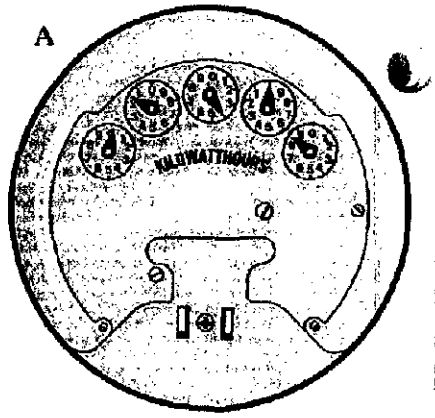
WHAT'S A LOAD METER?

If you use more than 500 kilowatt-hours of electricity each month, you probably have a combination meter which measures the total kilowatt-hours of electricity you use each month and the rate of use (electric load) for those kilowatt-hours. An electric load in kilowatts (KW) is the amount of electricity that flows into your home at any one time. The load meter measures the highest average amount of electricity flowing into your home during any 30-minute period since your meter was last reset by an Edison meter reader.

Ohio Edison's residential electric rates are designed so that a load meter can never cause you to pay more for electricity than you would pay if you had a regular meter. The load meter differs from a regular meter in that it offers you an opportunity to reduce your monthly electric bill below the normal amount if you lower your electric load or peak flow of electricity. For example, you can reduce your electric load by using your major electric appliances one at a time rather than simultaneously. By doing so, a portion of your electric bill may be calculated under the money-saving **Load Management** section of your rate schedule. For more information on **Load Management,** see page 7 .

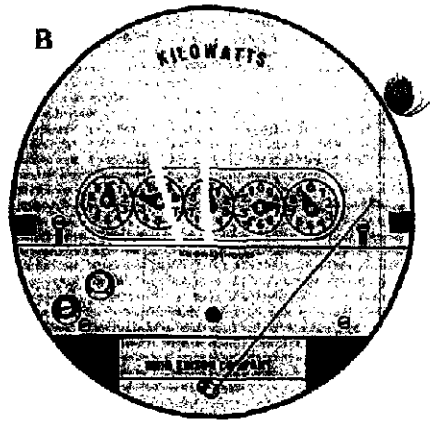
Since the mid-1950's, Ohio Edison has installed load metering equipment in more than 68 percent of the homes in its service territory. Besides the traditional four or five round dials in the center of the meter face which measure the number of kilowatt-hours used, combination meters (normally called load meters) will have either one or two needles that move along a calibrated scale marked "KW" (Figures A & B), or there will be a series of three dials (Figure C).

A



Load meter (A) has a black needle which moves along a calibrated scale labeled KW (kilowatts) on the outer rim of the meter face. This needle registers the highest average amount of electricity (load) that flows into a home during a 30-minute period since the last visit by one of our meter readers. The load reading in this example is 6 KW (kilowatts).

B



Load meter (B) measures the highest average 30-minute load and also registers the current amount of electricity flowing into the home. The scale on the meter face is calibrated in kilowatts to measure the two electric loads.

The blunt needle with a red tip (1) measures the electric load presently being used and the black needle measures the highest average 30-minute electric load registered since the meter was last reset. In this example, the present load (1) is 5.5 KW (kilowatts) and the maximum 30-minute load (2) is 10.5 KW (kilowatts). When the meter reader visits the home each month, the black needle is reset to the red-tipped needle, which is measuring the electric load at the time of the reading.

C

Load meter (C) has three round dials located near the bottom portion of the meter face which register the highest average 30-minute load since the meter was reset. These three dials are read right to left as is the case when reading the kilowatt-hour use dials. The black line between the first two dials on the right indicates the decimal point. The load reading in this example is 7.6 KW (kilowatts).

THE UPS AND DOWNS OF YOUR ELECTRIC BILL

Monthly electric bills vary from family to family and season to season; no two electric bills are alike. In the winter, furnaces are operating for longer periods of time and using more electricity and natural gas to keep your home comfortable. As weather conditions worsen, entertainment moves indoors and appliances, lights, TV sets, radios and stereos are used more often.

In the summer, fans and air conditioners help keep your home cool during the hot and humid days. The family spends more time outdoors and more hot water may be needed for baths, showers and laundry.

As your family grows in size, you may use more electricity for cooking, laundry, lighting and refrigeration. And, as your standard of living improves, so may your consumption of electricity. New electric appliances such as a frost-free refrigerator, dishwasher or color television will increase your monthly electric bill.

Electric bills vary between families too. Although you and your neighbor may have similar homes and the same size family, your electric bill can still vary. Family habits are not the same—the hours kept, the meals prepared or eaten out, time spent watching television or listening to the radio or stereo, the number of times you do laundry and the amount of time you're home each day. Every family has its own routine, and their electric bills will vary accordingly.

WISE USE MAKES CENTS

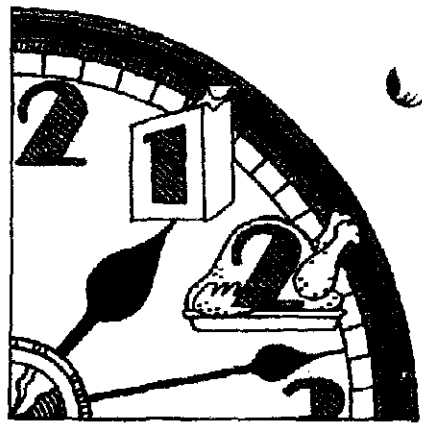
The selection, use and care of your electric appliances are important ways you can get the most from your electric service. Following the instructions provided by the manufacturer and establishing periodic maintenance checks of your own will prolong the life of appliances and maintain their efficiency—all of which will mean savings for you.

For example, removing lint from the trap in your dryer, cleaning the condenser fins on your refrigerator and regularly draining a gallon of water from your water heater are measures that may add years of service to these appliances and save electricity.

For more ways to use your electric appliances efficiently, call or write us and ask for our booklet "The Electric Decision Maker."

LOAD MANAGEMENT... ANOTHER WAY TO SAVE MONEY

In January 1976 Ohio Edison initiated a new approach in rate design called **Load Management**. Traditionally, when we think of reducing our electric bills, we try to think of ways to reduce the amount of electricity we use. But



load management is another way for many Ohio Edison customers to lower their bills and help hold the line on the future cost of electricity for everyone.

Basically, **load management** means spreading out the use of electricity as evenly as possible. An electric LOAD is measured in kilowatts (KW), and is the amount of electricity that flows into your home at any time. If you spread out that flow of electricity as evenly as possible, Ohio Edison can make more efficient use of its equipment and reduce the need for new power plants. This will also help us hold down the cost of your electric service.

By scheduling the use of some major electric appliances in your home rather than using them at the same time, you can balance the flow of electricity (load) into your home. Appliances, such as heating equipment and refrigerators, are designed to operate automatically. But you can operate major appliances such as your clothes dryer, electric water heater, dishwasher and range at separate times, and thus lower the electric load and lower your monthly bill.

It is easy to tell if you're benefiting through **load management**. Multiply

the figure shown on your bill under BILLING LOAD IN KW by 125. Suppose the figure under BILLING LOAD IN KW was 7. Multiply 7 x 125. That's 875. All kilowatt-hours (KWH) you use over 875 will be billed at the lower **load management** price.

The program is primarily directed to those customers who can significantly influence the amount of electricity Ohio Edison must produce. Any residential customer who uses 500 KWH or more of electricity per month for three consecutive months qualifies for a load meter. When you use more than 625 KWH monthly, benefits from the load management program become possible. **It is impossible for a load meter to cause any customer to pay more for electricity than he would pay with a regular meter.**

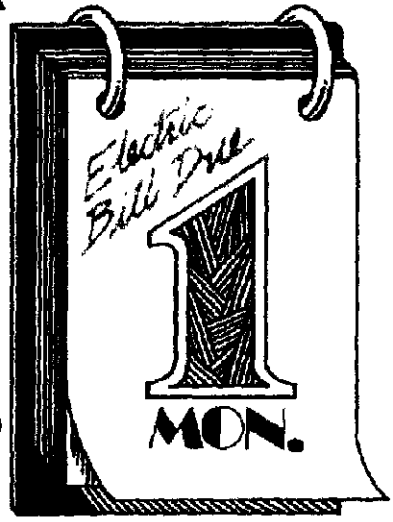
AN AUTOMATIC LOAD CONTROL REGULATOR CAN ALSO HELP

Although the automatic load control regulator has been used in commercial and industrial operations for some time, its use in homes is relatively new. Normally, the automatic load control regulator is installed in a home that has an electric water heater and dryer. In operation, the load regulator shuts off a selected appliance when another appliance such as an electric dryer is in operation. In doing so, the electric load into the home is kept at a lower level and the customer can achieve greater benefit from Edison's **load management rate schedule.** Tests conducted by Ohio Edison have shown a customer can reduce his electric load by between one and three kilowatts when a load regulator is installed. If you are interested in learning more about the automatic load control regulator, just give us a call and we'll be happy to answer any questions you may have.

PREPARING YOUR ELECTRIC BILL

Ohio Edison sends out residential electric bills monthly. The period for which you are being billed varies depending on the day when our meter readers are in your area. Electric bills are mailed on the fourth working day following the scheduled meter reading date.

Residential customers have 15 days to pay the "total net amount" of the bill. After 15 days from the mailing date, the "total gross amount" is due. When the final date for "net payment" falls on a Saturday, Sunday or holiday or any other day that Ohio Edison offices are not open for business, the final date for payment of the "total net amount" is automatically extended to the following working day.



ELECTRIC HEATING

QUESTIONS & ANSWERS

QUESTIONS ANSWERS

QUESTIONS ANSWERS

QUESTIONS ANSWERS

QUESTIONS ANSWERS

ELECTRIC HEATING

Electric heating in residential dwelling units is gaining in popularity throughout Ohio and the nation. Today, more than 146,000 Ohio families heat their residences electrically. And the number increases by about 2,400 every month.

Many forward-looking Ohioans are now considering electric heating systems in their plans for building new homes or modernizing their present ones. If you are among those considering the advantages of electric heating, we hope the following questions and answers will be helpful. If any of your questions remain unanswered after reviewing this material, a space is provided at the back of this booklet for you to jot down your thoughts or questions. Then call the investor-owned electric company serving your area. Ask for a Residential Electric Heating Specialist, who will be happy to discuss your questions with you and provide you with any additional information you need. But first, just browse through the following pages and consider the possibilities for modern, automatically-controlled year-round comfort conditioning in your home . . .

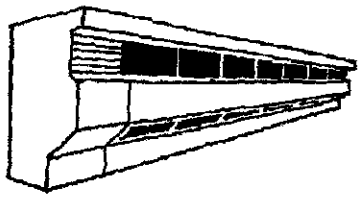
Q **I'm building a new home. How much will it cost me to install electric heating?**

A Usually you'll find the initial purchase and installation costs of electric systems to be competitive with other types of systems. But these costs will depend on the type of system you select. You have a selection of six basic systems to choose from so an accurate estimate of the installation cost cannot be made by a contractor until you make several decisions.

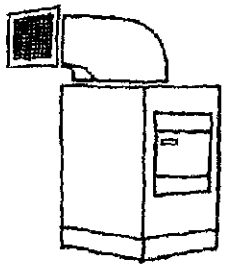
Q **What are my six choices?**

A *Here's a brief description of each:*

RESISTANCE BASEBOARD HEATER — provides individual room temperature control. Installation is easy and economical, and it's easy to add to the system later if you add rooms to your home.

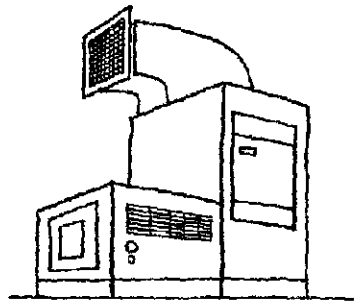


ELECTRIC FURNACE — a ducted system using forced air to circulate the heat. Ideal for adding humidity control and electronic air filtration equipment, and you can provide for completely automatic summer and winter comfort conditioning.



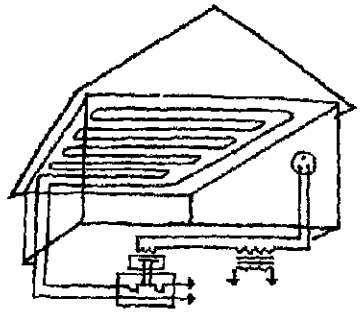
HYDRONIC SYSTEM — utilizes water as the heat transfer medium. A circulating pump activated by a low voltage thermostat controls the flow of water from the boiler to room baseboard heating units. Several heat zones can be built into the system depending upon the degree of control desired.

ELECTRIC HEAT PUMP — has all the advantages of the electric furnace plus built-in, year-round automatic temperature control. Among electric heating systems the heat pump is slightly higher in initial cost; however it generally costs 20% to 25% less to operate than other electric heating systems.



ELECTRIC WALL UNITS — these are concentrated heat sources characterized by high output-to-size ratios. They provide heat by radiation, natural convection or forced air. Excellent for general room heating or for smaller areas such as entryways, bathrooms or kitchens.

RADIANT CEILING CABLE — clean, comfortable heat is radiated from hidden cables in your ceilings; operation is completely draft-free and silent; and you also benefit from the advantages of individual room temperature control and the economy of low installation costs.

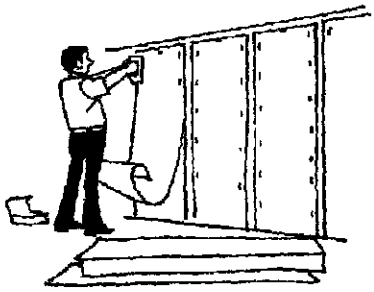


Q What about operating costs? I've heard they're high.

A Operating costs really aren't "high". Remember you're installing a top quality heating system, one that will serve you well year-round. Most Ohio electric utilities offer an equal monthly payment program for electric heating customers. But the real secret to realizing lower operating costs is in using proper insulation and storm doors, storm windows, or double glazed windows.

Q Is insulation really that important?

A Yes. Very important . . . it helps utilize electric energy wisely and efficiently. The modest additional cost for proper insulation can be recovered in savings in your electric energy costs.



Q What about the power supply? If I install electric heating and you can't supply the electricity, I'll be in trouble.

