

# American Electric Power

## ANNUAL REPORT

1976

*people...  
providing energy  
...for people*

About our cover:

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**people...  
providing energy  
...for people**

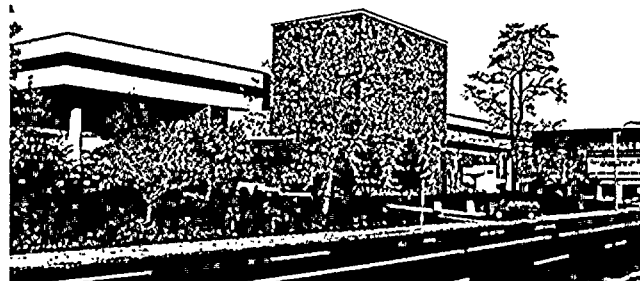
*An electric utility is many things.  
It is plants and poles, transformers  
and trucks, coal and computers,  
wires and watts, turbines and  
towboats.*

*But, more than that, it is people.  
People turning their energy to  
planning, producing and delivering  
energy for other people. Energy in its  
most usable and flexible form—  
electricity.*

*It is employees working together—  
and with their customers—to do an  
ever better job.*

\* \* \*

*One of the American Electric Power  
System's almost 19,000 employees  
is Teresa Nesbitt, a meter reader for  
Kentucky Power Company (and,  
incidentally, a sky diver in her spare  
time, with almost 300 dives to her  
credit). She is the young woman on  
our cover. She is there to represent  
all of our employees, in keeping  
with the theme of this annual report.*



The Annual Meeting of shareowners of American Electric Power Company, Inc. will be held at 9:30 a.m. Wednesday, April 27, 1977 in the Players Guild Theater, Cultural Center for the Arts, 1001 Market Avenue North, Canton, Ohio. (See photo above.)

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The Common Stock of American Electric Power Company, Inc. (ticker symbol "AEP") is traded on the New York Stock Exchange.

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The Transfer Agent for AEP common stock is Morgan Guaranty Trust Company of New York, 30 West Broadway, New York, N.Y. 10015.

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The Registrar of AEP common stock is Irving Trust Company, 1 Wall Street, New York, N.Y. 10015.

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Form U5-S, the annual report of the Company filed with the Securities and Exchange Commission, will be available on or about May 1. A shareowner may obtain a copy, at no cost, by writing to Mr. Philip H. Willemann, Assistant Treasurer, American Electric Power Service Corporation, 2 Broadway, New York, New York 10004.

# American Electric Power

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## ANNUAL REPORT 1976

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### Contents

Highlights of 1976 . . . . .	2	A REVIEW OF 1976:	
Chairman's Message . . . . .	3- 4	Earnings and Dividends . . . . .	6
Charts . . . . .	2, 30-31	Use of Energy . . . . .	6- 8
Directors . . . . .	33	System Expansion . . . . .	9-12
Officers . . . . .	34-35	Fuel Supply . . . . .	12-14
Financial Statements . . . . .	36-44	Rates . . . . .	15-16
Financial Statement Notes . . . . .	45-49	Financing . . . . .	17-18
Auditors' Opinion . . . . .	50	Environmental Protection . . . . .	18-21
Management's Comments . . . . .	50-51	"Women at Work" (Feature) . . . . .	22-24
Financial/Statistical Data . . . . .	52-59	Research and Development . . . . .	25-27
AEP System Description . . . . .	60	Other Major Matters . . . . .	28-29
AEP System Map . . . . .	Inside back cover	Directors and Management . . . . .	32

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### Tax Status of Dividends

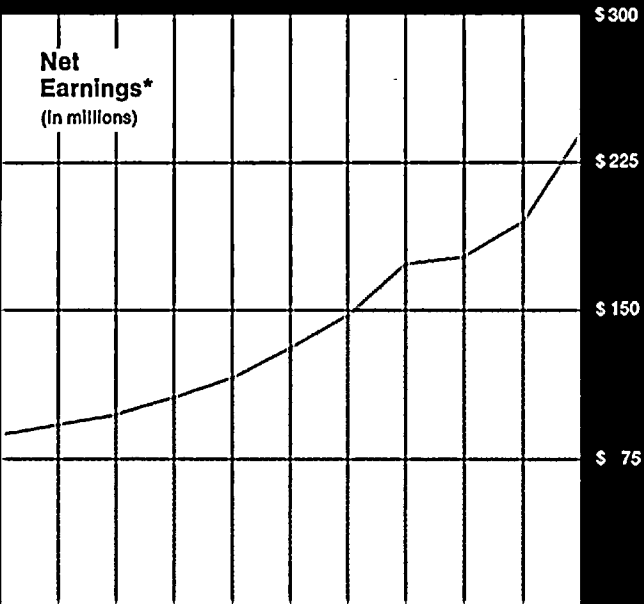
In January 1977 the Company informed its shareowners that it estimated that 54% of the \$2.01½ cash dividend paid per share of the common stock in 1976 was not taxable as dividend income for Federal income-tax purposes. This percentage estimate, while not yet confirmed by the Internal Revenue Service, may be used in preparing tax returns.

In January 1977 the Company also informed shareowners that the non-taxable portion of the 1975 cash dividend of \$2

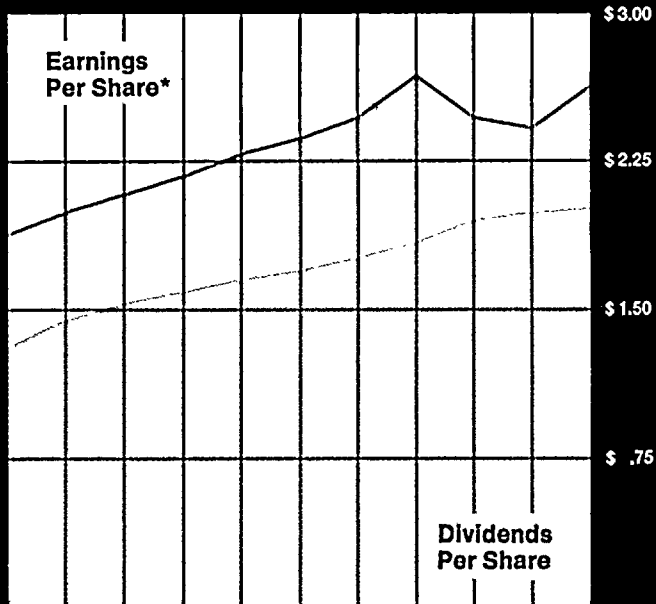
per share, previously estimated at 69% (as the shareowners were informed in early 1976), has now been determined to be 70.31%, and this has been confirmed by the IRS.

The shareowners are further advised that the percentages of dividends deemed not taxable for all years, 1971-76, remain subject to possible adjustment pending completion of IRS audits of AEP's consolidated tax returns for those years.

**Net  
Earnings\***  
(In millions)



**Earnings  
Per Share\***



## A Message from the Chairman

February 22, 1977

To My Fellow Shareowners:

This is my first annual report to the shareowners of American Electric Power Company. After completion of my first year of stewardship as the chief executive officer of your company, I am gratified to be able to report that, over all, 1976 was a good year for AEP.

While it was not a year of great expansion of the AEP System, it was a year of progress in dealing with some of the problems of the times that had not existed until recent years. In the Company's 1975 annual report, my predecessor, Donald C. Cook, described that year as one of continuing frustration in four areas of concern in particular: the effects of inflation, the need for rate relief, the problems of environmental requirements and the scope of our litigation. I can say to you that we were able to make some headway in all of these areas—and in others—in 1976.

AEP paid a cash dividend on its common stock for the 67th consecutive year and a higher dividend for the 24th consecutive year. We were able to do this because our total earnings and earnings per share improved somewhat, even in the face of the need to spread them over a larger number of shares of stock outstanding. And, at the same time, we improved the System's liquidity.

As you will read a little later, the AEP System made capital expenditures of \$687 million in 1976, and we have projected such expenditures at \$795 million this year. I would make special note of the fact that close to \$400 million will be spent in these two years alone for the improvement of environmental protection facilities at our *existing* power plants.

The year 1976 was the first in a decade in which we did not put a new power-generating unit in operation, although we were successful in increasing, from 835,000 to 1,050,000 kilowatts, the capacity level at which we are authorized to operate the System's first nuclear unit. Nor will we be adding new capacity this year. However, our second nuclear unit is scheduled for operation in 1978 and, as outlined on page 9, we have planned still other additions to our System capability, mostly coal-fired generation, each year through 1982.

All of this new capacity is going to be required if we are to avert an electric power shortage in the early 1980s—with all of its severe impact on the economy in general and people in particular that was so eloquently exemplified by the natural gas crisis of this winter, so fresh in all of our minds.

Nonetheless, as badly as added power supply is going to be needed, we will be undertaking these projects with caution, because at all times it will be necessary for us to discern the difference between what we would *like* to do and what we *can* do.

This is because uncertainties related to rate relief, interest costs and inflation—all impacting heavily on our ability to finance our construction program—dictate such caution as the only prudent course to follow.

Meanwhile, the use of electricity continues to rise, and all indicators suggest to us that it will continue to do so. I say this with full knowledge of the effort that we have put forth in recent years, in working together with our customers, to encourage them to conserve electric energy...and of the effort with which they have responded in doing so.


For example, with the modest upturn in the economy last year, there was growth at near historic rates in all three principal categories of retail customers' usage of electricity: residential, commercial and industrial. There was also a sizable gain in wholesale sales to neighboring utilities which, for one reason or another, at times found either that they were short of capacity or that they could purchase energy from us at less cost than they could produce it themselves. I believe this says something very positive about the System's management: its planning in the past, its operation in the present and perhaps its objectives in the future.

This increased use of electricity, coupled with rate relief in some of the seven states we serve, meant an increase of 14% in our revenues last year. In turn, the added revenues helped the earnings picture, which eased our financial pinch. But—and I regret having to say this—still more rate relief is going to be required in the near term, particularly in two of our three largest operating companies, Appalachian Power Company and Indiana & Michigan Electric Company, if we are to proceed in those areas to build the facilities that we shall need to meet, much less stay ahead of, our customers' growing requirements for electricity.

My feeling is that 1976, on balance, was a year with more ups than downs. While the times have not been particularly kind to the electric utility industry, nor public opinion particularly favorable, we are working hard to produce the solutions to the problems. And, as I said before, we are making headway.

The performance of the AEP System in 1976, which is chronicled in the pages that follow, was made possible because the System had the benefit of the support of so many people in our organization: our directors, our officers, our managers and our employees generally. The balance sheet in this annual report reflects some of our assets—the steel and brick and mortar part of our business—in dollars-and-cents fashion. But it does not show, it cannot show, the rest of our assets: the dedicated, resilient, capable men and women who have built and are operating one of the nation's premier utility organizations.

On behalf of the Board of Directors,



W. S. WHITE, JR.



## Earnings and Dividends

### Earnings reach \$241.7 million, \$2.66 per share

American Electric Power Company achieved net earnings of \$241.7 million in 1976, highest in its 70-year history and 23.2% better than in 1975.

Earnings per share were \$2.66, an improvement of 22¢ or 9% over 1975, even though there was an increase of 13.2% in the average number of shares of common stock outstanding, from 80,417,000 to 91,005,000.