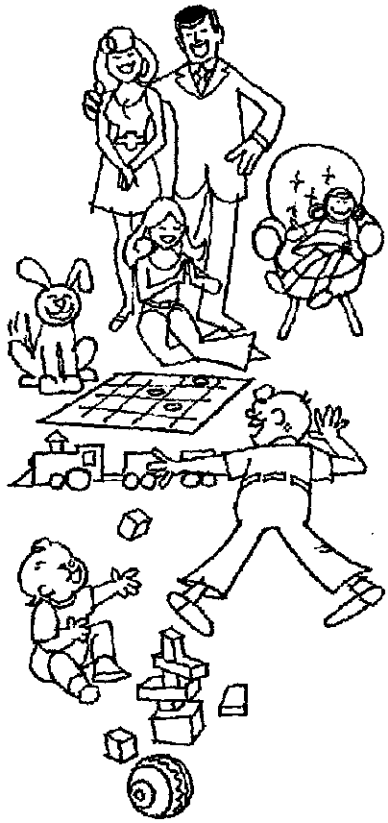
A We foresee no electricity shortages in Ohio in areas served by investor-owned electric utilities unless some unforeseen events occur to prevent them from building generating plants to meet future electricity demands.

Q I've heard that I may have cold floors with electric heat. Is that true?

A Certainly not. With the proper selection of equipment and insulation your floors will be warm — even concrete slab floors.

Q What makes electric heat so clean?

A It has often been said that "electric heat is as clean as a light bulb" . . . and for good reason! Resistance heating equipment is energized by electricity — just like the filament in a light bulb. From the heating element, radiation, conduction and convection, together with forced air or hot water distribute the heat throughout your home.



Q **I have an older home. Can I change my heating system to electric?**

A Yes, indeed. Many older homes are being satisfactorily converted to electric heating. The key factor is making sure that your home can be properly insulated. Most homes can be. And, of course, that includes storm doors, storm windows, or double glazed windows.

Q **How is insulation added to homes after they are already built?**

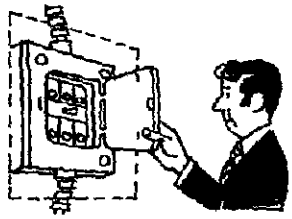
A Insulating batts can be installed in the attic, or insulation can either be blown or poured in place over the existing insulation. Insulation can be blown into the exterior walls through holes which are drilled and then filled. In most cases, insulation can be applied with relative ease — even in very old homes. Ask your heating or insulation contractor for a free estimate.

Q **If I convert my home to electric heat, can I keep any of my present heating system to save on installation costs?**

A It depends largely on the age and condition of your present heating distribution system and the type of electric system you wish to use. Your best bet is to check with your electric heating contractor. After checking your present equipment, he can advise you on this matter.

Q **Would I have to rewire my home?**

A Not necessarily. However, as with adding other electric appliances, conversion to an electric heating system may require a larger electric service entrance and possibly, additional circuits may have to be added. Your contractor can advise you of your requirements.



Q **How long does it take to convert to electric heat?**

A In most cases, the entire job takes only a few days — but it really depends on many circumstances particular to your own project. You can obtain the best answer by checking with your local contractor after he has had a chance to thoroughly inspect your home.

Q **Will my home be habitable during the conversion?**

A In most cases, there would be some inconvenience, but you normally can remain in your home.

Q **If I should really become interested in building a new home or modernizing my present home with electric heating, where can I get more information?**

A Call your investor-owned electric power company — the one serving your home, and ask for the Residential Heating Specialist who will be able to provide you with the information you need to make an informed decision regarding electric heating without charge or obligation.

Your investment in an electric comfort conditioning system will provide many years of comfort, convenience and pleasure for you and your family.

NOTES

You'll Benefit These Eight Ways When You Buy or Build a Total-Electric Home with Flameless Electric Heating:

CLEAN

[illegible] are easier because electric heating [illegible] itself. And flameless electric [illegible] air cleaner outside your home too.

COMFORTABLE

[illegible] maintains desired temperatures throughout [illegible] home. And the added insulation you have [illegible] heated home helps seal out outside [illegible]

RELIABLE

[illegible] electric heating systems are truly quality built [illegible] years of care-free comfort and enjoyment. [illegible] guarantee their electric heat [illegible] for the life of the home.

FLEXIBLE

Compact electric heating units fit nearly anywhere and [illegible] offering you considerably more living space [illegible] buying dollar. Great for add-on rooms, too.

CONVENIENT BUDGET BILLING

[illegible] advantage of a convenient budget payment [illegible] even out your monthly electric bills, when [illegible] electrically heated home.

VARIETY OF SYSTEMS TO CHOOSE FROM

Select the one best for you and your home. Among the most popular are:

Baseboard — Individual thermostats in each room assure you complete comfort control for every family activity.

Heat Pump — Automatically warms in winter, cools in summer providing house-wide climate control throughout the entire year.

Electric Furnace — A ducted heating system with a furnace so compact you can install it in a closet, or almost anywhere because there's no chimney or venting required. Also gives you the flexibility for providing total comfort conditioning throughout all seasons.

PROFESSIONAL HELP IN CHOOSING

You can always call an Illuminating Company residential heating specialist for help in selecting the system best for you. He can give you reliable estimates on your electric heating needs and total utility costs.

PROVEN OVER FIVE MILLION TIMES

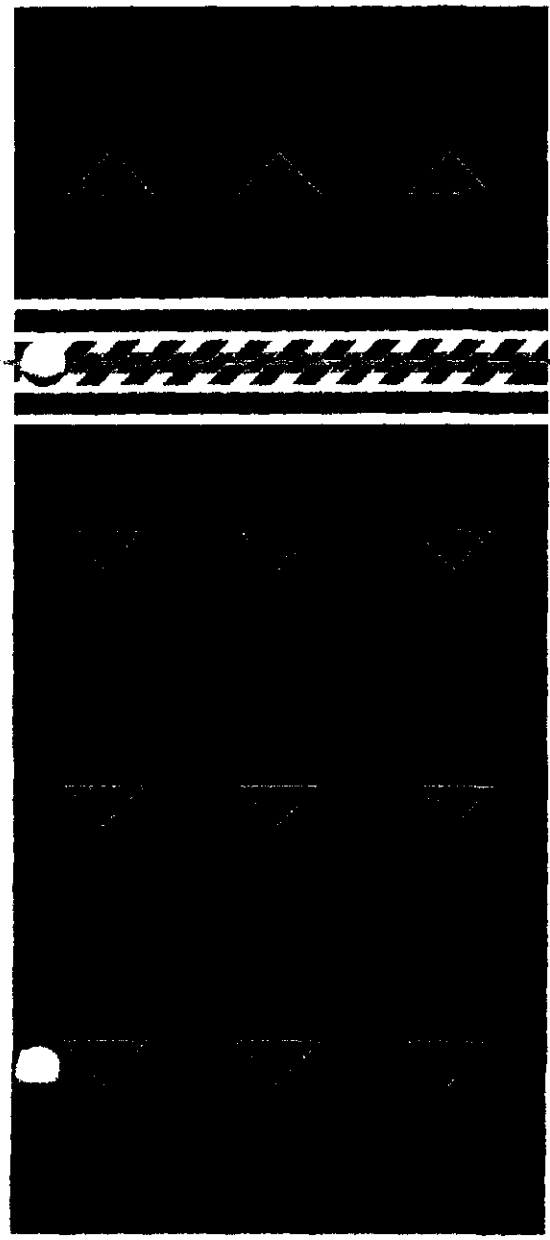
Today more than five million American homes are heated electrically. Ohio alone has more than 100,000 and Ohio's total increases by about 1,400 every month.

The ILLUMINATING Company

An Investor-owned Company Serving The Best Location in the Nation

The Load Management Option

It's your choice— You're in control



At The Illuminating Company in addition to providing you with the electrical energy you need, we continuously strive to bring you the information you need to use it efficiently. This booklet describes an opportunity for you to save money by controlling the way you use electricity. Our new Load Management Option is now available to those customers who qualify and this pamphlet explains how you could benefit. Please read it carefully.

A. Load management is scheduling or controlling the use of major electrical appliances so that those appliances which need not be, are not used at the same time. This can be accomplished manually or with automatic, electronic devices. By controlling or managing your electric load you may be able to lower your cost per kWh. (A kWh is 1,000 watts or 1 kW of electricity used for 1 hour.) Specifically, savings are possible by controlling the electric appliances that you use at any given time and by leveling out your electric consumption throughout the month. By shifting tasks that use large amounts of electricity to off-peak hours, or by scheduling activities so that major tasks are not done simultaneously, savings should result. Whatever you decide...the choice is yours.

A. An electric load is the amount of electricity which each appliance uses and its total is what flows into your home at any given time. Electric load is measured in kilowatts (kW) or 1,000 watts.

For example, if your automatic clothes washer with 500 watts (.5 kW), electric dryer with 5,000 watts (5.0 kW) and an electric range element with 2,500 watts (2.5 kW) were all operating at the same time, for a sustained period, the total electric load would be 8,000 watts (8.0 kW).

Q. *Why is The Illuminating Company offering a Load Management Option?*

A. Unlike many things you can think of, electricity cannot be stored. The Illuminating Company must have adequate generating capacity to meet the maximum load (demand) of our customers—we have to be able to provide electricity to all our customers, throughout our system, regardless of how much is required or when it is needed. However, the demand for electricity is not always constant. Whenever our "system load" is less than our on-line system generating capacity, equipment is underloaded.

One of our ongoing objectives is to operate our system and all of our equipment as efficiently as possible. More efficient operation of our existing generating system means being able to supply more electricity without having to add unnecessary new generating capacity. Achieving improved operating efficiencies enables us to keep the price of electricity as low as possible.

The Load Management Option provides an opportunity for you to receive a savings by controlling electric load and contributing to more efficient use of our generating plants and equipment. Rather than using a large quantity of electricity over a short time, you can use the same amount but spread it out over a longer period of time. This reduces our demand peaks and allows us to make more efficient use of our generating equipment. We pass the savings on to you.

Q. *How does the Optional Load Management Rate work?*

A. The Illuminating Company has instituted an Optional Load Management Rate which is now offered as part of its General Residential Schedule. If you qualify, following an initial 125 hours' use of billing load per month, all kilowatthours will be billed at 1.4¢ per kWh plus the appropriate electric fuel adjustment factor. An example is as follows:

TOTAL MONTH CONSUMPTION = 1,200 kWh

I. General Residential Schedule with no discounts and no Load Management option:

Bill calculation: 1,200 kWh

	Summer	Winter
First 500 kWh x 8.74¢/7.14¢	$ 43.70	$35.70
Next 500 kWh x 8.221¢/6.591¢	41.11	32.96
Next 200 kWh x 8.221¢/3.341¢	16.44	6.68
Fuel, 1,200 kWh x 1.79605¢	21.55	21.55
Total monthly bill	$122.80	$96.89
Average monthly bill	$105.53	

II. General Residential Schedule assuming electric water heater and no Load Management option:

Bill calculation for 1,200 kWh.

	Summer	Winter
First 500 kWh x 8.74¢/7.14¢	$ 43.70	$35.70
Next 500 kWh x 8.221¢/6.591¢	41.11	32.96
Next 200 kWh x 8.221¢/3.341¢	16.44	6.68
Less Water Heating Discount:		
300-600 kWh x 1.70¢/1.75¢	-5.10	-5.25
600-1,200 kWh x 1.0¢/1.0¢	-6.00	6.00
Fuel, 1,200 kWh x 1.79605¢	21.55	21.55
Total monthly bill	$111.70	$85.64
Average monthly bill	$94.33	

III. General Residential Schedule assuming electric water heater with the Load Management option:

Bill calculation for 1,200 kWh; 8 kWd load (estimated load for a typical home with electric water heating)

	Summer	Winter
First 500 kWh x 8.74¢/7.14¢	$ 43.70	$35.70
Next 500 kWh x 8.221¢/6.591¢	41.11	32.96
Less Water Heating Discount:		
300-600 kWh x 1.70¢/1.75¢	-5.10	-5.25
600-1,000 kWh x 1.0¢/1.0¢	-4.00	-4.00
Next 200 kWh x 1.4¢/1.4¢	2.80	2.80
Fuel, 1,200 kWh x 1.79605¢	21.55	21.55
Meter charge	2.65	2.65
Total monthly bill	$102.71	$86.41
Average monthly bill	$91.84	

Load Management (L.M.) Rate savings:

L.M. vs. I = $13.69
L.M. vs. II = 2.49

IV. Same as #III, except kWd load reduced 20% to 6.4 kWd:

Bill calculation for 1,200 kWh; 6.4 kWd load

	Summer	Winter
First 500 kWh x 8.74¢/7.14¢	$43.70	$35.70
Next 300 kWh x 8.221¢/6.591¢	24.66	19.77
Less Water Heating Discount:		
300-600 kWh x 1.70¢/1.75¢	-5.10	-5.25
600-800 kWh x 1.0¢/1.0¢	-2.00	2.00
Next 400 kWh x 1.4¢/1.4¢	5.60	5.60
Fuel, 1,200 kWh x 1.79605¢	21.55	21.55
Meter charge	2.65	2.65
Total monthly bill	$91.06	$78.02
Average monthly bill	$82.37	

Load Management (L.M.) Rate savings (incl. 20% load reduction):

L.M. vs. I = $23.16
L.M. vs. II = 11.96
L.M. vs. III = 9.47

Typical Electrical Load of Major Home Appliances

The table below identifies a number of typical home appliances,and the electrical load for each is shown in kilowatts (kW).

Appliance	Load in kW
Electric Furnace, Resistance Heat	20.0
Electric Dryer	5.0
Electric Oven (Self-Cleaning)	4.8
Electric Water Heater	4.5
Central Air Conditioning and/or Heat Pump (Typical)	4.5
Electric Range (Large Surface Unit)	2.5

Q. How do I qualify for the Optional Load Management Rate?

A. Two important criteria are used to determine if a customer who qualifies may benefit from the Load Management Option. First, the minimum load for billing purposes will be 5 kW of billing load (demand) per month. Second, the customer must choose from one of two

types of load meters and pay a monthly meter charge. For a Time-of-Day load meter, the monthly charge is $9.00. For a Non-Time-of-Day load meter, the monthly charge is $2.65.

Upon receiving service under this optional rate, a customer shall be ineligible to receive service under any other schedule provision for a continuous 12-month period. After discontinuation of service under this optional rate, the customer shall be ineligible to receive service under this optional rate for a 12-month period from the time service was discontinued.

Q. *Which customers would benefit the most from the Optional Load Management Rate?*

A. Those customers who have existing electric appliance load of at least 5 kilowatts and have an average monthly kilowatthour usage of 700 kWh or greater can benefit. Generally, this optional rate would benefit those customers with electric water heating, electric dryers, electric space heating and/or electric air conditioning. These appliances are the larger electrical users and their operation can be deferred and/or controlled with minimal disruption to living patterns.

The Time-of-Day load meter option would benefit those who are the larger electric users but want more flexibility as to when these electric loads need be controlled, for example, only during the hours of 8:00 a.m. to 8:00 p.m. on weekdays. On the other hand, the non-Time-of-Day load meter option requires one to control appliance usage patterns over the entire monthly billing cycle in order to realize savings.