Two important factors must be noted, however:

■ The 1975 earnings and earnings-per-share figures, against which the above 1976 amounts are compared, have been restated due to the required refund to customers of certain revenues that had been collected subject to such refund pending the final resolution of the rate proceedings of which they were a part. As restated, the 1975 earnings were \$196.3 million; earnings per share, \$2.44.

■ Also, the 1976 earnings and earnings-per-share figures themselves are subject to restatement, and the 1975 amounts to further restatement, because of the possibility of further refunds of revenues collected subject to such refund. While it is not possible to estimate the amount of any potential refunds, the total amount collected subject to refund represents the equivalent (based on the AEP System's 1976 tax status) of \$51.2 million in earnings and 56¢ in earnings per share for 1976, and \$13 million and 16¢ in 1975, as of the date of this report.

As the shareowners know, the cash dividend was increased in 1976. The new annual rate is \$2.06, compared with the previous \$2.

By raising the quarterly dividend from 50¢ to 51½¢ per share, effective with the payment of December 10, AEP maintained its record of having paid a greater dividend each year for 24 consecutive years. The 1976 payout was \$2.01½ against \$2 in 1975.

AEP has paid a cash dividend for 67 consecutive years.

◀ **RICHARD S. (Tiny) LEASE**, production supervisor at the Donald C. Cook Nuclear Plant in Michigan: "The 1,050,000-kilowatt Unit 1 has been running very well. Construction of Unit 2 is nearing completion, and we are looking forward to its operation next year."

## The Use of Energy

### Kwh consumption up 11.8%

In 1976 AEP System customers used more electric energy, providing greater revenues, than in any other year in our history.

Kilowatthour use by our *retail* customers was up 6.6% over 1975. On the other hand, *wholesale* sales for resale—over 32% of all energy sales last year—increased by a record 24.7%. *Combined*, they totaled 84.9-billion kwh, a gain of 11.8% over 1975, and resulted in \$1.869 billion of revenues, up 14.1% over 1975 revenues of \$1.638 billion. (The revenue gain, readers are reminded, is registered against 1975 revenues restated to account for customer refunds.)

	1976 KWH USE (MILLIONS)	% CHANGE FROM 1975
<b>RETAIL:</b>		
Residential . . . . .	16,639	7.3
Commercial . . . . .	9,090	5.6
Industrial . . . . .	30,936	6.5
All other . . . . .	789	8.8
Total retail . . . . .	57,454	6.6
WHOLESALE (sales for resale) . . . . .	27,459	24.7
Total kwh use . . . . .	84,913	11.8

	1976 REVENUE (MILLIONS)	% CHANGE FROM 1975
<b>RETAIL:</b>		
Residential . . . . .	\$ 490.5	9.0
Commercial . . . . .	276.2	7.8
Industrial . . . . .	570.9	6.8
All other . . . . .	23.2	11.2
Total retail . . . . .	\$1,360.8	7.9
WHOLESALE (sales for resale) . . . . .	457.9	33.3
Unallocated . . . . .	(8.6)	NA
Revenues from kwh . . . . .	\$1,810.1	13.8
Other operating revenues . . . . .	58.5	24.0
Total revenues . . . . .	\$1,868.6	14.1

In 1976 new peaks were established in both the one-hour total System load and the one-hour internal load (the former is larger because it includes certain deliveries of bulk power to non-affiliated wholesale customers excluded from the latter). However, the internal load record has already been shattered in the new year to date, due to bitterly cold weather throughout our entire service area.

The 1976 total System peak of 15,324,000 kilowatts, set January 9, was almost 10% higher than the 1975 high, which occurred in the summer. The 1976



## Industrial Progress

*The AEP System's 7-state service area is one of the nation's most heavily industrialized. With industry constantly expanding in this area, we foresee continued growth in its use of electric energy. Here are three examples:*

**HERBERT T. FESSLER**, Ohio Power Company power engineer, Canton: "This is the new manufacturing plant of The Hoover Company in the North Canton Industrial Park. At the left is the Timken Research Center."



**JAMES B. BEAVERS**, Ashland Division customer services manager, Kentucky Power Company: "Ashland Oil Company, already one of our largest industrial customers, is in the midst of a major expansion of its refinery here."

**STEVE EARLY**, Kentucky Power Company power engineer (right): "This new and expanding National Mine Service plant at Wurtland, Kentucky, which produces mining equipment, symbolizes the good health of the coal-mining industry."



## CONSERVATION IS A NECESSITY

*Conservation is an essential step toward meeting the nation's energy problems, both today and tomorrow. While the American Electric Power System has long advocated the prudent use of electric energy as well as improvements in the efficiency of its use, we are placing renewed emphasis on both.*

*As for our customers, in our communications with them we are constantly stressing the importance of energy thrift and offering specific suggestions and programs toward achieving this end.*

*And as for ourselves, in our own operations we are trying to squeeze every kilowatthour we possibly can from every ton of coal and every pound of nuclear fuel we use, and to deliver every kwh ever more efficiently.*

internal peak, 11,432,000 kw, came on December 21 and was about 5.5% above the previous year's figure. In the new year to date, an all-time internal load of 11,981,000 kw was set January 17.

One of the highlights of 1976 came when we passed the 300,000 milestone in the number of electrically heated homes on our lines. At year's end, we were serving 311,100 such customers, an increase of 10% in one year. This contributed to a new high of 9,886 kwh in the average annual energy use by our residential customers, an increase of 5.1% from the figure of 9,406 kwh in 1975. Further, we anticipate that, because of the growing uneasiness over future supplies of natural gas, we will see many of our customers converting their homes to electric heating.

Although the use of electric energy by our industrial customers increased 6.5% last year—a good indication that the worst of the economic recession is now over—it did not come close to offsetting the 15.6% decline experienced in such sales in 1975. As a consequence, 1976 industrial use of electricity was about on a par with the level of 1969-71.

Nonetheless, the expansion of industry continued across the AEP System service area, which will mean added kwh sales and revenues in the future when these new facilities go into operation. A total of 112 new industrial plants and 129 expansions of existing plants were announced in 1976. In sum, these projects represent \$512 million in capital investment, an estimated 14,000 new jobs and added annual payroll of \$120 million, and, for AEP, \$12 million in added annual revenue.

\* \* \*

In 1975, because of the possibility of a power shortage in the years ahead, we had suggested to a number of our wholesale customers that it would be

prudent for them to seek other sources of power supply upon expiration of their contracts with us. We felt that our retail customers, by comparison, did not have any alternate means of meeting their electricity needs.

During 1976 that situation eased somewhat, and, given sufficient rate relief to ease our financing pinch, we hope to be able to build enough generating capacity by the early 1980s to avoid limiting our service to any customers, save as a last resort. Consequently, as wholesale contracts neared expiration during the year, we were able to negotiate extensions of medium-term duration. We hope to be able to continue to do so as such contracts come up this year and beyond.

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JOSEPH D. HIGGINS, Beckley Division customer services manager, Appalachian Power Company: "It was appropriate that Beckley, always a coal-mining center, was chosen as the site of the nation's newest federal academy — The National Mine Health and Safety Academy. This 40-acre campus complex, opened in 1976, will serve 600 students."



## System Expansion

1977 capital budget is \$795 million

As 1976 ended, the AEP System had a total power capability of about 17.5-million kilowatts. Our planning studies indicate that our customers' electric energy needs will require us to increase this power supply to about 22.5-million kw by 1982. We are going to do our best to provide it.

In this regard, we are projecting the addition of the following 5.1-million kw of new generating capacity over the next six years, subject to our capability to finance it:

	KILOWATTS
1977—Coal-fired unit . . . . .	(600,000)*
1978—Nuclear unit . . . . .	1,100,000
1979—Hydroelectric units . . . . .	149,000
1980—Coal-fired unit . . . . .	1,300,000
1981—Coal-fired unit . . . . .	1,300,000
1982—Coal-fired unit . . . . .	1,300,000
Total . . . . .	<u>5,149,000</u>

\*This unit is owned by Buckeye Power, Inc. While it will be operated in conjunction with the AEP System and while AEP will purchase a portion of its production, this capacity is not included in the total.

There is the possibility, however, of one or more roadblocks in our path. One potential hurdle could be the inability of one or two of the System's operating companies to finance all of their planned construction. Another hurdle might be delays caused by governmental or environmental requirements.

In any event, we have taken a position of conservative optimism and are proceeding with our plans. At the same time we are refraining from making any substantial commitments until the financing of them is assured. Realistically, we can take no other stance, for electric energy is essential to the more than 6-million people we serve, and we have an obligation to do all we can to provide their requirements. But we can build only what our revenues and earnings will support.

In 1976 the AEP System invested \$687 million in new facilities and expects to invest up to \$795 million for such purposes this year. It is significant that \$155 million, or 23%, of our construction costs last year were for new environmental quality facilities on existing plants alone. For this year, such expenditures are expected to reach \$220 million, almost 28% of the total. (For further discussion of our environmental program, see page 18.)



**DANIEL C. TURNER**, Ohio Power Company, shift operating engineer at the Cardinal Plant: "We are only a few months away from commercial operation of the new 600,000-kilowatt Unit 3 here. It will provide more electric energy not only for the rural electric cooperatives of Ohio but for the AEP System as well."

### New plant planned in Indiana

The AEP System is now building a 1.3-million-kw, coal-fired generating unit in West Virginia and planning to build two such units in Indiana, all on the Ohio River.

Construction of the West Virginia plant, at New Haven, is still in its early stages. When it was announced three years ago, its cost was estimated at \$420 million or about \$323 per kw. Subsequently, when it was necessary for the AEP System companies to impose across-the-board curtailments on both their capital programs and operations, as discussed in earlier annual reports, the construction period for this new station was thus stretched out—as inflation continued. As a consequence the plant is now scheduled for operation in 1980 at the earliest, assuming that we will be able to make the necessary financing arrangements. Its revised cost is now about \$600 million or \$462 per kw.

In November, we announced plans to build a 2.6-million-kw plant in Spencer County in southern Indiana. We are now in the early stages of seeking the required 52 permits and approvals from 17 federal, state, regional and county agencies, and we hope to be able to firm up the financing and to break ground later this year. If this can be done, first of the plant's two 1.3-million-kw generating units would be in service by 1981, the second by 1982.

Cost of the Indiana plant is estimated at \$1.3 billion or \$500 per kw. This price tag, as well as that for the West Virginia plant, is a far cry from the \$230-per-

kw cost associated with the General James M. Gavin Plant in Ohio, completed less than two years ago. Inflation is the major reason for the differential, but the cost of meeting rigid environmental regulations is also a significant factor.

Meanwhile, construction has been completed on a third 600,000-kw unit at the Cardinal Plant. This unit, like the second one, is owned by Buckeye Power, Inc., power-supply organization of Ohio's rural electric cooperatives. (AEP's Ohio Power Company owns the first unit.) Commercial operation of the new unit is expected this summer. Under the agreement between Buckeye Power and Ohio Power, that portion of the unit's generation not needed by the rural co-ops will be purchased by Ohio Power.

All four of the above units—two in Indiana and one each in West Virginia and Ohio—will be capable of burning low-sulfur coal to comply with environmental requirements. In addition, their other environmental protection features will include tall stacks, highly efficient electrostatic precipitators and giant cooling towers—all designed to meet the stringent air- and water-quality regulations applicable in these states.