Q. *If I request a load meter, will my monthly electric bill increase?*

A. Only by the monthly charge for the special load meter. Billing for all kWh will be the same for the first 125 hours' use of billing demand. You cannot pay more for your electric energy than you are presently paying, except for the monthly meter charge of either $2.65 or $9.00, depending on the option you choose.

Although there is a charge for the load meter, potential savings in the Load Management Option can more than offset the cost of the meter. Of course, the choice is yours as to how much [illegible]

A. Yes. Both the space heating discount and the water heating discount remain in effect. The Load Management Option is merely an extension of these rates.

A. A number of electric appliances are controlled by an automatic thermostat, such as: electric dryers, water heaters, heating systems, air conditioners, humidifiers. These appliances can be cycled when other appliances are in operation, either manually or by using a load controller or interlock device. Customers with electric heat or with electric water heaters and electric dryers should consider installing automatic load control devices.

A. A load control device can be installed in your home which monitors and regulates power consumption—leveling out electrical load. The controller is normally mounted near your power supply breaker box. You regulate the controller from a set station normally located in the kitchen. Sensors monitor the home's electrical load (demand) level and turn off certain loads

during high demand periods -- restoring them at the end of that period — all on a pre-arranged, priority basis. What you need least is turned off first, and what you need most is turned off last, or not at all. All this is accomplished with little or no inconvenience to you. It's all done automatically and all controlled circuits are turned on again as the peak load falls below the preset point you have selected.

Q. *If I want to participate in the Load Management Option, how do I do it quickly?*

A. Just return the enclosed Load Management Option "Request for Start-Up" form with your signature. Your request will be processed and installation scheduled as meters become available. For additional information call the Residential Marketing Department at your nearest Illuminating Company office.

The Illuminating Company

The Energy Makers

How An Electric Load Meter Can Help Lower Your Electric Bill

Ohio Edison

Q. What is an electric load meter?

A. An electric load meter—in addition to measuring the number of kilowatt hours of electricity used—measures the highest average amount of electricity (electric load) that flows into the home during any 30-minute period since the electric meter was last read by a meter reader. Measured in kilowatts, the load meter registers the customer's "peak electric load." More than 450,000 of Ohio Edison's residential customers now have electric load meters.

Q. I have heard that a load meter will increase my monthly electric bill. Is that true?

A. Absolutely not! No residential customer having a load meter will pay more for electricity than a customer using the same amount of electricity measured with a regular electric meter.

Q. Is there any advantage to my having a load meter?

A. There definitely *could* be. The load meter is used to determine whether or not a customer qualifies for Ohio Edison's *load management* electric rates. The *load management* rate offers customers a money-saving incentive to reduce their peak demand for electricity.

This new approach in electric rates was developed in response to Federal Energy Administration and the PUCO encouragement to find ways to: (1) better utilize existing power plants and, (2) ease the peak demand for electricity which requires electric companies to build new power plants.

Q. Exactly what is load management?

A. As mentioned earlier, an *electric load* is the amount of electricity that flows into your home at any one time. *Management* of this load would mean scheduling the use of your major appliances, rather than using them at the same time. In doing so, you lower your electric load and, through the new load management rates, lower your electric bill.

Q. Does everyone qualify for load management rates?

A. No not everyone. Two criteria are used to determine if a customer qualifies for load management rates. First, the customer must have a load meter and use more than 625 kilowatt-hours of electricity each month. Second, the kilowatt-hours used exceed 125 times the month's "billing load in kW." This billing load represents the highest average amount of electricity that flows into the home during any 30-minute period since the load meter was read by an Edison meter reader. It is easy to tell if you are saving money through load management. Multiply the figure shown on your electric bill under Billing Load in kW by 125. Suppose the figure under Billing Load in kW is 7. Multiply 7 x 125. That represents 875 kilowatt-hours. All kilowatt-hours you use over 875 will be billed at the lower *load management* rate.

Q Can you give me some examples of how much money can be saved by taking advantage of the load management rate?

A The following chart illustrates the savings possible over a wide range of monthly kilowatt-hour consumptions at various electric loads.

MONTHLY CONSUMPTION IN KILOWATT-HOURS (kWH)

Billing Load in Kilowatts	500 kWH	625 kWH	750 kWH	1,000 kWH	1,500 kWH	2,000 kWH	2,500 kWH	3,000 kWH
	Before a Load Meter is Installed*							
None	$30.20	$35.56	$40.92	$51.24	$71.69	$92.12	$112.57	$133.01
	After a Load Meter is Installed** (Savings Possible)							
5.0	30.20	35.56	37.79	42.26	51.21	60.14	69.09	78.03
6.0	30.20	35.56	40.92	45.39	54.34	63.27	72.22	81.16
7.5	30.20	35.56	40.92	49.78	58.73	67.66	76.61	85.55
10.0	30.20	35.56	40.92	51.24	65.94	74.87	83.82	92.76
	(Bills are the Same)							
15.0	30.20	35.56	40.92	51.24	71.69	89.24	98.19	107.13
20.0	30.20	35.56	40.92	51.24	71.69	92.12	112.57	121.51
25.0	30.20	35.56	40.92	51.24	71.69	92.12	112.57	133.01
30.0	30.20	35.56	40.92	51.24	71.69	92.12	112.57	133.01

* These figures represent rates in Ohio Edison's Rate 16 Electric Rate Schedule (for unincorporated communities) for residential customers and include the average fuel adjustment charge for the period January-October, 1977.

** When a load meter is installed the bill for any kWH use is *never more* than if a load meter is not installed and *may be less*.

For example, when a load meter is not installed, the base bill for the use of 1,000 kWH per month is $51.24; whereas, if a load meter is installed, it may be as low as $42.26 (but never more than $51.24 base). This lower basis of billing is applicable *only when a load meter is installed.*

Q Aren't some appliances, such as heating equipment or refrigerators designed to operate automatically? If so, how can I avoid having a higher electric load?

A It is true that a number of appliances are controlled by an automatic thermostat: electric dryers, water heaters, heating systems, air conditioners, humidifiers, etc. However, selected appliances can be shut off when other appliances are in operation, either manually or through the use of an *automatic load control regulator.* Tests conducted by Ohio Edison indicate that a customer who has an electric water heater and dryer can reduce his electric load by between 1 and 3 kilowatts when a load regulator is installed. For more information on the load regulator, call your Ohio Edison residential services representative.

Q Do all Ohio Edison residential customers have a load meter?

A No, not everyone. To qualify for a load meter, a customer must use more than 500 kilowatt-hours of electricity for three consecutive months. Any customer who exceeds the 500 kilowatt-hour minimum may have their existing meter replaced with a load meter. A postage-paid notice, which shows the application of the lower load management rate, will automatically be mailed to those customers who qualify for a load meter. If the customer wants to take advantage of the load management rate, he simply signs the reply card and drops it in the mail. The company will then install a load meter at no additional cost.

Q. How can I determine whether or not I have a load meter?

A. There are two ways you can tell if you have a load meter. First, take a look at your electric bill and check the box marked, "billing load". If a figure appears in this box it means you have a load meter. Second, if your electric bill is not readily available, look at the face of your electric meter. Besides the traditional four or five dials located in the center of the meter face (these dials record the number of kilowatt-hours consumed each month), a load meter will also have either one or two needles which move along a calibrated scale marked kilowatts (Figures #1 and #2), or there will be a series of three additional dials as shown in Figure #3.

FIGURE #1

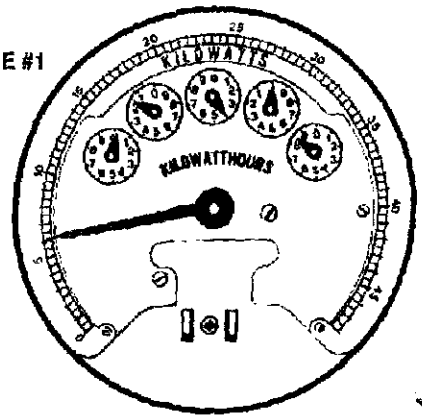
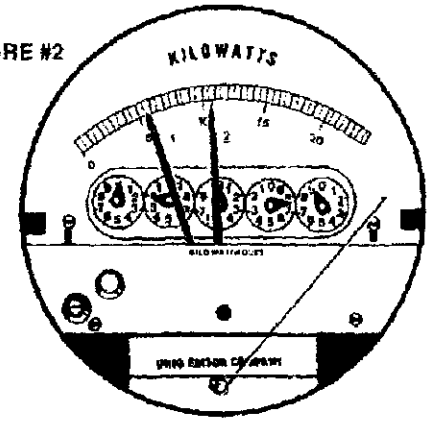


FIGURE #2

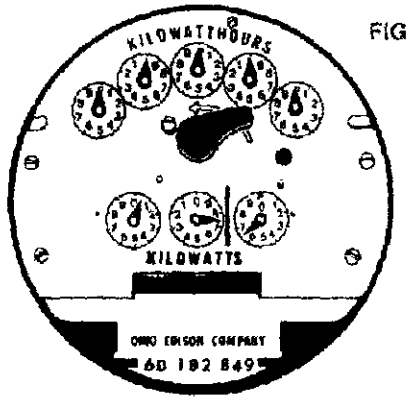


The load meter in Figure #1 has a black needle which moves along a calibrated scale labeled kilowatts on the outer rim of the meter face. Like all load meters, this needle registers the highest average amount of electricity (load) that flows into the home during any 30-minute period since the last visit by the meter reader. The load reading in this example is 6 kW.

The load meter in Figure #2 records two electric loads. The blunt needle with a red tip (1) measures the electric load presently being used, and the black needle (2) measures the highest average 30-minute electric load. In this example, the present load (1) is 5.5 kW and the average 30-minute load (2) is 10.5 kW. When the meter reader reads the meter, the black needle is reset to the red-tipped needle which is measuring the electric load at the time of the meter reading.

The load meter in Figure #3 differs from the other two load meters in that it records the load reading on a series of three dials located on the lower portion of the meter face. The black line between the first two dials on the right indicates the decimal point. The load reading in this example is 7.6 kW.

FIGURE #3



Electrical Terms

Kilowatt (kW)

A kilowatt equals 1,000 watts, a unit used to measure the electricity required to power electrical appliances. For example: Operating properly, the average electric toaster will require 1,100 watts.

Kilowatt-hour (kWH)

The standard unit of measurement used to determine the amount of electricity a customer uses. As an illustration: Ten 100-watt light bulbs burning for one hour will consume one kilowatt-hour of electricity.

Electric Load

An electric load, which is measured in kilowatts, is the amount of electricity that flows into a customer's home at any one time. To illustrate: If a customer's automatic washer with 500 watts (.5 kW), electric dryer with 5,000 watts (5.0 kW) and oven broiler with 3,600 watts (3.6 kW) were all on together at the same time, the electric load would be 9.1 kW.

Billing Load in kW

This term is used for billing purposes to determine whether or not a customer qualifies for load management rates, and represents the highest average amount of electricity that flows into the home during any 30-minute period since the customer's load meter was last read.

Ohio Edison

Take Charge Of Your Electricity Use And Save Money With The Load Management Option

The Illuminating Company

The Load Management Option Can Be Of Great Benefit To You.

Today, everyone is looking for ways to save energy and money. In this regard, The Illuminating Company has introduced an innovative concept which will help you do just that — save energy and money. It's called the Load Management Option.

At first, you may not be familiar with the meaning of those words in this context. But, let us explain them. Once you fully understand the concept, "Load Management Option", you'll find it to be of considerable importance to you.

First, The Word "LOAD."

In electric energy terms, load means the total flow of all electricity you use in your home at any given point in time. The rate at which electricity is coming into your home right now, is the load. The load varies from time to time.

Now, The Word "Management."

"Management" means taking charge of or controlling the flow of electricity into your home. It means taking control of the "Load".

"Option"

is self-explanatory. It means that this is something you can do if your electricity consumption meets certain qualifications.

"Load Management Option"

There you have it. "Load Management Option" means that you can, if you want to, control or schedule when and how much electricity you use at any given point in time. You can do this by hand, or with automatic, electronic load control equipment. Either way, practicing "Load Management" can save *you money*.

How Can It Save You Money?

Regulating the amount of electricity coming into your home at any one time can save you money because it can save The Illuminating Company money. If large numbers of customers practice "Load Management", this will reduce the total amount of electricity CEI is required to generate at any given point in time. Right now, in the CEI service area, *most* electricity is used during the daytime and early evening hours as people do their laundry, cooking and other household tasks. Electricity use is lowest during the night and on weekends and holidays. This means that CEI has to use most of its generating equipment during the daytime. On the other hand, some of that same equipment

sits idle at night, on weekends and holidays. Idle generating equipment is expensive.

CEI could save money, and so could you, if CEI could use its generating equipment more efficiently . . . in other words, use less of it in the daytime and more of it at night.

Just as your car operates most efficiently while being driven at a steady rate of speed, CEI's generators work most efficiently when electricity is used evenly throughout the day and night.

In both cases, the higher efficiency results in less energy consumed and, of course, lower costs . . . for CEI and for you.

That's why we are encouraging our customers, especially those who use large amounts of electricity, to spread that use more evenly around the clock. If you do, we can charge you for your electricity at a lower rate.

What Can You Do To Save Money With The Load Management Option?

You can take full charge of your electricity use. Manage it by scheduling the way you use your major electric appliances.
For example:

- Put a timer on your electric water heater so it will heat your water during the mid-evening hours, or early morning, before you need it.
- Wait for the water heater to recover before drying clothes.
- Avoid using the self-cleaning feature on your oven while you are doing the laundry.

– Wait until your controllable electric loads, such as the range and oven, are over before you use another major appliance.

These are just a few examples. You can think of many more. For example, use major appliances one at a time and never use several of them all at once.

Select From Two Load Management Rate Options.

One of your options is called the "Non-Time-Of-Day" option. This means that you can save money on your electric bills if you manage your use of electric appliances on a daily basis. In other words, you save money by running appliances such as air conditioners and clothes dryers, for example, at different times. Using this option, you are practicing Load Management around the clock, every day.

Your second Load Management Option is called a "Time-Of-Day" option. This means that you manage your use of electric appliances during on-peak time, which is from 8 a.m. to 8 p.m. daily, Monday through Friday.

Your electric bills will be lower if you avoid the same time use of major appliances during those hours. However, under the "Time-Of-Day" option, you do not have to manage your electricity usage at all between 8 p.m. and 8 a.m. Monday through Friday or on weekends or holidays. During those times, the total demand for electricity is low, so it's not really necessary to reduce or control your use of it.

Which Option Is Best For You?

If you use 700 kilowatthours *a month, on average, or,* if you already are in the habit of using only one major electric appliance at a time, or doing only one task at a time, then the "Non-Time-Of-Day" option probably is best for you.

On the other hand, *if you live in an all-electric home, or, if you* tend to use a lot of electricity during the month, or if you use major appliances during the evenings or weekends (two working adults, for example, fit this pattern), then you may benefit from the "Time-Of-Day" option.

Selecting either option requires that your present electric meter be replaced with a load management meter. It not only registers the total kilowatthours of electricity you use during the month but also the rate of flow of electricity during each *30-minute* period. That is your kilowatt demand. But, remember, the meter only *registers* your use. It *does not control* your use of electricity.

If you believe you qualify for the Load Management Option and would like to apply for a special Load Management Rate, just indicate your choice of meters on the postage-paid reply card in this brochure, then detach the card and mail it to The Illuminating Company.

Say You Select The Non-Time-Of-Day Option. Then, What Happens?

The Illuminating Company will install a *special meter* (at a cost of $2.05 per month) which will record your highest electricity use for any single half-hour during the billing month. That is called your peak

demand. It will be used to calculate the number of kilowatthours you have to use in order to qualify for the lower Load Management Rate.

For Example

Here's how the Load Management Rate calculation works . . .

Let's say that, last month, you used 1460 kilowatthours of electricity. And, assume that the largest amount you used at any one time was 7 kilowatts. That is your kilowatt demand: 7.

The demand number (7) is multiplied by 125 hours (this is a mathematical formula used to determine the number of kilowatthours to be billed at your regular electric rate, and the number to be billed at the Load Management Rate).

The 7 kilowatt demand, times 125, equals 875 kilowatthours. This 875 kilowatthours will be billed at your regular electric rate.

Then, the 875 is subtracted from 1460, the total amount of electricity you used, leaving a balance of 585 kilowatthours. These kilowatthours will be billed at the Load Management Rate.

Will You Always Save Money With The Load Management Option?

If, for some reason, your electricity use in one month was such that no portion of it qualified for the Load Management Rate, your electric bill would be calculated at your regular rate. Only the meter charge would be added. The only risk to you, in the event that, during any given month, your energy consumption pattern does not result in savings, is the meter charge.

Be Sure To Keep Your Kilowatt Demand As Low As Possible

That's the secret to success with the Load Management Rate Option. Keeping the kilowatt demand low *reduces* the number of kilowatthours billed at your regular rate, and *increases* the number of kilowatthours billed at the lower rate.

How Soon Will The New Rate Show Up On Your Electric Bill?

Once your new Load Management meter has been installed, fifteen days or more prior to your meter reading date, your bill will reflect the new Load Management Rate.

Here Are Some Suggestions To Help You Keep Your Kilowatt Demand Down:

— Manage your electric water heater with an automatic timer to cycle it on and off.

— When your electric heating system is in operation, turn the thermostat down when another major appliance is in use.
— If you have a heat pump, remember you should raise the temperature not more than two degrees at a time.
— When your comfort system is in the cooling mode, turn your air conditioning thermostat *up or off* while using another major appliance.
— Consider installing a load controller. This device will automatically control your major appliances in ways which will reduce your kilowatt demand.
You may want to use an interlock between your dryer and water heater. This will automatically prevent the possibility of both appliances operating at the same time.
— Homes heated with electric baseboard heating systems offer you the opportunity to turn the individual room thermostats down in any rooms that are not in use.

Here Are Some Appliances Which You Can Control And Save Money Using The Load Management Option:

APPLIANCE	TYPICAL WATTAGE	KILOWATT DEMAND
Air Conditioner	4,500	4.5 kWd
Electric Dryer	4,500	4.5 kWd
Water Heater	5,000	5.0 kWd
Built-In Oven	4,000	4.0 kWd

APPLIANCE	TYPICAL WATTAGE	KILOWATT DEMAND
Range-Full Time Self-Cleaning	12,200	12.2 kWd
Small Surface Unit	1,300	1.3 kWd
Large Surface Unit	2,400	2.4 kWd
Electric Furnace	20,000	20.0 kWd
Heat Pump (3 ton)	4,500	4.5 kWd

Remember...

Load Management meters *measure* kilowatthour consumption and *kilowatt demand.* They *do not* control the load.

You May Want To Try A Load Controller

This device automatically regulates the electricity load in your home while, at the same time, maintaining uniform comfort levels without disrupting cooking, lighting or refrigeration.

Automatic load controllers are *not* used to control electric ranges, lights or small appliances. They only control the load coming through the larger appliances and devices such as air conditioning, electric heating, water heaters and clothes dryers, for example. The load controller can, however, help lower your electric bills by as much as 25 percent.

Call Us For More Information

There's an Illuminating Company "Load Management Line" available for you to call. It's as near as your telephone. In Cleveland, call 347-2538. In Painesville, the number is 354-5661. In Ashtabula, call 800-331-5487.

The Energy Makers are anxious to help you use electricity more efficiently, more effectively and more beneficially.
Call us.

The Illuminating Company
The Energy Makers.

OHIO EDISON COMPANY

RESIDENTIAL ELECTRIC SERVICE RATE 16

Service is furnished through one meter for each family unit in a residence or apartment.

The net monthly charge per customer shall be:

Energy Charge:

$4.80 for the first 50 KWH or less per month
7.33¢ per KWH for the next 80 KWH per month
3.79¢ per KWH for the next 320 KWH per month
3.12¢ per KWH for the next 350 KWH per month
2.92¢ per KWH for all over 800 KWH per month

Load Management Section:

When a load meter is installed, the charge for all KWH in excess of 125 KWH per KW of billing load shall be:

0.62¢ per KWH for all over 125 KWH per KW of billing load.

Minimum Charge:

$4.80 per month.

Minimum Billing Load:

5.0 KW

Fuel adjustment will be added to the energy charge, as applicable

TERMS OF PAYMENT

The net amount billed is due and payable within a period of fifteen days after the date of mailing of the bill. If the net amount is not paid on or before the date shown on the bill for payment of net amount, the gross amount which is 5% more than the net amount is due and payable.

FILED SCHEDULE OF RATES

For detail provisions of this rate schedule and other terms and conditions applicable to electric service; reference should be made to the Company's Schedule of Rates for Electric Service, P.U.C.O. No. 10, filed with The Public Utilities Commission of Ohio. Co are available at Company offices.

Form 142 (Rev. 10-76)
ID No. 5802024

OHIO EDISON COMPANY

RESIDENTIAL ELECTRIC SERVICE RATE 10

Service is furnished through one meter for each family unit in a residence or apartment.

The net monthly charge per customer shall be:

Energy Charge:

$3.60 for the first 50 KWH or less per month
5.65¢ per KWH for the next 80 KWH per month
2.95¢ per KWH for the next 320 KWH per month
2.42¢ per KWH for the next 350 KWH per month
2.26¢ per KWH for all over 800 KWH per month

Load Management Section:

When a load meter is installed, the charge for all KWH in excess of 125 KWH per KW of billing load shall be:

0.62¢ per KWH for all over 125 KWH per KW of billing load

Minimum Charge:

$3.60 per month.

Minimum Billing Load:

5.0 KW

Fuel adjustment will be added to the energy charge, as applicable.

TERMS OF PAYMENT

The net amount billed is due and payable within a period of fifteen days after the date of mailing of the bill. If the net amount is not paid on or before the date shown on the bill for payment of net amount, the gross amount which is 5% more than the net amount is due and payable.

FILED SCHEDULE OF RATES

For detail provisions of this rate schedule and other terms and conditions applicable to electric service, reference should be made to the Company's Schedule of Rates for Electric Service, P.U.C.O. No. 10, filed with The Pul Utilities Commission of Ohio. Copies are available Company offices.

Form 206 (Rev. 3-77)
ID No. 5802962

You may benefit from the load management section of this rate if you use more than 625 KWH per month.

BILL CALCULATION EXAMPLES

Example No. 1

Customer With Load Meter*

1,000 KWH Used and 8.0 KW Load

50 KWH (Minimum)	=	$ 4.80
80 KWH @ 7.33¢	=	5.864
320 KWH @ 3.79¢	=	12.128
350 KWH @ 3.12¢	=	10.92
200 KWH @ 2.92¢	=	5.84
1,000 KWH		$39.55
Fuel (1,000 KWH x $0.0104205**)		10.42
Net Bill		$49.97

* * * * * * * * * * *

Example No. 2

Customer With Load Meter*

1,000 KWH Used and 5.0 KW Load

First 125 KWH x 5.0 = 625 KWH:

50 KWH (Minimum)	=	$ 4.80
80 KWH @ 7.33¢	=	5.864
320 KWH @ 3.79¢	=	12.128
175 KWH @ 3.12¢	=	5.46
0 KWH @ 2.92¢	=	0.0
625 KWH Subtotal		$28.252

Load Management Section:

Balance (1,000 minus 625 = 375 KWH)

375 KWH @ 0.62¢	=	2.325
1,000 KWH		30.58
Fuel (1,000 KWH x $0.0104205**)		10.42
Net Bill		$41.00

*If customer does not have a load meter use Example No. 1. A load meter cannot cause any customer to pay more for electricity than he would pay without one.

**Fuel Adjustment Factor shown on Bill (changes monthly due to variations in the cost of fuel).

You may benefit from the load management section of this rate if you use more than 625 KWH per month.

BILL CALCULATION EXAMPLES

ple No. 1

Customer With Load Meter*

1,000 KWH Used and 8.0 KW Load

50 KWH (Minimum)	=	$ 3.60
80 KWH @ 5.65¢	=	4.52
320 KWH @ 2.95¢	=	9.44
350 KWH @ 2.42¢	=	8.47
200 KWH @ 2.26¢	=	4.52
1,000 KWH		$30.55
Fuel (1,000 KWH x $0.0117189**)		11.72
Net Bill		$42.27

* * * * * * * * * * * * * * *

Example No. 2

Customer With Load Meter*

1,000 KWH Used and 5.0 KW Load

First 125 KWH x 5.0 = 625 KWH:

50 KWH (Minimum)	=	$ 3.60
80 KWH @ 5.65¢	=	4.52
320 KWH @ 2.95¢	=	9.44
175 KWH @ 2.42¢	=	4.235
0 KWH @ 2.26¢	=	0.0
625 KWH Subtotal		$21.795

Load Management Section:

Balance (1,000 minus 625 = 375 KWH)

375 KWH @ 0.62¢	=	2.325
1,000 KWH		24.12
Fuel (1,000 KWH x $0.0117189**)		11.72
Net Bill		$35.84

*If customer does not have a load meter use Example No. 1. A load meter cannot cause any customer to pay more for electricity than he would pay without one.

**Fuel Adjustment Factor shown on Bill (changes monthly due to variations in the cost of fuel).

R. F. "Bob" Schmitt

R. F. "Bob" Schmitt, president of Bob Schmitt Homes, Inc., is a nationally recognized leader in the building industry and has been for over 35 years. During his distinguished career, he has developed numerous subdivisions--consisting of thousands of homes, condominiums and cluster homes.

Bob Schmitt Homes has been identified with a leadership role in energy efficiency research since the early 1970's. Schmitt's involvement with the National Association of Home Builders, the National Institute of Building Sciences and the U.S. Department of Energy has resulted in a comprehensive study of important residential energy questions.

Over the years, many of the nation's most successful builders have sought to learn more about Bob Schmitt's innovations in energy, construction and building company management. And many of the largest suppliers of building materials and equipment routinely seek Schmitt's advice and cooperation in testing new products and building techniques.

Building has been a major part of Bob Schmitt's life right from the beginning. His father was a successful builder as was his grandfather. Schmitt learned his business early and he learned it well. He was graduated from Ohio State University as an industrial engineer. Quality and pride of workmanship have long been associated with Bob Schmitt Homes as well as a personal commitment to excellence.

Annual Energy Cost Comparison

Electric vs. Natural Gas
Space and Water Heating

	Electric		Natural Gas	
	Energy Use	Cost	Energy Use	Cost
Space Heating				
1. Electric	7,444 kWh	$254	—	—
2. Gas				
a. 85% AFUE	—	—	612 CCF	$398
b. 65% AFUE	—	—	800 CCF	$520
Water Heating				
1. Electric	6,000 kWh	$205	—	—
2. Gas, 65% AFUE	—	—	315 CCF	$205
Totals				
1. Electric	13,444 kWh	$459	—	—
2. Gas				
a. 85% AFUE	—	—	927 CCF	$603
b. 65% AFUE	—	—	1,115 CCF	$725

Electric vs. Gas

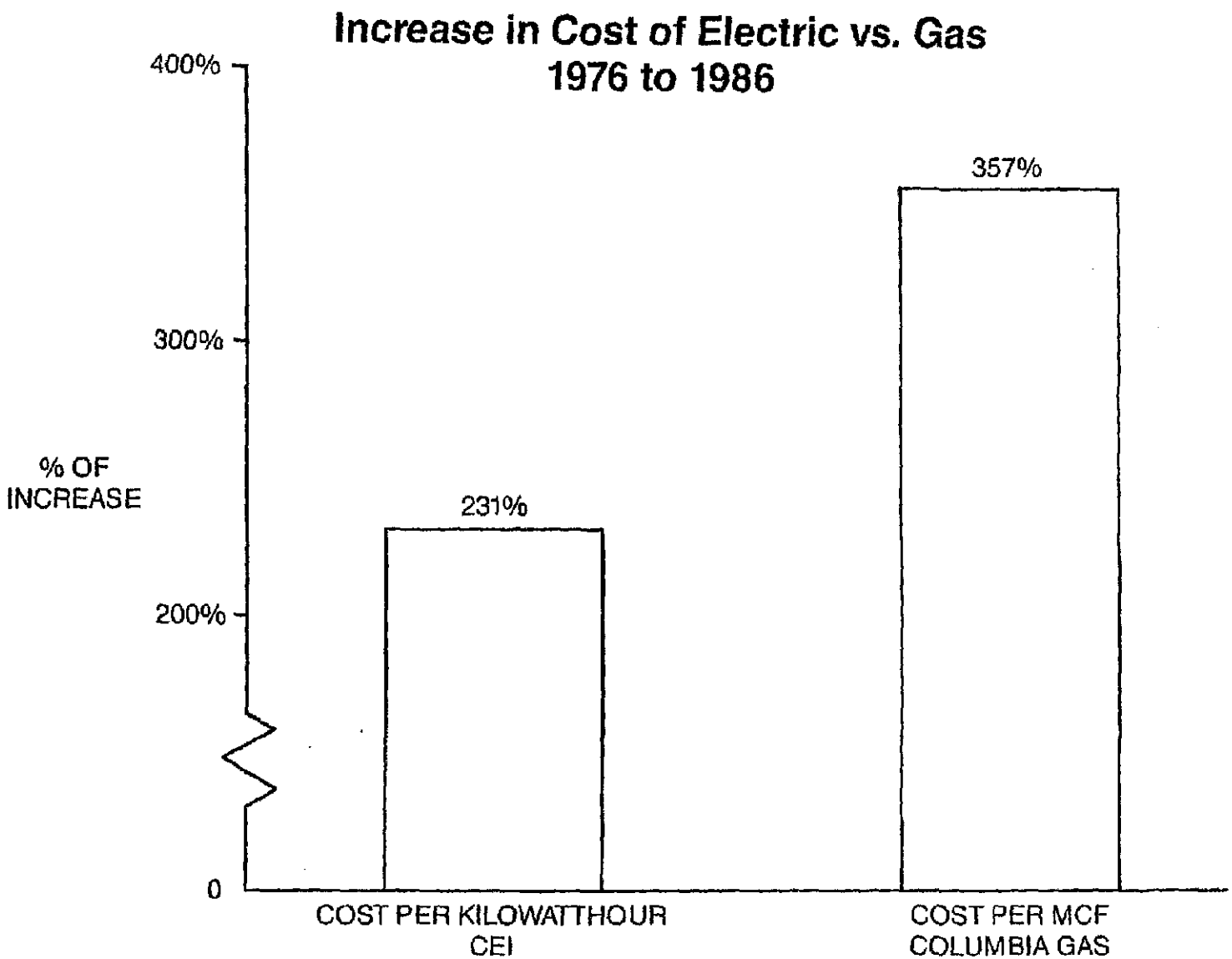
1. Gas S.H. at 85% AFUE: Electric saves $144/year
2. Gas S.H. at 65% AFUE: Electric saves $266/year