#### **First nuclear unit performs well**

On December 23 the AEP System's first nuclear generating unit—Unit 1 at the Donald C. Cook Nuclear Plant in Michigan—was taken out of service for its initial fuel re-loading. It is now back in service.

It had been in commercial operation for 16 months and during that time performed to our highest expectations. In fact, during 1976 the unit generated 6.8-billion kwh, more than any other nuclear unit in the world.

When placed in commercial service in August 1975, the unit was initially limited to a capacity of 835,000 kw. Last June we began operating it at its full capacity of 1,050,000 kw following such authorization by the U. S. Nuclear Regulatory Commission.

Meanwhile, construction of Unit 2, which we expect will be rated at 1.1-million kw, is going forward, and we anticipate its commercial operation by early 1978. Its construction had been substantially curtailed in late 1974, during the cutbacks mentioned earlier, but was resumed in mid-1975 and then gradually built up to its present high level of activity.

#### **Blue Ridge project is blocked**

The past 14 annual reports discussed our plans for a major pumped-storage and hydroelectric power development on the New River. While its proposed

two dams would have been in Virginia, portions of their reservoirs would have extended into North Carolina. This development, the Blue Ridge Project, was nullified by an act of Congress in August.

Appalachian Power had applied to the Federal Power Commission in 1962 for a preliminary permit to study the project's feasibility and in 1965 for a construction license. After almost a decade of hearings on the proposed 1.8-million-kw development, the FPC in 1974 unanimously granted the license, effective January 2, 1975. The FPC order was subsequently affirmed by the U. S. Court of Appeals for the District of Columbia.

However, in August the Congress designated a 25-mile segment of the New River—the very stretch where the project's lakes would have been located—as part of the National Wild and Scenic Rivers System. This action was taken despite the fact that:

- The nation is facing the possibility of an energy shortage, and Blue Ridge, over the 50-year term of its license, would have generated an estimated 85-billion kwh of needed electric energy—without consuming oil or natural gas, our nation's scarcest fuels;

- The FPC had found, on the basis of the comprehensive record, that any adverse environmental effects from the project would be "more than balanced by the environmental benefits that would be created" and by the electric power that would be produced; that "a recreation area of sizable proportions and great attractiveness would be created," and that Blue Ridge "would contribute much more than it would take away"; and

- The action, in which Congress overrode the very agency it had established as the expert federal body in such matters, was unprecedented.

Thus, the Blue Ridge matter is ended—with one important exception. We believe that the scenic rivers legislation, by nullifying the benefits of Appalachian Power's FPC license, has deprived the company of a valuable property right, for which it intends to seek just compensation in the U. S. Court of Claims. And, in the process, the action has also deprived our customers of the substantial benefits of the energy that would have been provided.

Meanwhile, we are proceeding with three other projects to increase the AEP System's hydropower capacity by 189,000 kw.

We began last year the installation of a 105,000-kw reversible pump-turbine in the upper of the two dams in our Smith Mountain combination pumped-storage and hydroelectric development on the Roanoke River in Virginia. We expect the new unit to be in operation

## Welcome to the...

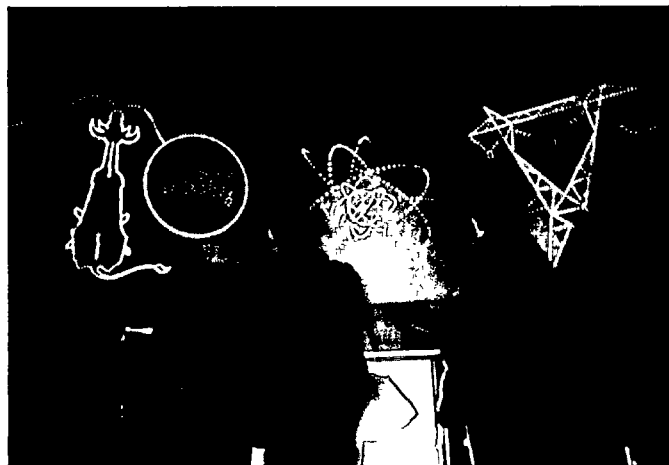
*I'm Candice Gifford, and my job is to encourage people to visit the exciting and colorful Cook Nuclear Center, on the shore of Lake Michigan next to the AEP System's only nuclear power plant. To date over 800,000 people have toured this nuclear energy information-education center, and we extend a special welcome to AEP shareowners.*



Theater 1



Theater 2



Theater 3



by early 1979. This addition, a fifth generating unit at the dam, will increase the project's total capacity to 605,000 kw.

We are also planning to install two small turbine-generators in each of two U.S. Government dams on the Ohio River. Design work is under way on two 22,000-kw units to be installed at the Racine Dam near Racine, Ohio, for which we hold an FPC license, and we anticipate that construction will begin about September. Also, we have a preliminary permit to study, and will probably seek an FPC license to install, two similar units at the Gallipolis Dam near Gallipolis, Ohio. These two projects will feature a turbine-generator mounted within a bulb-shaped housing under water, providing an economical plant design and minimum environmental effect.

#### ERDA seeks AEP power supply

Since 1952 the Ohio Valley Electric Corporation has been supplying the very large electric power needs (now at 1.9-million kw) of the giant gaseous-diffusion uranium-enrichment plant operated by the Energy Research and Development Administration (formerly the Atomic Energy Commission) near Portsmouth, Ohio. Three AEP operating companies—Appalachian Power, I&M and Ohio Power—are among the 15 utilities which formed OVEC for this purpose. The 25-year ERDA-OVEC power agreement is scheduled to expire later this year, and the two parties are now negotiating a 15-year extension.

Meanwhile, ERDA last year announced plans for a multi-billion-dollar expansion of its Portsmouth operation to double its capacity to produce nuclear fuel for the nation's nuclear generating plants. Construction is expected to begin later this year and to be completed by 1985.

The additional power supply required for the addition is estimated at 2.5-million kw. ERDA solicited proposals from a number of electric utilities serving the Ohio Valley region for supplying such energy requirements. The AEP System was the only one which submitted a proposal. Preliminary discussions between AEP and ERDA are now in progress. Should a commitment to supply the power materialize, we believe that such a major project will require some type of government guarantee of the financing.

## Fuel Supply

### We depend upon coal

Coal has been the lifeblood of the AEP System's power production since its founding 70 years ago. This is only natural, since six of the seven states in which we provide electric service are major coal-producing states. Therefore, it is our general policy to use coal from this area to the greatest extent possible and to use western low-sulfur coal only in those locations where it is necessary to meet environmental requirements that cannot be met with eastern coal.

At this time 88.5% of our total generating capacity is in coal-fired power plants, 6.1% in nuclear, 4% in hydropower, and 1.4% in oil-fired units. Further, coal will certainly remain the dominant factor in our operation for many years to come.

Last year the cost of fuel in our fossil-fueled power plants was 8.88 mills per kwh generated, compared with only 1.77 mills in 1966. While this represents a five-fold increase in the past 10 years, the cost last year was well below the historic peak of 10.55 mills per kwh in late 1974 and somewhat below the 9.31-mill average for 1975. Included in these figures are both purchased coal and coal we mined ourselves.

While the cost of fuel was increasing five-fold in the 1966-76 period, the use of coal in our plant boilers almost doubled. At the same time, the proportion of coal from our own mines went up, as follows:

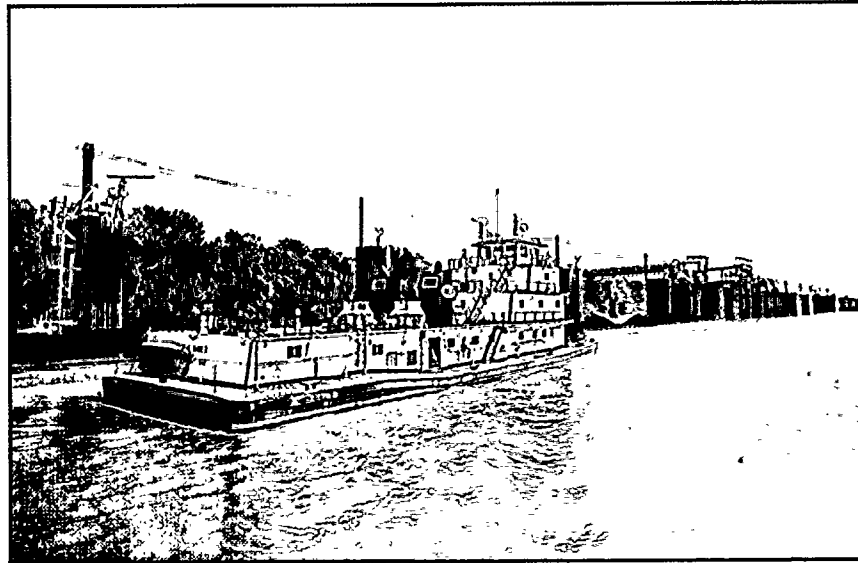
	TONS BURNED (MILLIONS)	% FROM AEP MINES
1966 . . . . .	18.3	24.6
1976 . . . . .	35.8	29.8

With respect to our mining operations, the proportion of low-sulfur (1% or less) to higher-sulfur coal that we have mined has risen dramatically over the same 10-year span. So has the proportion of underground to surface-mined coal:

	TONS FROM AEP MINES (MILLIONS)	% LOW SULFUR	% DEEP MINED
1966 . . . . .	4.5	13.3	26.0
1976 . . . . .	10.7	39.1	57.3

We expect these proportions to increase in the future.

It is vital to our ability to provide service—and therefore vital to our customers—that we be assured of an adequate supply of coal in the years ahead and that its cost be kept to the lowest level consistent with both reliability and environmental requirements. These are the reasons behind our present program of



**EMMETT ROSSITER**, pilot of the towboat "F. M. Baker": "1976 was a busy year for the AEP System's expanding river fleet. We hauled almost 9.3-million tons of coal to power plants on the Ohio and Kanawha Rivers." (At right a new AEP barge is launched at a Dravo shipyard.)

expanding our coal production on a sound, systematic basis and continuing to seek additional coal supplies on the commercial market, a dual effort that places emphasis on the quality of the fuel and the reliability of its sources of supply.

Toward these ends, we took the following steps in 1976:

**COAL MINING & PURCHASING**—We began operating three new underground mines, one new surface mine and a large, new coal-preparation plant, all in West Virginia. Construction of similar cleaning plants is under way in West Virginia and Ohio, and soon will be in Utah.

About two-thirds of our coal requirements are purchased on the commercial market, mostly under long-term contracts. In negotiations with suppliers, we continued to seek to upgrade the quality and reliability of our coal supply, and we also sought to locate future sources.

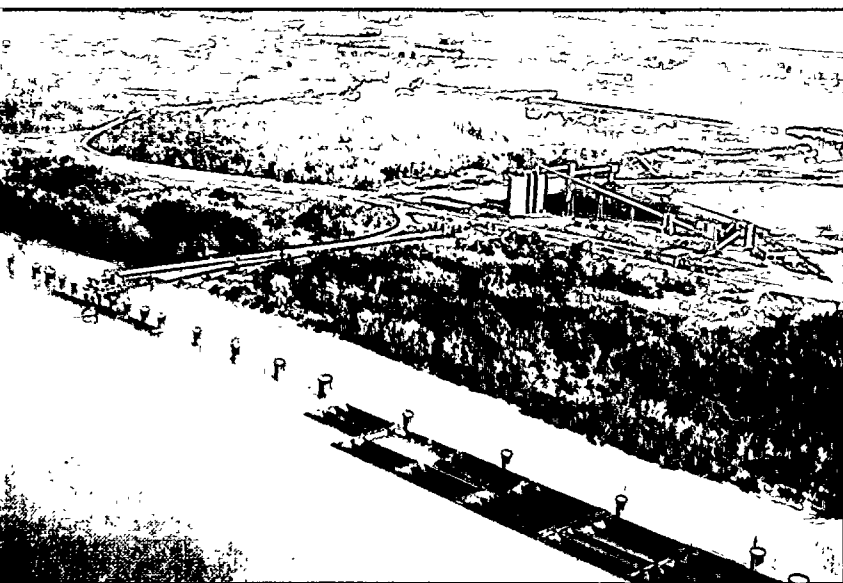
**COAL TRANSPORTATION**—Faced in 1973 with a very tight capacity situation with respect to coal-transportation facilities on both land and water, and to provide assurance that we would be able to continue to make coal deliveries to our power plants, the AEP System took major steps to deal with this problem. In 1976 and early this year we received delivery of eight of the 16 towboats and 160 of the 260 coal



barges we had ordered for transporting coal on the Ohio and Kanawha Rivers; the balance will arrive later this year. Also, all 3,200 rail cars ordered for unit-train service have now been delivered.

The Cook Coal Terminal on the Ohio River at Metropolis, Illinois, was placed in commercial operation July 1. This new transfer station receives low-sulfur coal in 110-car unit trains from Utah and Wyoming and loads it onto our barges for delivery to our power stations on the Ohio River in Ohio and Indiana.

Also, a new headquarters for our River Transportation Division is being built on the Ohio River near



**DOROTHY MOHR**, coal equipment operator, Cook Coal Terminal, Metropolis, Illinois: "My job is operating heavy equipment used here in the transfer of coal from railroad cars to river barges — including yard locomotives, car dumpers and bulldozers. It's tough work but I like it."

Point Pleasant, West Virginia, a more central location with respect to our plants and coal-loading points than that of the present inadequate facility on the Kanawha River at Cedar Grove in the same state. The new complex will include barge-repair, dockyard, storeroom and operations facilities.

**FUEL MANAGEMENT**—Headquarters of the AEP Service Corporation's Fuel Supply Department was transferred from New York to Lancaster, Ohio, where we are consolidating all of our coal-mining management, purchasing, transportation, mine engineering and other related functions. The move, to be completed by early 1978, involves personnel previously

located in New York; Charleston, West Virginia, and Albany and Canton, Ohio. The relocation to a community that is in close proximity to our mines and to transportation was carried out to maximize the efficiency of our widespread fuel-supply operations.

### Supreme Court unblocks western mining

In one of the more significant judicial decisions involving coal handed down in 1976, the U.S. Supreme Court removed a major hurdle to the surface mining of low-sulfur coal in the West.

Reversing a decision by the U.S. Court of Appeals for the District of Columbia, the highest court ruled that the U.S. Department of the Interior did not have to prepare an over-all environmental impact statement covering the entire Northern Great Plains Region in connection with the proposed surface mining of federally owned low-sulfur coal there. Such a task would have taken several years and further delayed mine developments. The suit had originated with environmentalists; the AEP System, because of our need for low-sulfur coal, had joined other parties in supporting Interior before the Supreme Court.

The 1975 annual report discussed a case in the Wyoming courts in which AEP, as owner of the land, was seeking adequate protection or compensation from Kerr-McGee Coal Corporation, holder of the mining lease on the coal beneath the land. We expect to settle the case shortly by an exchange of land between the two parties.

Two cases of litigation over Appalachian Power coal-supply contracts were mentioned in the last two annual reports. One, in which the company was sued by a supplier because we refused to accept delivery of what we believed to be inferior coal, was settled. In the other, in which the company sued a supplier for non-delivery, the company has moved for summary judgment on the issue of liability for breach of contract. Also, a case in which our Cedar Coal Company was sued for mining coal beneath the plaintiff's land remains pending; we continue to believe it has no merit because Cedar has a superior right to the coal involved.

The Twin Branch Plant in Indiana is our only oil-fired generating station. Its fuel supply was the subject of a suit in which we sought to hold the supplier, Amoco Oil Company, to its contract price, which it claimed had become inoperative because of the federal petroleum-allocation program. An out-of-court settlement resulted in our paying about \$5.4 million less for the fuel oil than the \$11 million invoiced. The saving was passed along to our customers.



## Rates

### Rate relief, a continuing problem

An electric utility provides a service basic to the needs of our modern society. It is vital to the home, farm, school, hospital, store and factory—and indeed to the health, welfare and economic well-being of the individual and the nation as a whole.

Because electricity is so essential and because, in general, it is provided by a single supplier in a given service area, the price that may be charged for it is subject to review and regulation by a state or federal agency. In authorizing the rates that a utility may charge, the regulator's obligation is to keep rates at a reasonable level consistent with good service, a level that (a) covers the costs of providing the service, including fair compensation to those who furnish the required capital, and (b) preserves the financial integrity of the utility so that it may continue to attract the capital needed to expand its facilities to meet the future needs of its customers.

Unfortunately, zooming inflation in recent years—not to mention environmental requirements—has given rise to unprecedented increases in the cost of providing electricity, while there are continuing pressures against compensatory increases in the *price* we may charge for this service. Thus, achieving fair and timely rate increases is a continuing problem.

The following were the principal developments in *retail* rate-making in 1976 and in 1977 to date:

**INDIANA**—On January 31, 1977, the Indiana Public Service Commission authorized Indiana & Michigan Electric to raise its rates by \$41.8 million per year. This was 55.6% of the amount I&M had requested. An initial request for \$67.5 million had been filed in late 1975, followed by a supplemental filing last year which raised the total request to \$75.1 million.

**KENTUCKY**—Kentucky Power filed for a rate increase of \$17.2 million per year, the first in its history, then reduced the amount to \$16.5 million. The request received prompt action from the Kentucky Public Service Commission, which authorized \$10 million.

The company also sought and was authorized by the PSC a one-time recovery from its customers of \$1.8 million in deferred fuel expense, which it could not recover through its fuel-adjustment clause because of changes in the clause. The amount is being collected during 1977.

**MICHIGAN**—I&M provides electric service and Michigan Power Company furnishes both electric and gas service in Michigan.

I&M last year filed a request with the Michigan Public Service Commission for an additional \$12.8 million in revenues. Six months later it received approval for \$8.9 million.

The 1975 annual report mentioned Michigan Power's appeal to the courts of a PSC decision which had allowed only \$728,000 (or 18%) of a requested increase of over \$4 million in gas and electric rates. That appeal is still pending.

Meanwhile, Michigan Power last year filed new requests with the PSC totaling \$8.3 million: \$2.1 million from gas customers and \$6.2 million from electric customers, the latter the result of an I&M wholesale rate increase to Michigan Power. On February 7, 1977 the PSC approved a gas rate increase of \$1.3 million, 64% of the requested amount. Meanwhile, the electric rate increase is being collected under a court order and subject to refund. The order was issued by a county court at the company's request, after the PSC had authorized only \$2.5 million of the \$6.2 million required by Michigan Power to offset the hike in its wholesale rate.

**OHIO**—In early 1975 the Public Utilities Commission of Ohio authorized an interim increase of \$49.4 million in Ohio Power's annual revenues, subject to refund, in connection with the company's request for a total permanent increase of \$85 million. In 1976 the PUCO (a) denied that portion of the request related to two major industrial customers receiving service under special contracts, but (b) made permanent the \$49.4 million interim rate hike and authorized an additional \$4.7 million, a total of \$54.1 million.

**TENNESSEE**—Kingsport Power Company requested and received approval from the Tennessee Public Service Commission to put into effect a \$4.8 million rate increase, equal to an increase in its wholesale rate requested of the FPC by Appalachian Power, its sole supplier. Because the wholesale increase is subject to refund pending the FPC's decision, so is the retail increase with respect to the PSC.

**VIRGINIA**—Appalachian Power filed a request with the State Corporation Commission of Virginia, under the Commission's annual review procedure, for a \$14.3 million increase in rates. An increase of \$13 million was allowed to become effective; however, it remains subject to review and possible refund, with a final decision expected later this year.

The SCC also approved Appalachian's request to recover \$7.9 million in deferred fuel expense, which it was no longer able to recover through its fuel-adjustment clause. This is being spread over a two-year period ending early next year.

WEST VIRGINIA—Appalachian Power is currently collecting \$41.1 million in rate increases in this state that are subject to refund pending final decision by the West Virginia Public Service Commission. This amount represents a consolidation of two separate rate applications before the PSC, including a \$30.6 million request discussed in the 1975 annual report. We anticipate a decision soon.

The 1975 report also discussed PSC consideration of the appropriateness of Appalachian Power's revenues for the 20-month period that commenced in January 1974, reflecting an annual rate increase of \$9.5 million being collected, also subject to refund, under a rate case dating back to early 1971. During 1976 the PSC directed that 86% of the amount in question be refunded, with interest. The company appealed the decision, lost and refunded an amount which by then aggregated \$18.5 million.

#### **Six new wholesale rate requests filed**

In recent years the AEP System operating companies have filed 18 applications with the FPC for wholesale rate increases aggregating \$73.2 million. Twelve totaling \$20.2 million were filed before 1976 and six totaling \$53 million during 1976. Wholesale customers include other investor-owned utilities, rural electric cooperatives and municipal electric systems.

With respect to the dozen applications filed before 1976, the FPC last year rendered final decisions on six of them, authorizing \$3.6 million of the \$5.2 million of annual rate relief requested. The other six, aggregating \$15 million, remain pending.

The six applications filed in 1976 were: three by I&M totaling \$44.4 million; two by Appalachian Power, \$7.8 million, and one by Michigan Power for \$800,000. No decisions have yet been reached. However, a total of \$39.7 million is being collected subject to refund, representing the full amount in five of the six cases and a partial amount in the sixth.

#### **Rates are subject of proceedings**

In 1974 ten municipalities in Indiana and Michigan, served at wholesale by I&M, filed suit against that company in U.S. District Court in South Bend, Indiana. They charged that I&M had violated antitrust laws by virtue of the alleged "price squeeze" they claimed resulted from the difference between the company's wholesale rates to them and its retail rates to industrial customers. In 1975 I&M's request for dismissal was denied; in 1976, following the company's appeal, the court in effect reaffirmed its earlier decision. I&M then appealed to the U.S. Court of Appeals for the Seventh Circuit, where the matter now stands.