Annual Energy Cost Comparison

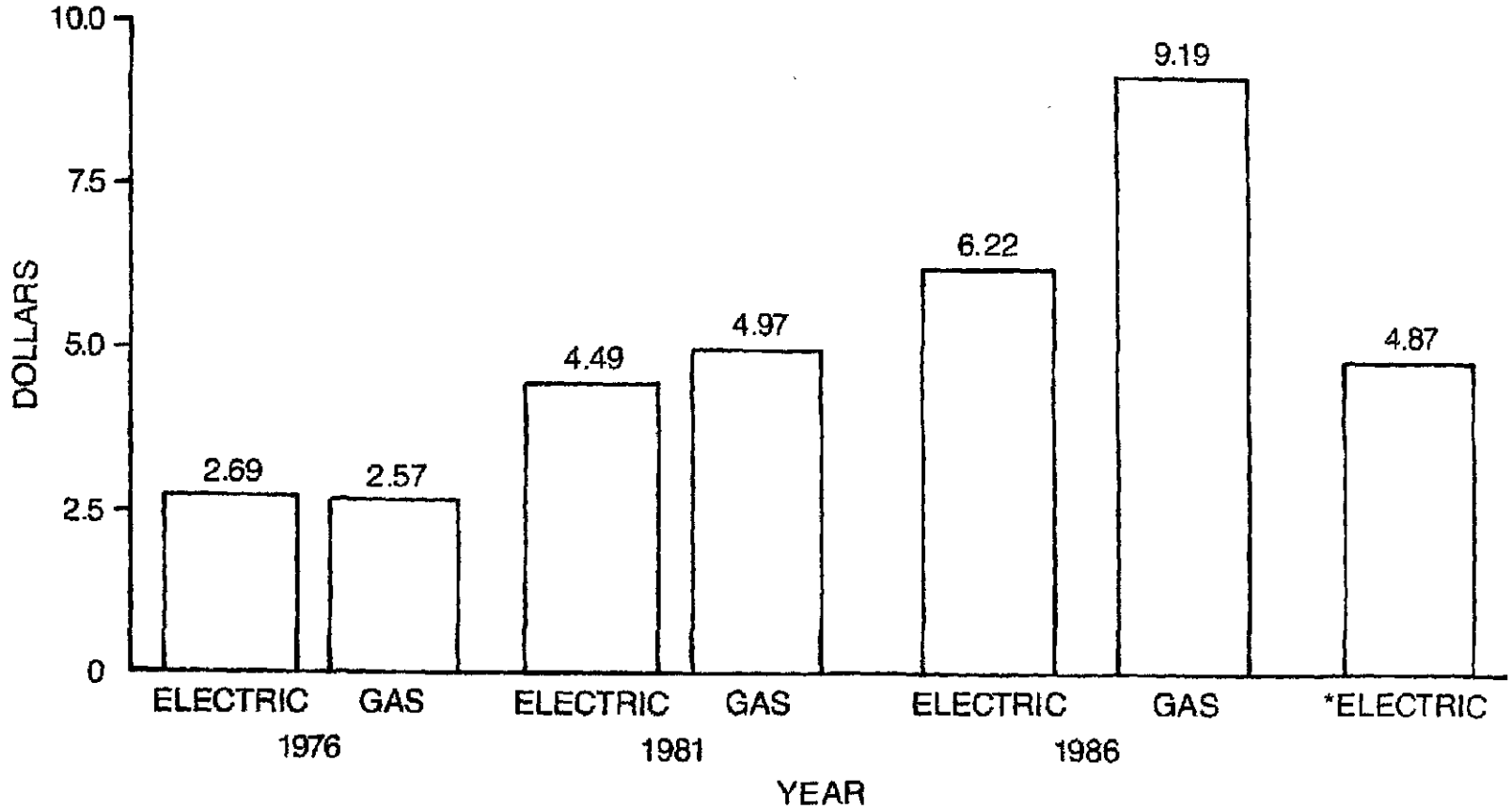
Electric vs. Natural Gas,
Space and Water Heating

BASIC DATA

House Size: 2,050 sq. ft. living area
Heat Loss: 32,334 BTUH
Annual Space Heating Requirement: 52,006,843 BTU
Degree Days: 6125
Heat Pump Efficiency: 2.047 S.P.F.
Gas Space Heating Efficiency: 85%/65% AFUE
Gas Water Heating Efficiency: 65% AFUE
1 kWh = 3,413 BTU
1 CCF = 100,000 BTU (100 cu. ft. gas)
Electric Cost: Space and water heating all at CEI Load Management Tail Rate = 3.41141¢/kWh
Gas Rate: Strongsville, Ohio
Customer Charge: $4.85/month
Plus $.59281/CCF
Average cost for following example: $.65/CCF
Water Heating Use: 500 kWh/month or gas equivalent

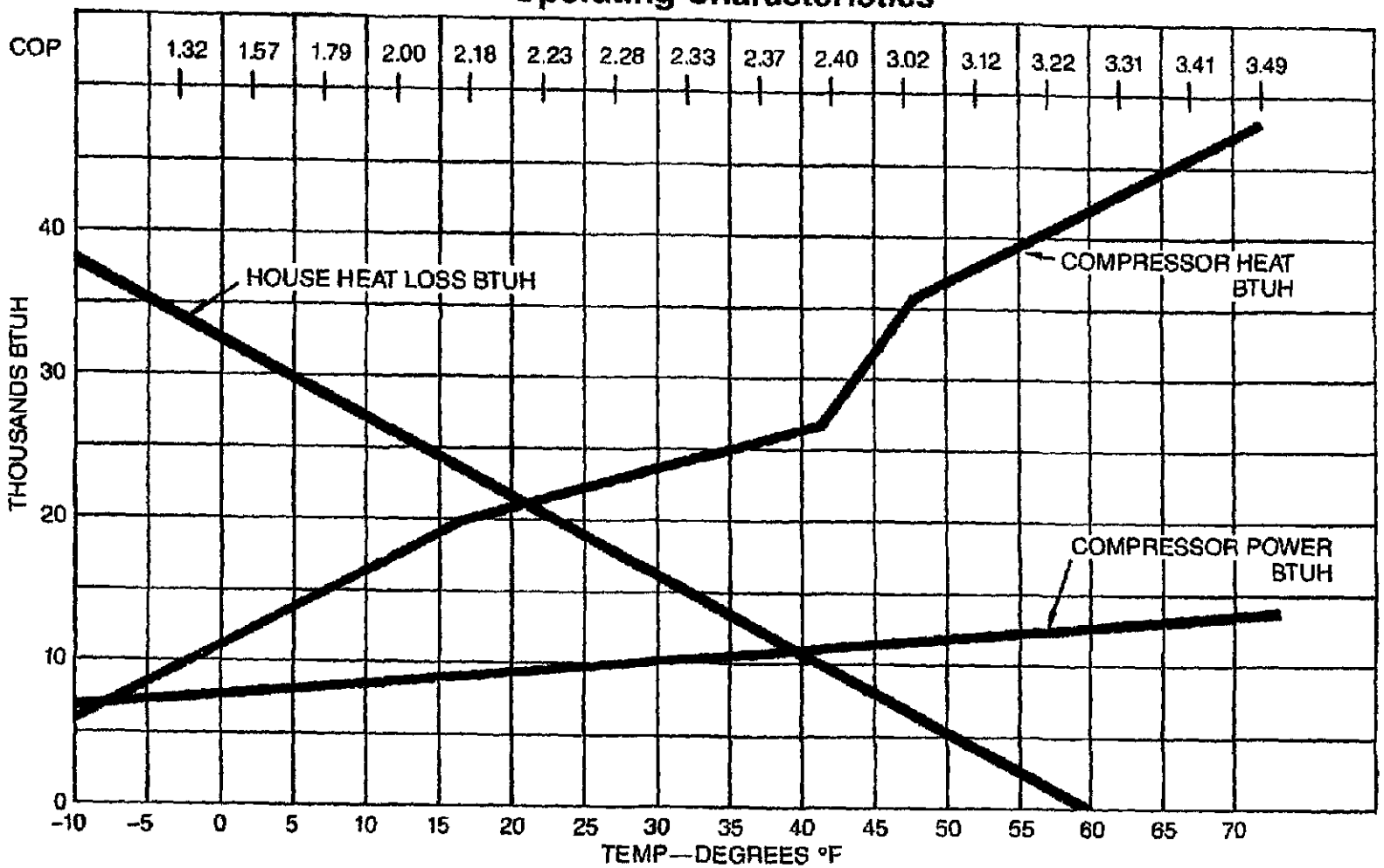

Increase in Cost of Electric vs. Gas
1976 to 1986
400%
300%
200%
0
% OF
INCREASE
231%
357%
COST PER KILOWATTHOUR
CEI
COST PER MCF
COLUMBIA GAS

MBTU $ Cost Rate Comparison
CEI Heat Rate vs. Columbia Gas
(Heat Pump) (Standard Furnace)



*CEI Load Management Rate Option

3 Ton Heat Pump
Operating Characteristics

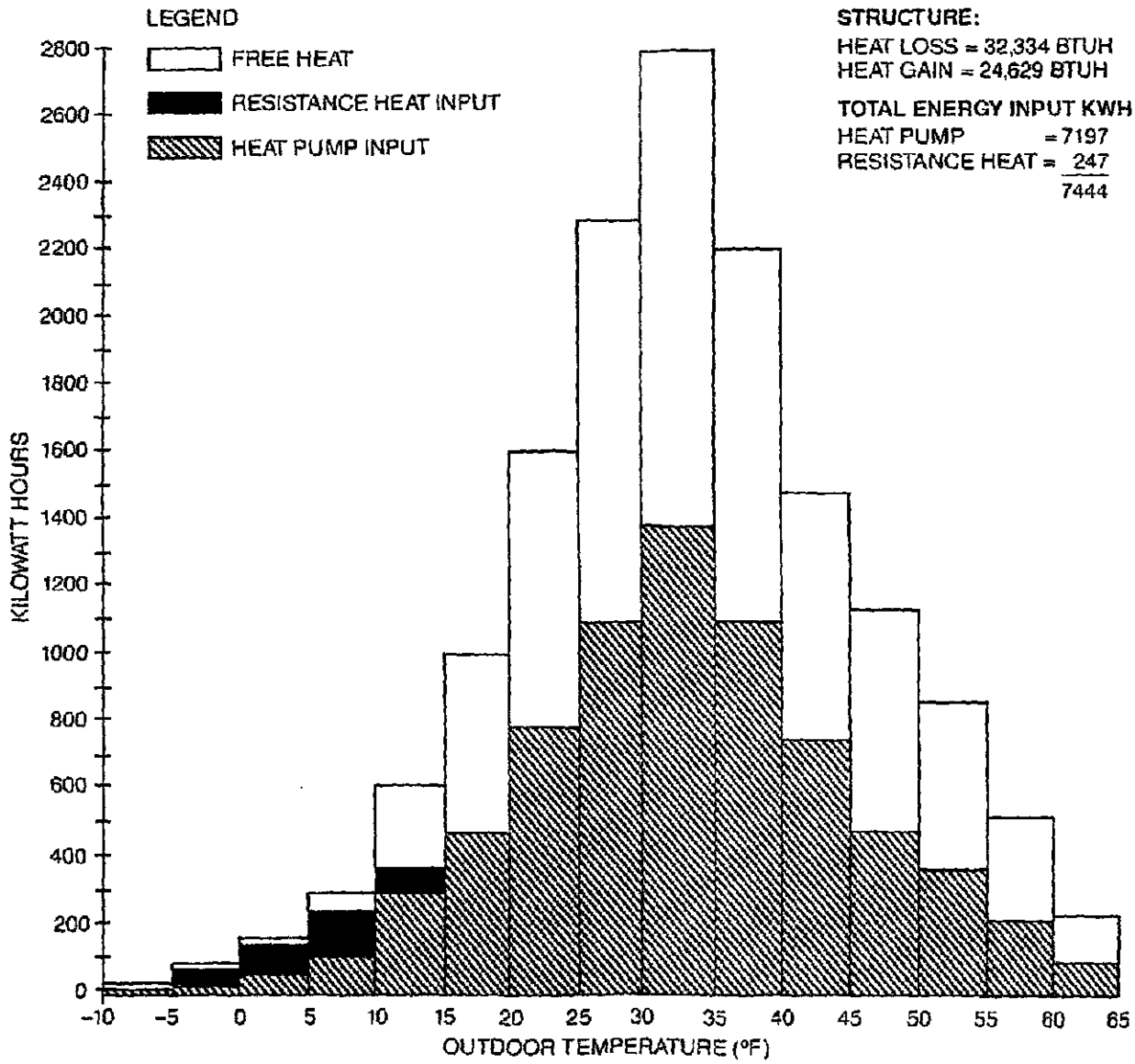


2 11 22 47 111 172 254 343 392 294 188 111 78 46 18 0 = 2089 TOTAL ANNUAL HOURS OPERATION OF COMPRESSOR

ANNUAL HOURS OPERATION OF COMPRESSOR IN EACH 5° SPAN ABOVE

Electric Heat Pump Performance

$$\text{Heating Season Performance Factor} = \frac{\text{System Output } 52.0 \text{ MM BTU}}{\text{Total Energy Input } 25.4 \text{ MM BTU}} = 2.05$$