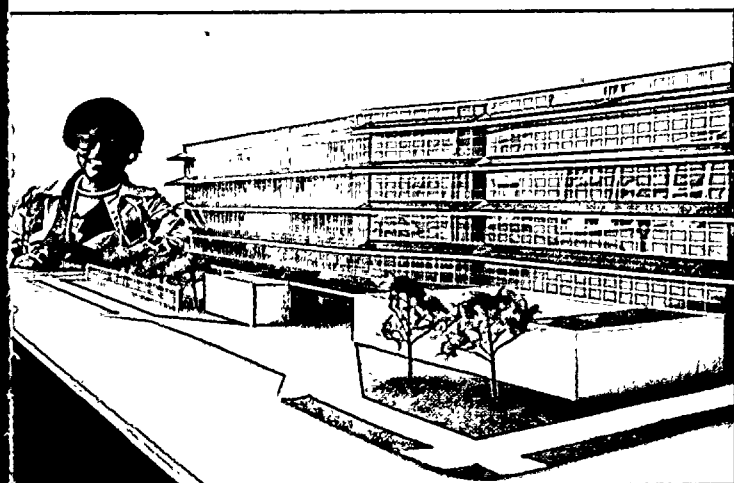
*CAROLYN MILLER, public affairs secretary, Kentucky Power Company: "This is a model of the new company headquarters we hope to occupy late this year in downtown Ashland. It features efficient insulation and heat-reflecting windows and glass 'eyebrows' to provide solar shading."*

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The 1975 annual report also noted two actions taken by the same ten municipalities with respect to wholesale service by I&M: (a) an antitrust action filed by them in late 1975, in which they alleged that I&M had threatened to refuse to deal with them after their contracts expired, and (b) a complaint filed early in 1976 with the FPC, in which the municipalities urged the Commission to investigate whether a shortage of generating capacity existed or was developing in I&M or on the AEP System. In the antitrust matter, filed in the U.S. District Court in South Bend, I&M moved for a dismissal, alleging that jurisdiction was held by the FPC and not the courts; that motion is pending. In the complaint to the FPC, that agency has undertaken an investigation directed at questions involving a potential energy shortage.

Finally, the 1975 annual report discussed two class action suits involving fuel-adjustment clauses in our rates. One, brought by three customers of I&M, challenged the validity of Indiana's fuel clause and sought recovery of \$75 million which the plaintiffs claimed had been collected illegally via the fuel clause. A county court dismissed the action on the ground that the matter was within the primary jurisdiction of the Public Service Commission, not the courts. The plaintiffs' appeal of the dismissal is now pending before the Indiana Court of Appeals. The other suit, brought by a West Virginia couple in U.S. District Court in Charleston, charged that Appalachian Power's former fuel clause had been illegal and sought \$150 million in compensatory damages and \$250 million in punitive damages. The company's motion for dismissal was granted, on stipulation by both parties. However, a possibility exists that plaintiffs may reinstate the action in a state court.

In 1976 the Ohio PUC began a hearing on Ohio Power's fuel-adjustment clauses. In early 1977 representatives of the Ohio attorney general's office filed briefs with the PUCO alleging that certain company practices in 1975-76 would warrant ordering refunds to customers or reconciliation adjustments, which might aggregate up to \$45 million. Although Ohio Power believes this possibility remote, no prediction can be made as to the proceeding's outcome.



## Financing

### 1976 financings total \$780 million

The AEP System's financing activity continued at a high level in 1976 and resulted in a total of about \$780 million in new capital.

The Company and its subsidiaries sold approximately \$510 million of securities. The subsidiaries also were involved in a number of sale-and-leaseback transactions and pollution-control revenue-bond financings which resulted in proceeds of about \$270 million.

Largest part of the new capital was used to finance our construction program; the remainder, to reduce short-term debt, improve liquidity and refund maturing bonds. As a result, the System as a whole faces its financing requirements in 1977 on a basis somewhat improved over recent years, even though, as previously mentioned, two major subsidiaries continue to be subject to financing limitations which can be met only through increased revenues and earnings via rate relief.

Securities were sold on nine occasions during 1976. Five of the issues were first-mortgage bonds, the sales of which differed from those of the previous year in two important respects: interest costs were somewhat lower, although still high by historic standards, and all of the bonds were long-term (in 1975 they had ranged from seven to 10 years).

The Company sold 10-million shares of common stock in February-March in a rights offering to existing holders, on a 1-for-9 basis, at \$19.60 per share. The offering was well over-subscribed and netted over \$190 million, which was used to repay short-term debt and to make additional investments in the oper-

ating subsidiaries. It was the eighth sale of common stock in 10 years and increased the number of shares outstanding to 93-million (125-million are currently authorized).

Three subsidiaries sold five issues of 30-year, first-mortgage bonds aggregating \$320 million, as follows:

	AMOUNT (MILLIONS)	% COST
Appalachian Power Co. . . . .	\$ 60	9.71
	70	9.59
Kentucky Power Co. . . . .	30	8.81
Ohio Power Co. . . . .	80	10.11
	80	9.24
	<u>\$320</u>	<u>9.58*</u>

\*—Weighted average.

The 8.81% cost to Kentucky Power was the lowest for an AEP System company since February 1974.

Proceeds from Appalachian Power's \$70 million bonds and half of Ohio Power's second \$80 million issue were used to refund first-mortgage bonds of those companies maturing late in the year.

Indiana & Michigan Power Company, generating subsidiary of Indiana & Michigan Electric and owner-operator of the Cook Nuclear Plant, negotiated a three-year extension of its \$300 million term bank loan agreement, which was to have matured in 1977. It is also negotiating for additional term bank loans totaling \$75 million, which we believe will be sufficient to complete the plant's financing.

Ohio Electric Company, a generating subsidiary of Ohio Power, repaid from internal funds \$30 million of its term bank loans due 1979.

As described on page 18, the AEP System is involved in a costly program of retrofitting electrostatic precipitators at many of its coal-fired power plants. This environmental program will cost an estimated \$642 million over the period 1972-80, much of which we expect to finance through the sale of pollution-control securities by local government bodies. We were involved in 1976 in three such financings totaling \$105 million of 30-year bonds, as follows:

- Sale by Lawrenceburg, Indiana of \$25 million of 8½% bonds in connection with work at the Tanners Creek Plant in that city;

- Sale by Marshall County, West Virginia of \$50 million of 8¼% bonds in connection with work at the Mitchell Plant in that county, and

- Sale by Putnam County, West Virginia of \$30 million of 7¾% bonds in connection with work at the John E. Amos Plant in that county.

These bonds carry relatively lower interest rates than corporate mortgage bonds because, being revenue bonds that are obligations of a governmental unit, they are exempt from federal income taxes and, in some cases, state income taxes. These obligations are secured by revenues to be received from the respective operating companies under installment-purchase agreements.

The result of these financings, together with a number of lease transactions involving mining and transportation equipment, was a substantial improvement in the System's liquidity last year. As 1976 began, the AEP System had short-term debt of \$345 million; when the year ended, this had been reduced to \$254 million.

As for 1977, the subsidiaries again plan to raise large amounts of capital through the expected sale of bonds, preferred stock and pollution-control securities, and AEP may again sell additional shares of new common stock, although the timing and amount of any such sales have not yet been determined. The first financing of this year will be the sale of \$40 million of first-mortgage bonds by Ohio Power in April, followed by the sale of \$200 million of first-mortgage bonds by Ohio Electric to retire bank loans used to finance the construction of Gavin Plant. In all of these plans, we intend to continue moving toward our objective of improved ratings for the System's securities.

#### **New dividend reinvestment plan in effect**

As the shareowners were notified earlier in February 1977, the Company has implemented a new and improved Shareowner Dividend Reinvestment Plan to replace its former plan.

Basically, the new plan gives AEP shareowners the opportunity to acquire additional common stock without paying a broker's commission or service charge. Participants are able to invest their quarterly dividends on their shares automatically in additional shares of AEP common at 95% of the then-existing market price, as well as to buy additional shares at 100% of the market price by making optional cash payments. Such optional payments may be up to \$3,000 per quarter.

The offering of stock under the new plan may be made only by means of the prospectus, which was mailed earlier this month to shareowners of record. Any shareowner who did not receive a copy may obtain one by writing to the Company's transfer agent: Morgan Guaranty Trust Company, Dividend Reinvestment Plan (AEP), P.O. Box 3506, New York, N.Y. 10008.

## **Environmental Protection**

### **Progress made in air-quality protection**

Environmental protection is important, for it helps protect the health and welfare of mankind and its future, and we are working hard at it. For us, it is a full-time, continuing and expensive task. But, for all its very large cost, environmental protection does not produce a single kilowatt of electricity; indeed, it consumes very large amounts of energy at our power plants, taking away from both their output and their efficiency.

There were several important developments in the field last year. Among the more significant was the promulgation of sulfur-oxide-emission standards for plants in the state of Ohio—last of the seven AEP System states to adopt such standards. They proved somewhat less restrictive than those in other areas and, in most cases, will permit our continued use of local coals, which theretofore had been in doubt.

We made good progress in the control of solid and gaseous emissions from our power plants' stacks, and we continued to step up our research and development efforts in the area of air-quality protection.

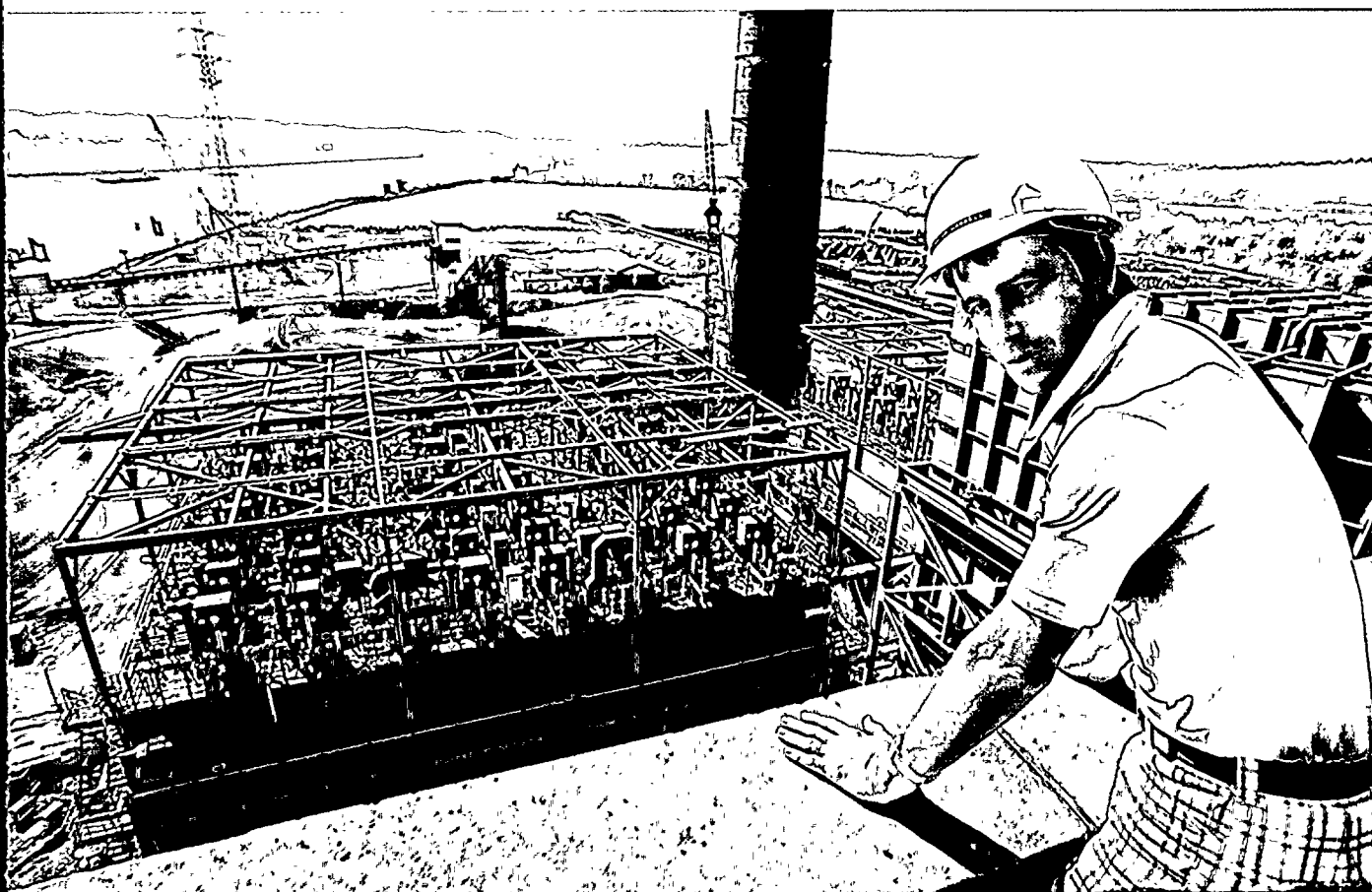
### **Precipitator program is massive**

We are engaged in a massive, continuing program of retrofitting much of the particulate-emission-collection equipment at the System's coal-burning power plants. It is by far the largest environmental undertaking in the System's history.

This program, in which new, highly efficient electrostatic precipitators are being installed to upgrade existing fly-ash-collection systems, involves 33 generating units at 13 power plants in five states. Work has been completed on 14 of the units, is under way on 16 others (to be completed in 1977-79) and is projected at the remaining three. Constraints on financing held up one installation in Indiana, and uncertainties due to the delay in establishing state air standards held up work on two units in Ohio. We now hope to complete the Indiana project by 1979, the Ohio work by 1980.

This precipitator-backfitting undertaking will cost an estimated \$642 million, a figure that does not include work that had been done earlier (1969-72) nor the installation of the giant precipitators associated with our new 1.3-million-kw generating units.

Another step toward improved air quality last year was the shutdown of the Tidd Plant in Ohio. This 31-year-old, 210,000-kw station was placed in our de-



**CHARLES C. CASSELL, JR.**, construction manager at the Tanners Creek Plant in Indiana: "The AEP System is retrofitting electrostatic precipitators for air-pollution control on 13 coal-fired power plants. This job at Tanners Creek alone will cost an estimated \$96 million. We hope to have the work done on all four of the plant's generating units by late 1977."

activated reserve. The installation of precipitators there, as well as at the 280,000-kw Philo Plant, also in Ohio, which had been closed in 1975, would have cost a total of about \$50 million. In view of the advanced ages of the two plants, this was not feasible.

#### Research aims at "clean fuels"

AEP's research and development work in the environmental field, centering on clean-fuel technology, with particular emphasis on coal, took several forms last year:

- We joined two European manufacturers—STAL-Laval Turbin AB of Sweden and Babcock & Wilcox, Ltd. of Great Britain—in a study to determine the commercial and technical feasibility of building a 64,000-kw demonstration power plant to employ a technique known as pressurized-fluidized-bed combustion. In this method, coal is burned at high pressure in a bed of limestone, which absorbs the sulfur in the fuel so

that the waste gases are virtually free of sulfur dioxide. The technique is promising and, among its advantages, is capable of burning all types of coal and of generating electricity more efficiently than present methods. We expect to make a decision by mid-year on whether to proceed with the demonstration plant.

- AEP signed an agreement with OTISCA Industries in support of research and development to further that company's process for removing sulfur and ash from coal prior to its burning. We believe that this process may be able to remove up to 90% of both pyritic and organic sulfur.

- Past annual reports have discussed our joint effort with Allegheny Power System and ERDA to produce low-sulfur oil from high-sulfur coal. This pilot coal-liquefaction project is being carried out at an ERDA research facility near our Mitchell Plant in West Virginia. A subsidiary of the Fluor Corporation is operating it. Testing operations will begin soon.



■ And we contributed coal tonnages to four different research and development projects in coal desulfurization. One is a process test unit, built by TRW and sponsored by the Environmental Protection Agency, which seeks to remove sulfur chemically. Another is a Gulf Oil project involving the catalytic hydrogenation and liquefaction of coal. And the other two are chemical-cleaning processes being developed by Atlantic Richfield and Battelle Memorial Institute, respectively.

#### Environmental litigation continues

As we have stated in the past, the AEP System's policy is to comply fully with all lawful environmental requirements—federal, state and local. But, when we believe that a particular requirement has no scientific basis or is unreasonable and unjustified, we are not timid about challenging its validity in the courts—for, in the final analysis, it is our customers who must pay for such unwarranted requirements.

A few of the developments in such litigation in 1976 were these:

**"SIGNIFICANT DETERIORATION"**—AEP believes that the EPA's so-called "significant deterioration" regulations would be substantially hurtful to the nation's general welfare and economy. These regulations, upheld last year by the U.S. Court of Appeals (District of Columbia), would drastically restrict the construction of new industry in the nation's "clean-air regions," where national ambient-air standards are already being met—even though such standards would still be met. We believe that the regulations would prohibit or severely impair economic development in much of the country, without any corresponding benefit to the health or welfare of the public. For this reason, several electric utilities, including I&M and Ohio Power, have sought judicial review of the appellate court's decision.

**TALL STACKS**—The Supreme Court declined to review a decision by the Sixth Circuit Court of Appeals, which had ruled that atmospheric-diffusion techniques (such as intermittent controls or tall stacks, coupled with continuous air monitoring) could not be substituted for constant-emission limitations on power plants (such as costly, problem-laden sulfur-scrubbing devices or the use of complying low-

sulfur coal). The appeal had been made by several utilities, including Kentucky Power and the federal government's own Tennessee Valley Authority.

**COMPLIANCE FEASIBILITY**—A major blow to most electric utilities—and to their customers—was a decision by the Supreme Court that, under the language of the Clean Air Act, the EPA was without authority to consider the technological or economic feasibility of compliance involved in its approval of a state's implementation plan for air-quality control. In other words, EPA could not take into account, in its analysis of a given proposal, whether the technology even existed or how much it might cost if it did. Some members of the court went out of their way to point out that, while this was a wholly irrational result, it could be changed only by the Congress.

**SULFATES**—An environmental organization filed suit in the U.S. Court of Appeals (District of Columbia) seeking to require the EPA promptly to promulgate ambient-air standards for the control of sulfates. If such standards were to be set, their ultimate result could only be enormous expenditures for still more pollution-control equipment, even though very little is yet known about the formation, dispersal and effects of such sulfur compounds. Accordingly, Appalachian Power, I&M, Kentucky Power and Ohio Power joined other utilities in intervening in the suit, supporting EPA's position that insufficient information exists to justify setting any such standards.

**WATER MANAGEMENT**—The EPA issued regulations in 1975 requiring the states to implement detailed management plans for the use of all waters within the states, including so-called "anti-degradation" restrictions and other restraints that, in our view, would greatly impair future industrial development, including new power plants, in much of the U.S., again without corresponding benefit. AEP and other utilities, as reported in the 1975 annual report, sought review of these regulations in the U.S. District Court in Chicago. The case remains pending.

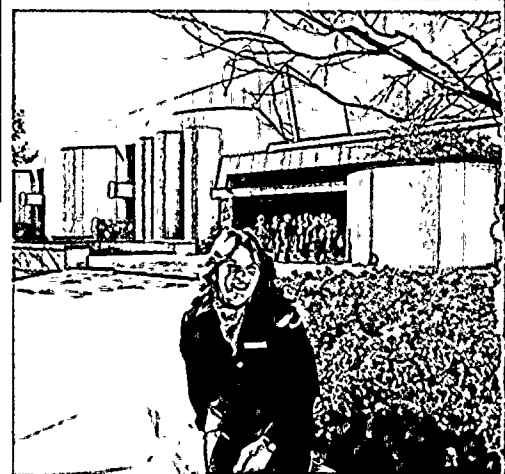
**WATER DISCHARGES**—The U.S. Fourth Circuit Court of Appeals last year ordered the EPA to revamp a number of its water-pollution-control requirements for steam power plants. The court found that such regulations were unjustified and set them aside for further consideration. The AEP System, along with many other electric utilities, had appealed to the court back in 1974. We believe that, as a result of these efforts, more reasonable regulations will be formulated that will adequately protect the environment without imposing unnecessary major costs on our customers.

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WALTER D. SMITH, reclamation supervisor, Ohio Power Company: "The AEP System is proud of the work it has done in reclaiming the land after surface mining. In 1976 alone this work was recognized by the U.S. Department of the Interior, the West Virginia Department of Natural Resources and the American Jewish Committee."

## Women at Work

*The American Electric Power System employs about 20,000 people in its facilities in 10 states. Some 2,500 of these employees are women, who are carrying out a wide variety of functions necessary to the successful operation of an electric utility system. A few of the jobs they are performing, including those requiring professional and physical skills, are shown on the next three pages.*



**CONNIE LEWIS**  
Coal Equipment Operator  
Cook Coal Terminal  
Metropolis, Illinois

**BEVERLY STEARS**  
Asst. Secretary & Asst. Treasurer  
Michigan Power Company  
Three Rivers, Michigan

**MARY COFER**  
Recruiter  
AEP Service Corporation  
New York

**MARY SLOCUM**  
Lineman  
Appalachian Power Company  
Roanoke, Virginia

**SANDY SULLIVAN**  
Hostess  
Cook Nuclear Center  
Bridgman, Michigan





**GWEN SHERROD**  
Chemical and Radiation Protection Technician  
Donald C. Cook Nuclear Plant  
Indiana & Michigan Electric Co.