	Living Area	Cost Load Mgmt. Annual	Annual Cost Gas and Electric
1	1,800	1408	1408
2	1,824	1601	2114
3	1,996	1811	2420
4	1,880	1441	1737
5	2,961	1587	1963
6	1,793	1361	1599
7	3,258	1618	1944
8	2,082	1406	1593
9	2,573	1723	2269
10	2,567	1643	2092
11	2,499	1465	1747
12	2,488	1700	2294
13	2,103	1412	1681
14	1,923	1326	1572

Electric Rates—CEI, current • Gas Rates—Columbia, current

	Living Area	Annual Cost Gas and Electric	Gas Heat, Hot Water Gas HW & H Gas Use Annual (CCF)	Gas HW & H Electric Annual (KWHR)
1	1,800	1408	1022	11359
2	1,824	2114	1030	16510
3	1,996	2420	1095	21194
4	1,880	1737	1051	11748
5	2,961	1963	1462	10818
6	1,793	1599	1021	10120
7	3,258	1944	1573	10207
8	2,082	1593	1130	9796
9	2,573	2269	1314	16259
10	2,567	2092	1312	14176
11	2,499	1747	1288	9613
12	2,488	2294	1282	16213
13	2,103	1681	1136	10011
14	1,923	1572	1069	8293

Electric Rates—CEI, current • Gas Rates—Columbia, current

Average Sq. Ft. KWH Use From the 388 Home 1984 Study Applied to a 2,000 Sq. Ft. House

		Degree Days	Low Group	Average Group	High Group
1	Jan.	1364	2820	3940	4900
2	Feb.	878	2240	2900	3820
3	Mar.	1126	2100	2620	3400
4	Apr.	544	1180	1630	2200
5	May	347	900	1400	1940
6	June	19	700	1200	1720
7	July	16	580	1060	1460
8	Aug.	17	1200	1180	2540
9	Sept.	174	1820	1200	3600
10	Oct.	270	740	1060	1740
11	Nov.	716	680	1960	1560
12	Dec.	877	720	2800	1720
	TOTAL	6348	15680	22940	30600
	KWH/Sq. Ft.		7.84	11.47	15.30
	Total Homes	388	= 20 (5%)	247 (64%)	121 (21%)

	Living Area	Electric Use (KWHR) Annual	KWHRS. Per Sq. Ft.	Cost Load Mgmt. Annual	Cost Reg. Rate Annual
1	1,800	25440	14.13	1408	1650
2	1,824	30700	16.83	1601	1999
3	1,996	36160	18.12	1811	2256
4	1,880	26190	13.93	1441	1678
5	2,961	30140	10.18	1587	1879
6	1,793	24170	13.48	1361	1599
7	3,258	30870	9.48	1618	1886
8	2,082	25150	12.08	1406	1594
9	2,573	33830	13.15	1723	2138
10	2,567	31720	12.36	1643	1989
11	2,499	26850	10.74	1465	1740
12	2,488	33400	13.42	1700	2155
13	2,103	25460	12.11	1412	1670
14	1,923	23560	12.25	1326	1602

Electric Rates—CEI, current • Gas Rates—Columbia, current

Appendix A

BOB SCHMITT HOMES, INC.
388 HOME ELECTRIC USE STUDY

REPORT DATE: 01-31-86

DEGREE DAYS	878	1126	544	347	19	16	17	174	270	716	877	1364	6348		
USAGE MO.....	2/84	3/84	4/84	5/84	6/84	7/84	8/84	9/84	10/84	11/84	12/84	1/85			
BILLING MO....	3/84	4/84	5/84	6/84	7/84	8/84	9/84	10/84	11/84	12/84	1/85	2/85			
STREET	KWHRS	KWHRS	KWHRS	KWHRS	KWHRS	KWHRS	KWHRS	KWHRS	KWHRS	KWHRS	KWHRS	KWHRS	TOTAL KWHRS	SQ. FT. LIVING AREA	KWHRS. PER AREA
AVERAGE GROUP (247) 64%															
BARTON DR.	2790	2440	1770	1700	1580	1110	1480	1420	1370	2070	2950	3590	24270	1923	12.62
BARTON DR.	3370	2730	1700	1480	1030	930	1180	1100	1110	1760	3160	4410	23960	1907	12.56
BARTON DR.	2660	2490	1640	1580	1010	990	1060	1280	1200	2150	2750	3830	22640	1890	11.98
BARTON DR.	4050	2740	1440	1230	760	960	810	1010	920	1910	2790	3940	22560	1879	12.01
BARTON DR.	3130	2520	1980	1640	1450	1280	1290	1090	1260	2280	2620	4150	24690	2011	12.28
BARTON DR.	2320	1960	1210	1080	1120	1040	1210	1110	900	1600	2310	3250	19110	1868	10.23
BARTON DR.	2240	2020	1510	1390	1120	1160	1050	1180	1010	1820	2290	2930	19720	1967	10.03
BARTON DR.	2760	2300	1470	1120	860	740	840	1000	1050	1900	2450	3870	20360	1817	11.21
BARTON DR.	2900	2560	1440	1240	880	780	800	1070	890	1870	2610	3640	20680	1765	11.72
BARTON DR.	3240	2950	1900	1600	1640	1410	1490	1350	1040	1990	2780	4340	25730	2191	11.74
BEECH CREEK TR	4710	4280	2690	2030	1480	1400	1290	1680	1260	2610	3780	5680	32890	2976	11.05
BEECH CREEK TR	2850	2600	1620	1190	1230	1090	1040	1140	1080	2110	2570	3770	22290	1824	12.22
BEECH CREEK TR	1930	1760	1180	1220	1020	790	1060	1160	850	1520	2320	3380	18190	1470	12.37
BEECH CREEK TR	2660	2390	1500	1150	980	860	1000	860	820	1650	2380	3600	19850	1824	10.88
BEECH CREEK TR	2770	2690	1740	1480	870	1280	1390	1410	1080	2050	2720	3940	23420	1835	12.76
BEECH CREEK TR	2890	2540	1560	1400	1170	980	1100	1030	960	1950	2770	4210	22560	1924	11.73
BEECH CREEK TR	3460	2990	1850	1550	1280	1000	920	1200	1140	2140	2920	3640	24090	2032	11.86
BROOKSTONE WAY	2760	2300	1460	1290	960	790	1010	1130	1090	2270	3420	4410	22890	1687	13.57
BROOKSTONE WAY	2900	3030	1800	1770	2120	1940	2040	2010	1450	1970	2890	3850	27770	2749	10.10
BROOKSTONE WAY	3070	2710	1780	1520	1450	1160	1540	1320	1110	2050	3060	3890	24660	1824	13.52
BROOKSTONE WAY	2640	2410	1480	1310	1220	980	1200	1300	1080	1780	2410	3400	21210	1824	11.63
BROOKSTONE WAY	3250	2820	1790	1370	1730	1440	1600	1340	1120	2240	3170	5190	27060	2040	13.26
BROOKSTONE WAY	2150	2170	1200	900	1100	1030	1220	770	620	1280	1960	3270	17670	1824	9.69
CLEARBROOK CIR	3090	2590	1820	1630	1290	1290	1580	1330	1230	1900	2610	3580	23940	1944	12.31
CLEARBROOK CIR	2830	2560	1500	2220	100	780	860	950	930	1890	3000	3940	21560	1944	11.09
CREEK BEND CT	3380	2910	1930	1760	1420	1690	1620	1680	1350	2380	3650	5280	29050	2526	11.50
CREEK BEND CT	4680	4040	2610	2170	1600	1380	1470	1850	1750	3110	4180	5540	34380	2611	13.17
CREEK BEND CT	1980	1760	1040	800	920	830	700	880	720	1500	2060	3340	16530	1816	9.10
CREEK BEND CT	5680	5360	2530	2410	2320	2220	1970	1910	1530	3580	5280	8700	43490	3602	12.07
CREEK BEND CT	2460	2170	1310	1130	820	800	800	850	770	2060	3010	3900	20080	1868	10.75
CREEK BEND CT	2930	2820	1370	1470	1160	1010	1030	1390	1190	2220	3100	3920	23610	1890	12.49
CREEK BEND CT	4000	2980	1700	1420	1290	1440	1360	1150	1060	2450	3210	4580	26640	2316	11.50
CREEK MOSS LN	2800	2460	1740	1330	1470	1340	1600	1160	1020	1860	2050	3940	22770	1772	12.85
CREEK MOSS LN	3700	3040	2190	1890	1780	1900	2400	2000	1590	2700	3880	5060	32730	2472	13.24
CREEK MOSS LN	2570	2220	1410	1190	1090	1220	1730	1220	1100	2050	2970	3990	22260	1996	11.15
CREEK MOSS LN	2530	2300	1960	1730	1510	1470	1700	1610	1430	2180	2940	3730	25090	2064	12.16
CREEKSTONE CIR	2960	2430	1340	1430	1500	1240	1430	1310	1040	1810	2500	3930	23000	2030	11.34

BOB SCHMITT HOMES, INC.
388 HOME ELECTRIC USE STUDY

REPORT DATE: 01-31-85

DEGREE DAYS	878	1126	544	347	19	16	17	174	270	715	877	1364	6348		
USAGE MO.	2/84	3/84	4/84	5/84	6/84	7/84	8/84	9/84	10/84	11/84	12/84	1/85			
BILLING MO.	3/84	4/84	5/84	6/84	7/84	8/84	9/84	10/84	11/84	12/84	1/85	2/85			
STREET	KWHRS	KWHRS	KWHRS	KWHRS	KWHRS	KWHRS	KWHRS	KWHRS	KWHRS	KWHRS	KWHRS	KWHRS	TOTAL KWHRS	SQ. FT. LIVING AREA	KWHRS. PER. AREA

SUMMARY

247	AVERAGE GROUP HOMES & CLUSTERS	64%
121	HIGH GROUP HOMES & CLUSTERS	31%
20	LOW GROUP HOMES & CLUSTERS	5%
388	TOTAL DWELLINGS IN STUDY	100%

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

P.O. BOX 5000 - CLEVELAND, OHIO 44101 - TELEPHONE (216) 622-9800 - ILLUMINATING BLDG. — 55 PUBLIC SQUARE

Serving The Best Location in the Nation

READ CAREFULLY TO SEE HOW YOU

CAN SAVE ON YOUR ELECTRIC BILL

Dear Electric Heating Customer:

Your decision to live in an electrically heated home was a wise one.

Now you have the opportunity to benefit even further from that decision by reducing your monthly bill for electricity.

This can be accomplished if you decide to participate in one of two special electric rate options now available from the Illuminating Company.

Either of these special programs is available to you for a small monthly metering charge, which, depending on your particular electric energy needs, will likely be far exceeded by the savings you experience.

As an electric heating customer, you may already be experiencing lower energy bills than those heating their homes with natural gas. The load management rate options now available can result in even further savings for you.

Enclosed, please find our brochure that describes how you can begin saving on your electric energy bill. Also included is a "Request for Start-up" card. Please be sure to sign the card before mailing it back to us. If you have questions about the Load Management Option, please call 687-6570, in Cleveland. In Ashtabula, Geauga or Lake Counties, call your local Illuminating Company telephone number and ask for the Load Management Line.

Sincerely,

Anthony N. Discenza

Anthony N. Discenza
General Supervisor
Residential Marketing Department

Enclosure

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

P.O. BOX 5000 - CLEVELAND, OHIO 44101 - TELEPHONE (216) 622-9800 - ILLUMINATING BLDG. — 55 PUBLIC SQUARE

Serving The Best Location in the Nation

April 8, 1987

Dear Valued Customer:

You are invited to participate in a program designed to assure top performance from your heat pump system. This three part program addresses heating/cooling system performance, offers rebates directly to you, and provides answers to your questions on competitive rates, special discounts, and future pricing. (If you have recently participated in our "pilot" program, please disregard Part I of this program.)

PART I - SPECIAL $10 HEAT PUMP SYSTEM CHECK-UP

We have retained several local certified heat pump contractors to give your system a complete check up for only $10. The contractor will check your heating and cooling system, inside and out, and evaluate its condition. If repairs are needed, the contractor will give you a quotation for your approval before proceeding. Please select your contractor from the enclosed list.

PART II - $400 DIRECT REBATE ALLOWANCE

If the contractor check-up reveals a need to replace your heat pump condensing unit, The Illuminating Company will rebate $400 directly to you under the conditions outlined on the enclosed form.

PART III - PERSONAL SERVICE

Once your heat pump system has been checked, please take a moment to consider any questions you may want answered. Such as: Do I receive a discount for electric heating and water heating? Are there other rate options available to me? What is the proper way to operate my heating system for optimum comfort and performance? What about future costs of electricity? and, Do you offer a "free" home-call service? These questions are asked most often.

If you would like to speak with one of our representatives about these or any other questions, please call:

1-800-331-5487 - Lake, Geauga, and Ashtabula Counties
447-2530 - Cuyahoga and Lorain County

We have also enclosed a brochure, "The Amazing Electric Heat Pump", which may answer many of the questions you have regarding your heating system's operation and performance.

Your home has the cleanest, most efficient heating system available. Please take a moment today and fill out the response card for your special $10 heat pump check-up and keep your system operating at peak efficiency and comfort. The offer expires May 15, 1987.

Sincerely,

Anthony N. Discenza

Anthony N. Discenza
General Supervisor
Residential Marketing Department

Enclosures

DISTRIBUTOR CERTIFIED HEAT PUMP CONTRACTORS

Contractor	Located In	Counties Serviced	Major Brands*
All Seasons Mechanical	Auburn Township	Geauga - Lake	GE/Trane
Alpine Refrigeration	Eastlake	Ashtabula - Geauga - Lake	GE/Trane
Apple Heating, Inc.	Ashtabula	Ashtabula	GE/Trane
Burton Sheet Metal	Burton	Geauga	GE/Trane - Lennox
Claridon Heating	Concord	Geauga - Lake	Carrier
Comfort Supply Co.	Geneva	Ashtabula	York - GE/Trane
Environmental Conditioning Systems	Eastlake	Ashtabula - Geauga - Lake	York
T. P. Fisher	Ashtabula	Ashtabula	Carrier
Klouda Sheet Metal	Newbury	Geauga	GE/Trane
Lake County Sheet Metal	Painesville	Lake	Lennox
Low's Reliable	Fairport Harbor	Lake	Bryant
Massah A/C & Heating	Painesville	Lake	GE/Trane
Overholt Heating & A/C	Willoughby	Geauga - Lake	Rheem
Rainbow Services	Novelty	Geauga	GE/Trane - Moncrief - Rheem
Bill Reynolds Heating & A/C	Eastlake	Lake	Carrier
Lynn Santee, Inc.	Painesville	Lake	GE/Trane
Williams Electric	Chardon	Geauga	Carrier

* Contractors service other brands in addition to those listed.

IMPORTANT - In the unlikely event that the participating contractor finds your heat pump condensing unit inoperable, The Illuminating Company will, with your permission:

- Authorize replacement by the participating contractor upon receipt of his evaluation report.
- Rebate $400 directly to you upon field verification of installation.