**TERESA MURRAY**  
Machinist  
Central Machine Shop  
John E. Amos Plant

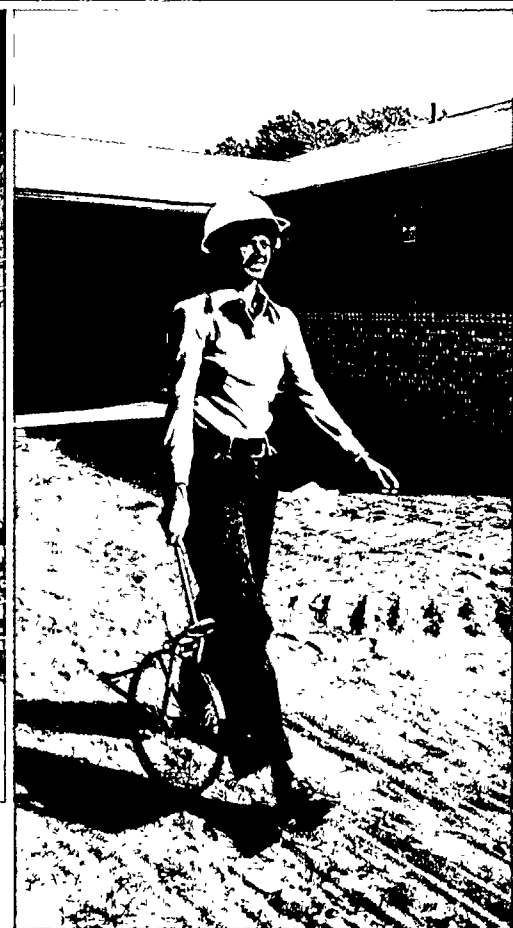
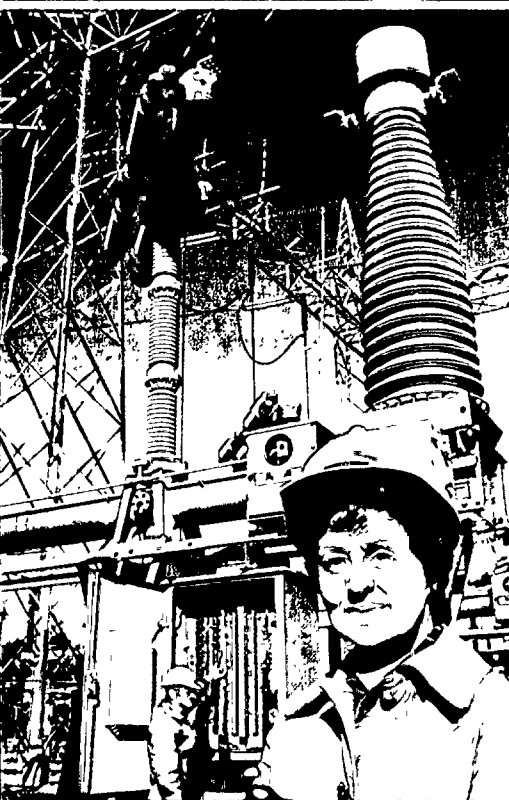
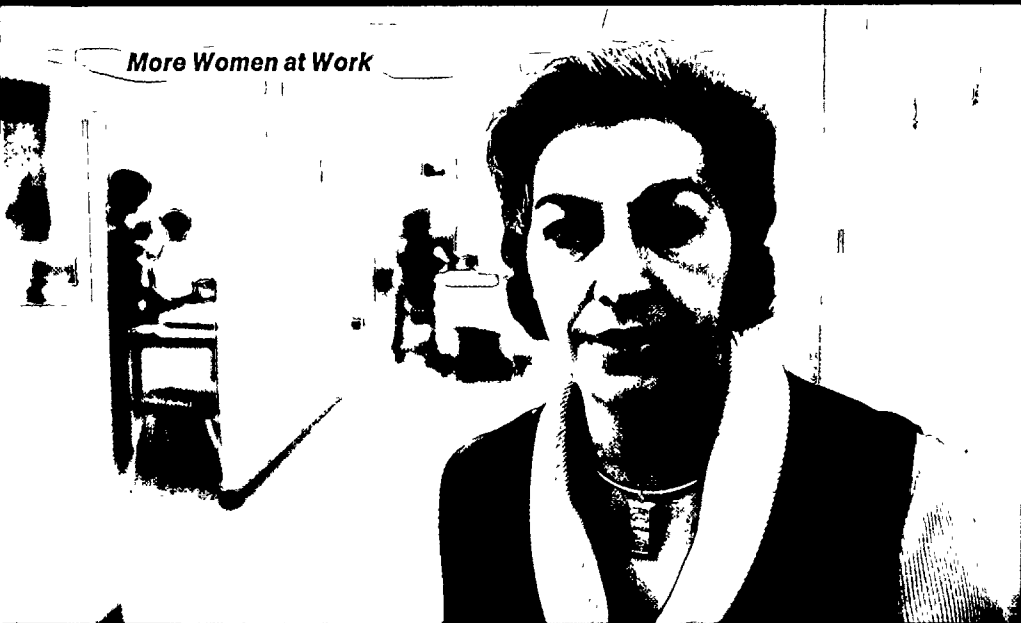
**SUSAN JOHNSON**  
Computer Programmer  
UHV Research Center  
Lakeville, Indiana

**ELLIE SNOW**  
Beltman  
Meigs Mine  
Southern Ohio Coal Company

**SHEILA ANDERSON**  
Laboratory Technician  
Meigs Mine  
Southern Ohio Coal Company

**BETTY LOU CARTER**  
Editor  
Appalachian Power Company  
Roanoke, Virginia

**MARILYN REYNOLDS**  
Computer Data Entry Supervisor  
AEP Service Corporation  
New York



**PATRICIA SHIPE**  
Relay Engineer's Assistant  
Ohio Power Company  
Canton, Ohio

**CONNIE MARINO**  
Asst. Treasurer—Accounting  
AEP Service Corporation  
New York

**DEBORAH HOLLEY**  
Welghmaster  
Jullan Mine  
Southern Appalachian Coal Co.

**LINDA STREJC**  
Residential Representative  
Michigan Power Company  
Three Rivers, Michigan

**MARIA PANTIN**  
Civil Engineer  
AEP Service Corporation  
New York

## Research and Development

### UHV line energized above 2-million volts

The electric utility industry, founded on a base of research and development carried out almost a century ago by Thomas A. Edison, has been pursuing further advances in technology ever since—ever in search of more reliable, efficient, economical and environmentally sound electric service to its customers.

Earlier we described the AEP System's R&D work in environmental protection. In this section are described still other projects under way or in prospect.

The biggest single R&D project under way at this time—and perhaps the most ambitious such program in its particular field anywhere—is operation of the AEP/ASEA ultra-high-voltage research center at Lakeville, Indiana. This UHV test facility, jointly built, owned and operated by AEP and ASEA of Sweden, a major manufacturer of electrical apparatus, will have represented an estimated total investment of \$35 million by all parties by the time its mission is ended.

The facility was commissioned in October before a large industry audience. The test station and line have been operating at voltages above 2-million volts, the highest transmission level ever sustained by a full-scale power line. Such operation represents the third and final phase of a program undertaken by the two partners in 1969 that will have significant bearing on the future delivery of large blocks of electric energy. Earlier phases were basic research in transmission above 1-million volts and the design and construction of the test station and line.

This pioneering in UHV was a natural outgrowth of our earlier pioneering, in the 1940s, 1950s and 1960s, in extra-high-voltage (EHV) transmission. Why UHV? Because it will be able to move more power over longer distances and do it more economically and efficiently than existing lines—and with less total impact on the land. One UHV line would be able to deliver four or five times the electric energy of the present highest-capacity EHV lines, while using much less land for right-of-way requirements per kw.

\* \* \*

Other R&D work under way in the field of electrical engineering includes:

**CURRENT LIMITING**—The first of three newly developed current-limiting devices will be installed later this year at our Muskingum River Plant in Ohio. Their purpose is to prevent short-circuit currents from becoming unmanageable or destructive by quickly in-

serting current-limiting resistance in a faulted line. The new device, jointly developed by AEP and Hughes Research Laboratories, promises advantages over present methods of limiting fault currents and offers potential savings of millions of dollars by avoiding the replacement of costly equipment.

**AUTOMATIC METER READING**—We plan to install an experimental system in Canton, Ohio later this year for the remote reading of residential electric meters. Special sensing devices will "read" the meters in 30 homes selected for the test and transmit the readings over the power line serving the homes back to a central computer. We will use the system as a means of not only determining the technical feasibility of remote meter reading but also experimenting in residential load-switching in the event that such procedure would ever be necessary due to an emergency situation on the System.

**SUBSTATION COMPUTERS**—We are investigating the feasibility of applying computers to our substations. While a computer could perform numerous functions, the most significant would be protective control. Because a computer is continuously acting and self checking, it could immediately recognize a problem (such as equipment failure) and simultaneously take steps to correct it.

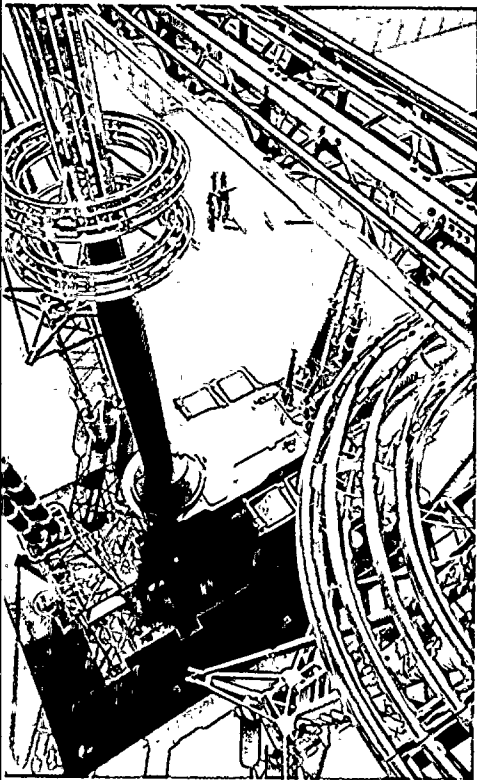
### Gas-cooled reactor gets a boost

For a number of years AEP has been involved in research on the gas-cooled fast-breeder reactor (GCFR). (A "breeder" reactor produces or "breeds" more fissionable nuclear fuel than it consumes; thus, its fuel supply is self-perpetuating.) In several ways 1976 was a key year for the gas-cooled breeder.

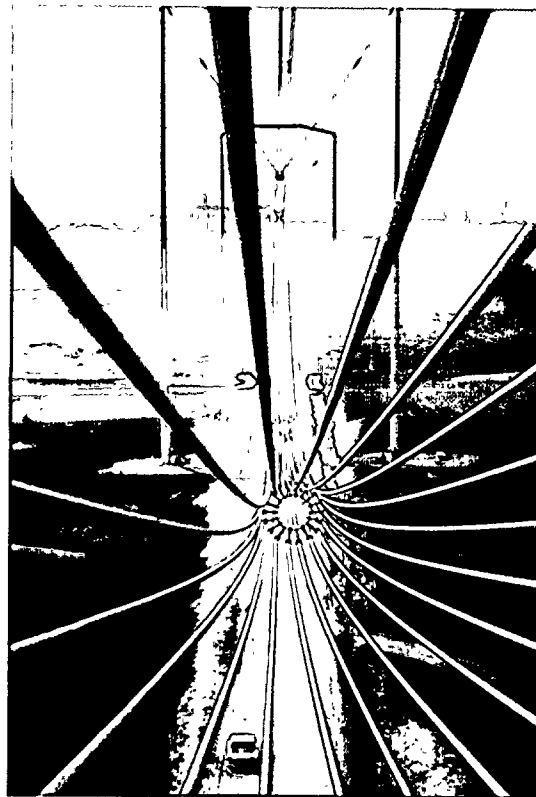
Although several utilities, including AEP, had been sponsoring R&D work on the GCFR since 1965—a program that had lacked the financial support from ERDA it had given another breeder type—ERDA last year began to recognize GCFR's potential benefits. Such benefits include its greater ability to breed new fuel, its simpler components and its possible safety advantages. ERDA asked the supporting utilities to submit a proposal and management organization through which it could contract and supply funding for the required work prior to possible construction of a demonstration plant. The utilities and General Atomic Corporation responded by forming Hellum Breeder Associates, Inc. to coordinate the design and development work that could lead to construction and operation by the late 1980s of a 300,000-kw power plant to demonstrate the GCFR concept.