UPON INSTALLATION, please send this form and a copy of the contractor's invoice for replacing your heat pump condensing unit to:

The Illuminating Company
P.O. Box 5000
Cleveland, OH 44101

Attention: Residential Market Utilization
Room IND-439

Please allow 1-3 weeks for your rebate check to arrive.

The $10 heat pump check-up offer expires May 15, 1987. Heat pump replacements must be completed by July 15, 1987. The program is not retroactive and is intended only for our electric heat pump customers.

GENERAL ELECTRIC COMPANY
* * CAC APPLICATION ENGINEERING * *
HEATING CASH FLOW & PAYBACK PROGRAM

JOB NAME: ARCO HEATING CO. DATE: 05/10/83

LOCATION: CLEVELAND, OH TIME: 15:06CDT

SYSTEM (1): LENNOX PULSE AFUE (92.00) LOAD: 58000.BTUH

SYSTEM (2): GE EXECUTIVE (80.00) DEGREE DAYS: 6095.

SYSTEMS INITIAL COST DIFFERENCE : -1000.00

	FUEL CONSUMPTION	FUEL RATES	THEORETICAL FUEL COST	ESCALATION RATES
SYSTEM (1):	1014.THERMS	0.610$/THERM	618.54 GAS COST	15.0% GAS COST
SYSTEM (2):	1167.THERMS	0.610$/THERM	711.67 GAS COST	15.0% GAS COST

YEAR	ANNUAL FUEL COST (2)	ANNUAL FUEL COST (1)	FUEL COST SAVINGS (2-1)	CUMULATIVE CASH FLOW	PRESENT WORTH @ 20.87%	CUMULATIVE PRESENT WORTH
0	INITIAL COST DIFFERENCE : -1000.00					
1	711.67	618.54	93.13	-906.87	77.04	77.04
2	818.42	711.32	107.10	-799.78	73.30	150.34
3	941.18	818.02	123.16	-676.62	69.74	220.08
4	1082.36	940.72	141.63	-534.98	66.35	286.43
5	1244.71	1081.83	162.88	-372.10	63.12	349.55
6	1431.42	1244.10	187.31	-184.79	60.06	409.61
7	1646.13	1430.72	215.41	30.61	57.14	466.75
8	1893.05	1645.33	247.72	278.33	54.36	521.11
9	2177.80	1892.13	284.88	563.21	51.72	572.83
10	2503.56	2175.95	327.61	890.82	49.21	622.03
11	2879.09	2502.34	376.75	1267.57	46.81	668.85
12	3310.95	2877.69	433.26	1700.83	44.54	713.39
13	3807.59	3309.34	498.25	2199.08	42.37	755.76
14	4379.73	3805.75	572.99	2772.07	40.32	796.08
15	5035.54	4376.61	658.94	3431.01	38.36	834.43
16	5790.88	5033.10	757.78	4188.79	36.49	870.93
17	6659.51	5788.06	871.44	5060.23	34.72	905.64
18	7658.43	6656.27	1002.16	6062.39	33.03	938.68
19	8807.20	7654.71	1152.49	7214.88	31.43	970.10
20	10128.28	8802.92	1325.36	8540.24	29.90	1000.00

PAYBACK PERIOD 6.86 YEARS, (ZERO INTEREST BREAK EVEN POINT)

RETURN ON INVESTMENT 20.87% , (DISCOUNTED CASH RATE OF RETURN)

THE AFUECOST PROGRAM INCLUDES EQUIPMENT INITIAL COST, FUEL COST AND ESCALATIONS, IT DOES NOT INCLUDE MAINTENANCE COST OR REPLACEMENT COST IN THE ECONOMIC ANALYSIS.

VERY IMPORTANT

***OPERATING COSTS OR ANNUAL USAGE VALUES ARE ESTIMATES ONLY AND ARE ONLY SHOWN TO PROVIDE A COMMON BASIS OF COMPARISON BETWEEN SYSTEMS AND/OR FUELS

COURTESY OF GENERAL ELECTRIC CO.

GENERAL ELECTRIC COMPANY
* * GAC APPLICATION ENGINEERING * *
ADD ON HEAT PUMP DYNAMIC SEASONAL PERFORMANCE PROGRAM

JOB NAME: CEI MEETING DATE: 02/22/83

LOCATION: CLEVELAND,OH TIME: 06:50CST

O.D. TEMP. = 0.F I.D. TEMP. = 70.F DESIGN LOAD = 55000. BTUH
TSTAT SET @ 70.F C FACTOR = 0.77
* MODEL - BWX736A BXA736P-HP AIRFLOW 1200. CFM
FURNACE OUTPUT = 65000. BTUH RESTRICTED OPERATION

A=OUTDOOR TEMPERATURE (DEG.F)
B=HEAT LOSS (MBTUH)
C=HEAT PUMP HEATING CAPACITY (MBTUH)
D=HEAT PUMP RUN TIME (%)
E=HEAT PUMP CONTRIBUTION (MBTUH)
F=HEAT PUMP INPUT (KW)
G=SEASONAL HEATING HOURS
H=SEASONAL HEAT PUMP INPUT (KWH)
I=ALTERNATE FUEL CONTRIBUTION (MBTUH)
J=FURNACE EFFICIENCY (%)
K=SEASONAL ALTERNATE FUEL USAGE (KWH)
L=DEGREE HOURS.

A	B	C	D	E	F	G	H	I	J	K	L
62	1.8	40.9	4.4	1.8	3.6	732	152.59	0.0	0.0	0.00	2196
57	4.8	38.4	12.6	4.8	3.5	641	359.87	0.0	0.0	0.00	5128
52	7.9	35.9	21.9	7.9	3.4	638	588.28	0.0	0.0	0.00	8294
47	10.9	33.4	32.6	10.9	3.3	607	783.85	0.0	0.0	0.00	10926
42	13.9	24.8	56.1	13.9	3.0	620	1182.46	0.0	0.0	0.00	14260
37	16.9	23.5	72.1	16.9	3.0	754	1735.40	0.0	0.0	0.00	21112
32	20.0	22.2	89.8	20.0	2.9	806	2159.28	0.0	0.0	0.00	26598
27	23.0	21.0	86.5	18.1	2.8	578	294.40	23.0	61.8	5041.83	21964
22	26.0	19.7	0.0	0.0	2.8	355	0.00	26.0	63.6	4252.75	15265
[illegible]	29.0	18.4	0.0	0.0	2.7	201	0.00	29.0	65.4	2616.04	9648
[illegible]	32.1	15.9	0.0	0.0	2.6	111	0.00	32.1	67.0	1556.67	5883
[illegible]	35.1	13.4	0.0	0.0	2.5	47	0.00	35.1	68.4	706.06	2726
2	38.1	10.9	0.0	0.0	2.4	22	0.00	38.1	69.7	352.56	1386
-3	41.1	8.4	0.0	0.0	2.3	11	0.00	41.1	70.7	187.47	748
-8	44.2	0.0	0.0	0.0	0.6	2	0.00	44.2	71.6	36.15	146
				TOTALS			7256.			14750.	146280

FURNACE ONLY SYSTEM:
GAS CONSUMPTION (THERMS) - 1526. (58.0% SEASONAL EFFICIENCY)
THEORETICAL HEATING COST - $ 778.26

ADD ON HEAT PUMP SYSTEM:
GAS CONSUMPTION (THERMS) - 503. (64.2% SEASONAL EFFICIENCY)
ELECTRIC CONSUMPTION (KWH) - 7256.
THEORETICAL GAS COST - $ 256.53
THEORETICAL ELECTRIC COST - $ 312.01
THEORETICAL HEATING COST - $ 568.54

SEASONAL COST FACTOR - 1.37 SEASONAL COST SAVINGS - $ 209.72

BASED ON 0.043 PER KWH ELECTRICITY - 0.510 PER THERM GAS

THIS SYSTEMS D.O.E. MINIMUM HSPF FOR REGION 4 IS 6.65 BTU PER WATT

APPLICATION BALANCE POINT 29. DEGREES * ECONOMIC BALANCE POINT 10. DEGREES

OPERATING COSTS ARE ESTIMATES ONLY AND ARE ONLY SHOWN TO PROVIDE
** A COMMON BASIS OF COMPARISON BETWEEN THE TWO HEATING SYSTEMS. **

COURTESY OF GENERAL ELECTRIC CO.

ANSWER: MOST FOLKS.

This brochure tells the whole story on the unmatched comfort, efficiency and economy you get with a flameless electric heat pump. . . especially if you already have a regular heating system.

The Illuminating Company
The Energy Makers.
A Centerior Energy Company

(Residential Marketing Department)

flameless electric add-on heat and cool pump, in combination with your present heating system, can bring to your home the most comfortable, most energy efficient, most affordable heating and cooling system available today.

This modern, high tech, state-of-the-art comfort system, working with your gas, oil or propane fueled furnace, will keep you more comfortable, at lower cost, than you have been in the past. Look into it. You'll be glad you did.

There's a big emphasis today, among homeowners, on comfort, efficiency and economy in just about all aspects of home ownership. And, thanks to many technological advances in the home building and home heating industries, highly efficient energy usage and total year round comfort now are completely compatible, realistic and achievable goals. This is equally true whether you are buying or building a new home or remodeling an existing home.

YOU OWE IT TO YOURSELF TO LOOK INTO THE ADD-ON HEAT AND COOL PUMP.

The following pages describe in detail how this comfort sys can be a great benefit to your family on a year-round basis.

If, in order to make a completely informed decision regardi your own heating requirements, you need additional inform feel free to call The Illuminating Company and ask for a residential heating specialist to discuss your specific situati There is no cost or obligation for this service. The Illuminat Company can also provide you with a list of qualified "CAR heating and cooling contractors–contractors who are committed to providing: **Comfort And Reliability in Electric** heating and cooling installations.

When is the best time to look into the add-on heat and cool pump?

- Whenever you decide to replace or add a central air conditioning system.

Vhen you're about to replace a worn out forced air furnace.

Vhen you're shopping for a new home.

t any time that you decide to increase the comfort, fficiency and economy of your present heating system.

THE ADD-ON HEAT AND COOL PUMP OFFERS TOTAL COMFORT—YEAR ROUND AT LOWER COSTS.

r're considering a new central air conditioning system or ing about replacing your present one, you owe it to yourself k into the high efficiency add-on heat and cool pump.

lding it to your present furnace, you optimize the efficiency th your heating and cooling system. In summer, the "cool" serves as a central air conditioner, removing warm air and dity from your home. In cold weather, the "heat" pump s on automatically to provide comfort down to about 30°F or temperature. Below 30°F, the gas or oil furnace takes o provide for your heating needs.

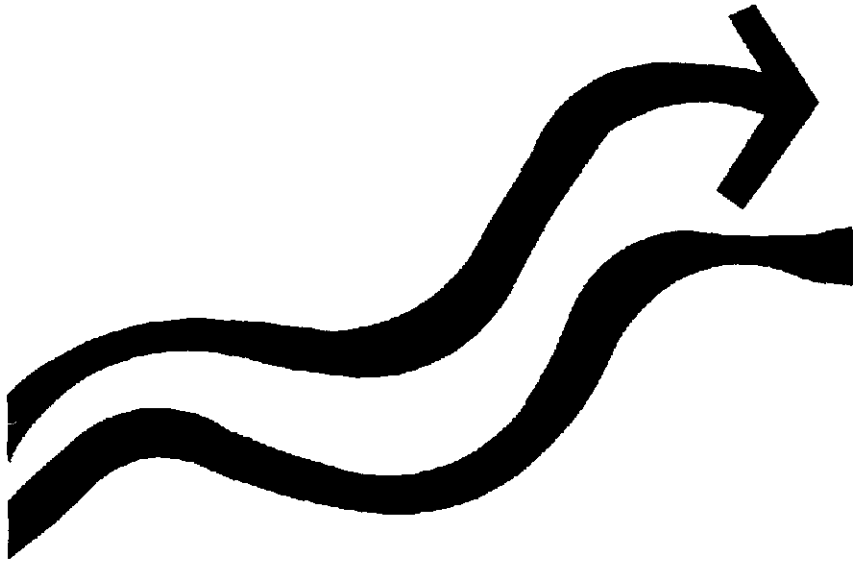
ee, your furnace is designed to work most efficiently when low 30°F outside. But above 30°F, when a furnace is much less efficient because of constantly cycling on-off, it's the add-on electric "heat" pump that reaches peak heating efficiency. The system's automatic selection of energy sources provides you with the least expensive means to warm your home . . . no matter how severe the weather.

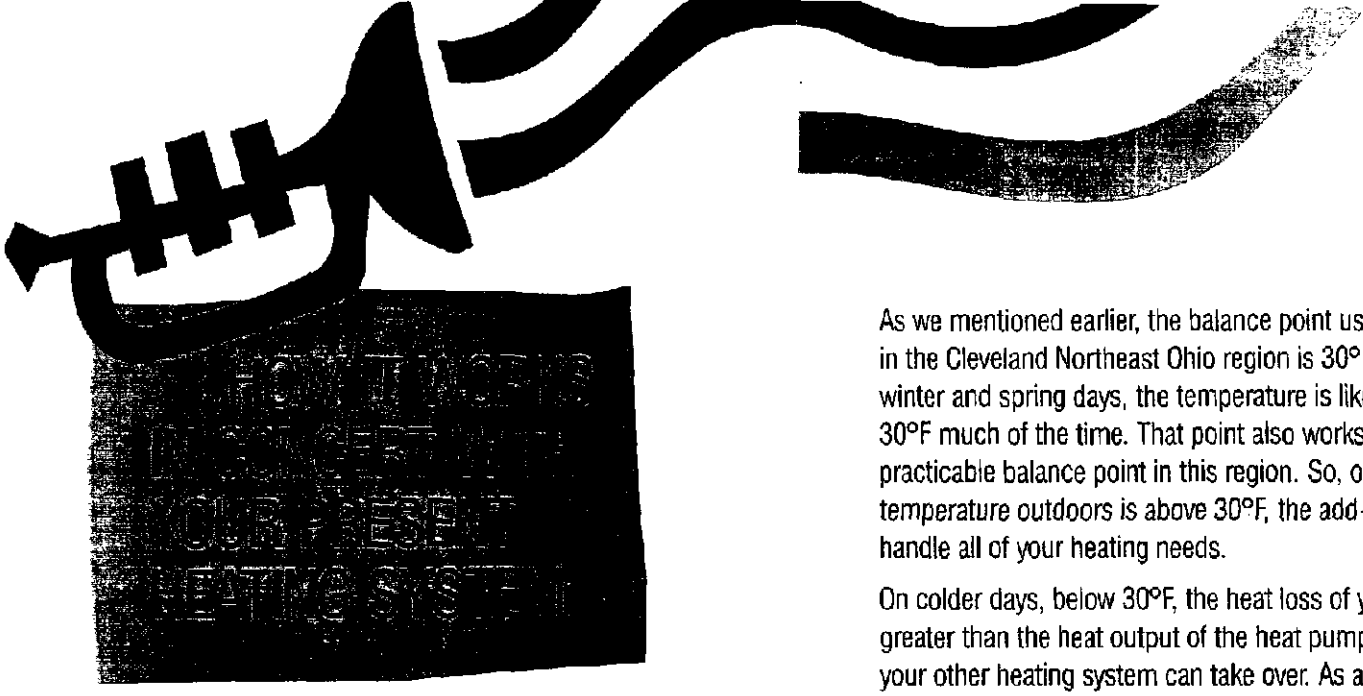
HERE'S HOW IT WORKS TO SAVE YOU MONEY.

When you add a high efficiency add-on electric heat and cool pump to your present furnace, a separate electric meter is installed to record only the electricity used by the add-on heat and cool pump. This separate meter allows us to record electricity usage and bill it to you at a special discount rate—in the summer for cooling; in the winter for heating.

Using this separate meter and taking advantage of the discount electric rate, you'll realize savings of 30% to 70% for winter heating and savings of up to 18% for summer cooling.

The money you save on your gas or oil bills during the winter heating months may more than pay for your whole house cooling in the summer. It could be like getting free air conditioning.





The heat pump will work in combination with your existing gas or oil furnace or any other ducted system. Each operates when it's most efficient.

When the outdoor temperature is warm to hot, the heat pump provides *cooling*.

At mid-range outdoor temperatures, the heat pump will meet all of your *heating* requirements.

When outdoor temperatures are at their coldest, your regular furnace can take over the heating duties.

THE BALANCE POINT IS A KEY FACTOR.

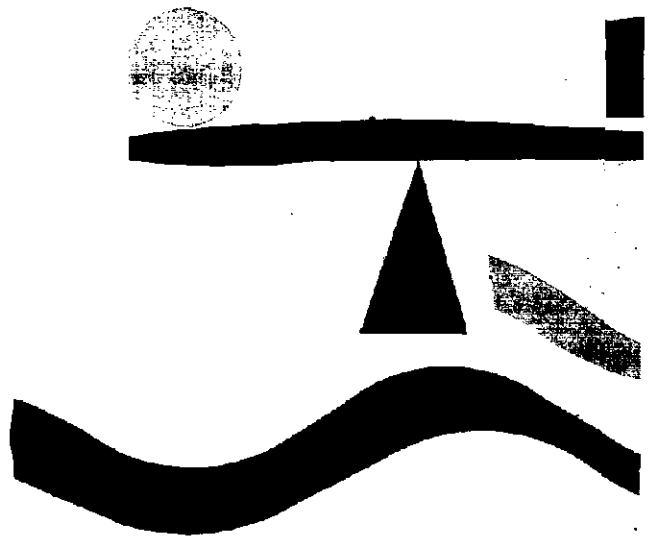
The balance point is expressed in terms of the outdoor temperature. It is outdoor temperature above which the heat pump supplies the heating requirements of the home and below which home heating requirements are handled by the natural gas or oil furnace.

As we mentioned earlier, the balance point used most often in the Cleveland Northeast Ohio region is 30°F. On normal fa winter and spring days, the temperature is likely to be above 30°F much of the time. That point also works out to be the r practicable balance point in this region. So, on days when th temperature outdoors is above 30°F, the add-on heat pump handle all of your heating needs.

On colder days, below 30°F, the heat loss of your home may greater than the heat output of the heat pump. On those day your other heating system can take over. As a matter of fact, most gas or oil furnaces are designed to work best when it's below 30°F outside. Above 30°F, a gas or oil furnace becom *highly inefficient because it is constantly cycling on and off.* And, that's the point where the add-on heat pump reaches i *peak heating efficiency.*

The potential savings depends on a number of variable facto such as the efficiency of the heating system you now have, cost of fuel today and in the future and the way your home i constructed and insulated.

The main point to remember is that by taking advantage of best aspects of *two* heating sources, you'll get greater econ and efficiency from *both.* And, of course, greater comfort. I the best of both worlds!



add-on heat and cool pump is very different from your cal fossil fuel burning furnace. It heats differently. It doesn't *duce* heat. It *moves* heat and that's easier and less costly ı producing it.

re's a substantial amount of heat in winter air. In fact, the air °F contains about 89% of the heat that is available in air at °F. A heat pump extracts this heat from the outside air and ıps it into your home and circulates it throughout the house. get higher efficiency because the heat is free to begin with t comes from the sun.

:e the heat pump is transferring heat, rather than creating t, it can produce up to three units of heating for each unit of :tricity used. That's 300% efficient.

:omparison, the majority of gas or oil furnaces in operation ay only range between 50% and 70% efficient. That means get only 50¢ to 70¢ worth of heat for every dollar spent on ting energy. That's not a very good deal.

eat pump, on the other hand, produces up to $3 worth of t energy for every $1 worth of electricity it uses. That's real rgy efficiency! The highest efficiency you can get, in fact, n any conventional residential heating system on the 'ket today.

YEAR ROUND COMFORT IS ANOTHER KEY FACTOR.

One of the biggest advantages of the add-on heat and cool pump is its ability to provide summer air conditioning. In fact, if you are thinking about replacing an old central air conditioner, the add-on heat and cool pump should be the first option you investigate.

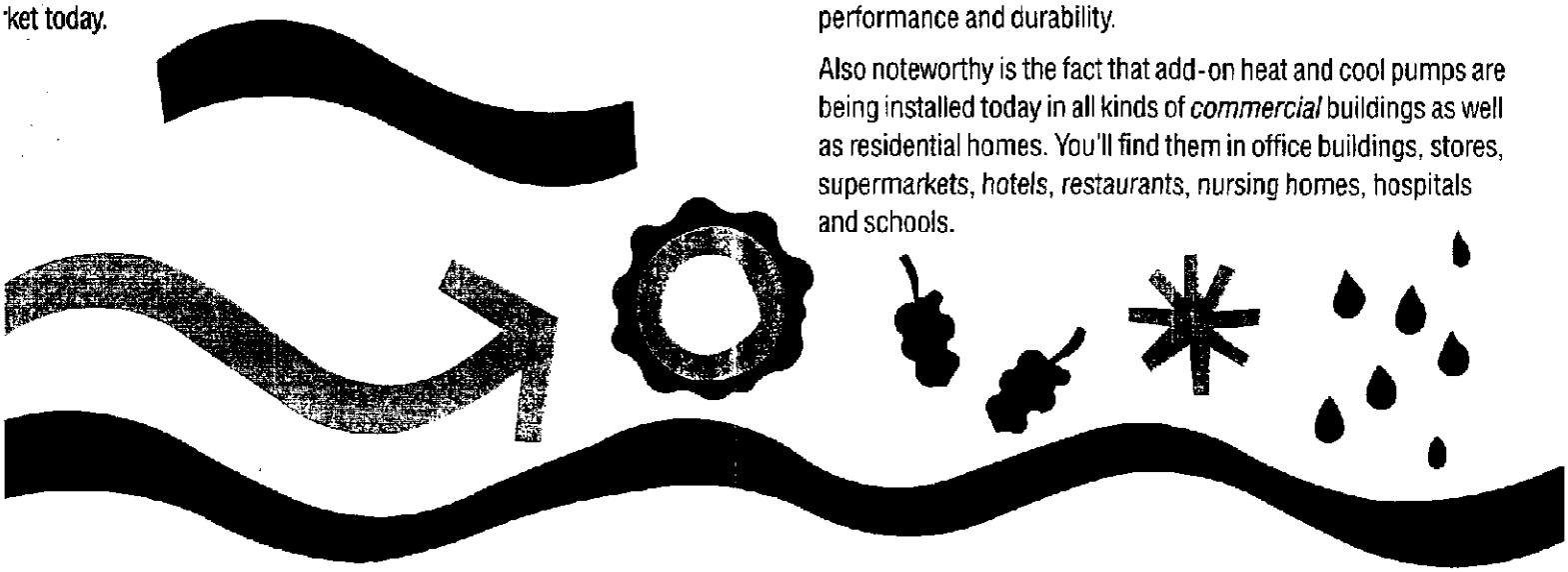
For only a slightly larger investment as you would make just to keep your home cool, you could have an add-on heat and cool pump that would both cool your home in summer *and heat* it during the spring, fall and winter.

The add-on heat and cool pump looks and operates like a central air conditioner. It is sized based on your cooling needs and will provide all of your heating needs down to an outdoor temperature of about 30°F. Below that temperature, your present furnace takes over.

So it's easy to provide for an add-on heat and cool pump in your future. Whatever the size, age or style of your home, if it has reasonably good insulation and the ductwork is properly sized, your home is a prime candidate for adding the advantages of the add-on heat and cool pump.

While heat pumps have been around for more than 40 years, manufacturers have continuously improved upon their efficiency, performance and durability.

Also noteworthy is the fact that add-on heat and cool pumps are being installed today in all kinds of *commercial* buildings as well as residential homes. You'll find them in office buildings, stores, supermarkets, hotels, restaurants, nursing homes, hospitals and schools.

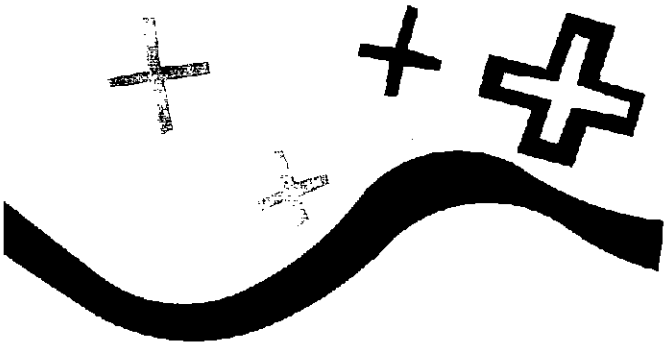


THE HEAT PUMP IS IDEALLY SUITED FOR NEW HOMES.

If you are planning to buy or build a new home, be sure to look into the benefits and advantages of the flameless electric heat pump right at the outset before you start building.

AND THERE ARE MORE BENEFITS...

- CLEAN. Because there's no combustion, there's no soot, no dirt, no oily film. Walls, furnishings and draperies remain new looking and clean longer.
- COMFORT. The air supplied by a heat pump is delivered at a "softer" temperature permitting the heat pump to run for a longer period of time. This results in even temperatures in each room and overall comfort throughout the home.
- FULLY AUTOMATIC. You can set the temperature level you want and your heat pump will maintain it.
- LOWER OPERATING COSTS. The Illuminating Company has special electric rate discounts which make your heating costs lower with a heat pump.



There used to be a myth that heat pumps are unjustifiably expensive. No more. The fact is that when you compare the costs of a new high efficiency electric heat pump with the co of a high efficiency gas furnace plus a high efficiency air conditioner, the installed costs for heat pumps are just about same or less! The benefit of a heat pump is that you don't ha buy a separate cooling system. You already have one.

OPERATING COSTS ARE HIGHLY COMPETITIVE WITH GAS.

There is ample evidence to support that claim. For example, one-year study was conducted of 157 nearly identical home constructed by one major Ohio builder. Some of the homes h natural gas furnaces plus electric air conditioning. Others we heated and cooled with heat pumps.

The study was based on actual owner usage of gas and electr The thermostat settings in the gas heated homes and electri heated homes were virtually identical throughout the year.

The results disclosed that the average annual energy costs f the heat pump homes were about the same or less than for t gas heated homes.

With the electric rates for heating now available through The Illuminating Company, you can buy heating energy at a very at tive price. And The Illuminating Company's Budget Billing Pro can help keep operating costs spread out to eliminate seaso peaks and valleys in monthly electric bills. Budget billing can spread your payments evenly over the course of a year.

THERE'S NO QUESTION ABOUT HEAT PUMP RELIABILITY.

y's modified and simplified heat pumps have been making a strong showing in various reliability tests. Attesting to their ıg reliability, in fact, are the extended service contracts offered ɜveral manufacturers after the usual one-year warranty 'es. These contracts are at the same cost (sometimes lower) as equivalent service contracts on gas or oil furnaces with ral air conditioning. It now is common to get a ten-year limited anty on selected brands of heat pumps.

ɜent study of about 600 actual heat pump installations in the ago and northern Illinois area, sponsored by the Electric Power ɜarch Institute, disclosed a service life of about 16 years. y of the heat pumps had been in service for over 26 years.

ɔntrast, the recently introduced gas furnaces which promise efficiencies still have a long way to go in achieving acceptable ɔility. Research conducted in the U.S. and Canada of ium and high efficiency gas furnace models has revealed ıus problems: corrosion, discomfort, component failures, maintenance costs and other problems.

THE HEAT PUMP NEEDS NO MORE MAINTENANCE THAN A CENTRAL AIR CONDITIONER.

ıny other piece of equipment with moving parts, a heat ɔ will require a little of your attention now and then. Filters ld be cleaned and changed and the outdoor coils should be 'ree of grass and debris.

And, like any other piece of equipment, it should be inspected by *a qualified service person once or twice a year in order to assure* peak efficiency and a long, trouble-free working life.

But, by and large, the heat pump is a very hardy piece of equipment and it requires relatively little maintenance to keep it in fine working order.

In fact, many maintenance programs now are available on heat pumps at the same cost as those offered by the contractor on regular air conditioners. And the air conditioners, remember, are used only during the summer.

ONLY THE BEST INSTALL THE BEST.

It's also good to know that, if you decide to have a heat pump installed in your home, you can rest assured that the work will be performed by a thoroughly trained, knowledgeable and competent contractor who is an expert on heat pumps. All you have to do is select a contractor who is participating in The Illuminating Company's CARE program, which means **C**omfort **A**nd **R**eliability in Electric heating and cooling installations.

Those CARE contractors have been trained to perform this work in a professional manner according to heating equipment manufacturers' specifications. More than 70 contractors have passed the special heat pump competency test of the Refrigeration Service Engineers Society. Their commitment to

quality heat pump installations and service assures you of a job well done. So, make sure that you deal with a CARE contractor.

We'll be happy to provide you with a list of CARE contractors.

YOU REALLY SHOULD GIVE THE HEAT PUMP SERIOUS THOUGHT.

If you are considering replacing a worn out air conditioner or a worn out forced air furnace, or if you are shopping for a new home, or if you just want to upgrade your heating system, we recommend that you consider the modern, efficient heat and cool pump.

For additional information, call The Illuminating Company at 1-800-589-2222 and ask for the heat and cool pump hotline. There is no cost or obligation for all the information you need to make a completely informed decision regarding electric heating.

The Illuminating Company
The Energy Makers.
A Centerior Energy Company

UESTION

"Since most folks already have a heating system, who need a heat pump?"