## Transmission for Tomorrow

*W. R. ROY, project manager at the AEP/ASEA ultra-high-voltage research center in Indiana: "Exploring the unknown is always an adventure. Here, we hope to pave the way for the electric power transmission lines of the future, just as the AEP System's earlier research resulted in the nation's first extra-high-voltage lines—at 345,000 volts in the early 1950s and 765,000 volts in the late 1960s."*



UHV transformer



Conductor "bundle"



Substation bus

### Energy use studies under way

Progress was made last year in research and development in residential energy storage. This program centers on the field testing of newly designed equipment for off-peak storage space and water heating.

Public service commissions in Virginia, West Virginia and Ohio approved experimental rates for this program. Test systems are being installed in the homes of 75 customers in these three states. In the test systems, two units—a conventional electric furnace and a heat-storage furnace with a refractory core inside an insulated cabinet—are positioned side by side. For eight hours at night the conventional furnace heats the home while the storage furnace is charging and storing heat for use the other 16 hours. Even as the test program is going forward, larger and more advanced central electric-thermal storage equipment, combining the features of both of the furnaces being used in the tests, is being developed to accommodate larger homes and to be adaptable to replace central warm-air furnace systems.

The program's goal is to determine the economic performance and customer acceptance of this means of decreasing peak usage by increasing off-peak usage. If the program proves successful, expanded customer use of thermal storage could result in more efficient use of our utility facilities, with possible savings to be shared with customers.

\* \* \*

**LOAD RESEARCH**—We also began a load-research study designed to determine power-use patterns among our various types of customers, especially as they are affected by the time of day, day of week or season of year, and by weather. We installed 600 special meters in the homes of customers selected at random to represent a valid sample of their electric usage. The data to be derived will help us in our planning of future rate structures and power-supply needs and in advising customers on efficient energy use. Meanwhile, we also are installing 900 meters on the premises of higher-use commercial and industrial customers for similar studies.

\* \* \*

**SOLAR ENERGY**—We expanded our studies of the operating characteristics and benefits of solar energy. We have installed extensive test-metering equipment in five customer-owned solar homes, each representing a different form of solar-heating technology, and we plan to install an equal number this year. We believe that the data collected will help us define the role of solar energy in the total energy supply of our customers.



**GLENN H. REYNOLDS**, assistant manager, Roanoke Division, Appalachian Power Company: "The AEP System is experimenting in three states with a thermal-energy-storage program combining a conventional electric furnace (left) with a heat-storage furnace (right). Customer acceptance will permit the shifting of some residential load from peak-use to off-peak hours, benefiting both the company and its customers."



**W. E. WILCOX**, customer service representative, Ohio Power Company, Mount Vernon, Ohio: "This residence of a customer near Lexington, Ohio is one of five solar-heated homes under study throughout the AEP System. Before the end of the year we hope to add another five homes to our solar-energy investigation."

## Other Major Matters

### We still await decision on C&SO

Over nine years ago the Company and Columbus and Southern Ohio Electric Company proposed to the Securities and Exchange Commission that AEP acquire C&SO through an exchange of common stock.

In 1975, because of the changing conditions that had evolved in the electric utility industry in the interim, the SEC asked AEP and the other parties in the matter to update their hearing testimony, particularly with respect to potential benefits and other results to be expected from the proposed acquisition. This was completed April 2, 1976.

We remain hopeful that the SEC will approve the acquisition. In our view, it would be beneficial to both companies and to their customers and shareowners.

### Two major cases are settled

Earlier sections of this report discussed cases in the courts in such areas as environmental regulation, fuel supply and rates. Several other proceedings bear mention.

In early 1977 two major cases of litigation, both involving turbine-generators, were settled. One was an antitrust case brought by the AEP System in 1971 against the nation's two manufacturers of large turbine-generators, General Electric Company and Westinghouse Electric Corporation; the other was a lawsuit filed by the AEP System in 1974 against Westinghouse involving its turbine-generator at our Mitchell Plant. Both cases had been in the U.S. District Court in New York City.

**THE ANTITRUST CASE**—Four AEP System companies filed suit against Westinghouse and General Electric, alleging their conspiracy to eliminate price competition and monopolize the manufacture of large turbine-generators.

The U. S. Department of Justice, in December 1976, filed proposed modifications to an antitrust consent decree that had been outstanding against Westinghouse and GE since 1962. The modifications, filed with and subject to approval of the U.S. District Court in Philadelphia, contained provisions that are expected to rectify the lack of competition in the sale of turbine-generators which had prompted the AEP suit in the first place.

The settlements, signed January 14 with Westinghouse and February 2 with GE, included their dismissal of counterclaims against the AEP companies and their reimbursement of our costs and expenses of liti-



**WILLIAM F. BOOKER**, equipment operator at the John E. Amos Plant in West Virginia: "This looks like a power plant control room, but it's not. It is a simulator, operating just like a control room, and it's used to train operators for the AEP System's new 1.3-million-kilowatt generating units."

gation. They are contingent upon approval by the federal court in Philadelphia of the modified consent decree agreed to by GE, Westinghouse and the Justice Department, as cited earlier.

We now hope that competition will be restored to the turbine-generator market, thus benefiting the entire utility industry and its customers.

**THE MITCHELL CASE**—Four AEP System operating companies filed this suit, in which they alleged failure of a Westinghouse turbine-generator (Unit 1 at the Mitchell Plant) to meet its operating specifications and warranties, and sought direct and consequential damages totaling \$75 million. (The unit, rated at 800,000 kw, has been operated at 660,000 kw.) Westinghouse later asked the court for a summary judgment in its favor, which the court denied.

Each party agreed that the settlement did not represent an admission of liability. Terms of the settlement included: a cash payment, the furnishing of certain major turbine-generator components, and modification to and an additional warranty for the turbine-generator, all by Westinghouse. Payment for the new components (except some being furnished at no cost) is essentially contingent upon performance of the existing turbine-generator in accordance with the new warranty.

### Nuclear fuel is among court case subjects

Another area of concern in the litigation arena is the Donald C. Cook Nuclear Plant's fuel supply, which has been under contracts dating to the late 1960s. One such contract is the subject of highly complex

litigation, involving several lawsuits, that could affect the cost of nuclear fuel. Under this contract, United Nuclear Corporation, General Atomic Company and Gulf Oil Corporation are obligated to supply uranium concentrates and fabricated nuclear fuel. In substance, each contractor claims, among other things, that for reasons of "commercial impracticability" it need no longer make deliveries under the contract or that, alternatively, it is entitled to a price higher than called for by the contract. The most recent development in the matter is that I&M has been brought in as a party to a lawsuit filed by United Nuclear against General Atomic in a state court in New Mexico, involving, among other things, the subject contract.

#### Other proceedings

We reported last year an antitrust suit filed early in 1976 in the U. S. District Court in Fort Wayne, in which a cable-television organization alleged that I&M, with five telephone companies named as co-conspirators, had attempted to monopolize communications by terminating contracts and increasing charges for the rental of utility poles, and sought damages which when trebled would aggregate more than \$150 million. Nothing of significance took place in this matter during the year. However, in December, a similar suit was filed in the U. S. District Court in Dayton, Ohio, against Ohio Power and AEP, with six other utilities named as co-conspirators, seeking damages which when trebled would equal \$60 million. Basically, these suits stem from the unwillingness of the

cable-TV companies to pay what we believe to be a fair charge for their use of our poles.

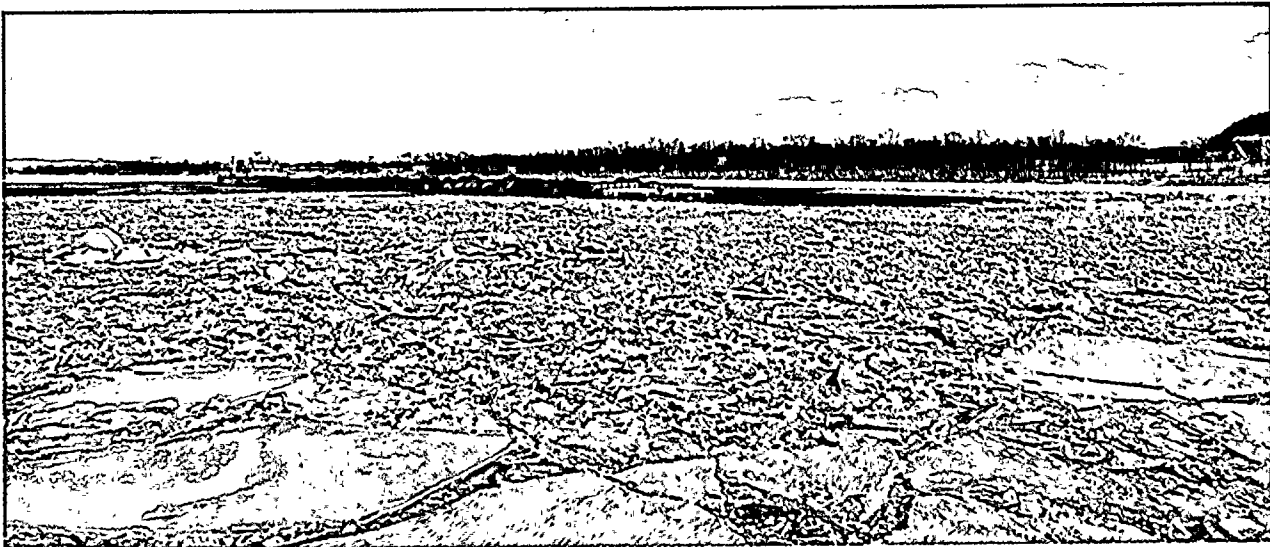
\* \* \*

The Securities and Exchange Commission (SEC) has issued an order instituting a private investigation, through its staff, into certain aspects of the System's operations, including its promotion of all-electric housing during the 1960s and the acquisition and operation of certain of our coal and coal-transportation properties. The staff has indicated its view that SEC authorization should have been obtained for certain of the transactions.

We do not believe that the disputed transactions required any authorization by SEC in addition to authorizations previously granted, and have filed with the SEC staff our responses to the staff's comments. We have also filed an application with the SEC for a determination that no authorizations for such transactions are required, or, in the alternative, approval by the SEC of the transactions questioned by its staff. No action has yet been taken by the Commission.

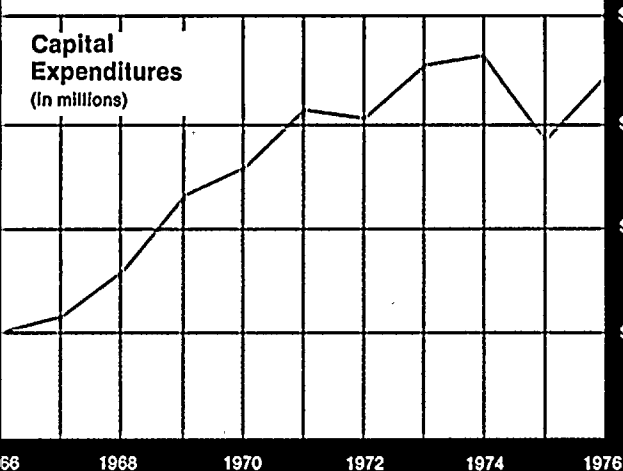
\* \* \*

An action filed in the U. S. District Court in Roanoke, Virginia by the U. S. Equal Employment Opportunity Commission, which alleged that Appalachian Power had discriminated against blacks and females, was dismissed on procedural grounds on the company's motion. The EEOC then appealed to the U. S. Court of Appeals for the Fourth Circuit, where the appeal is pending.

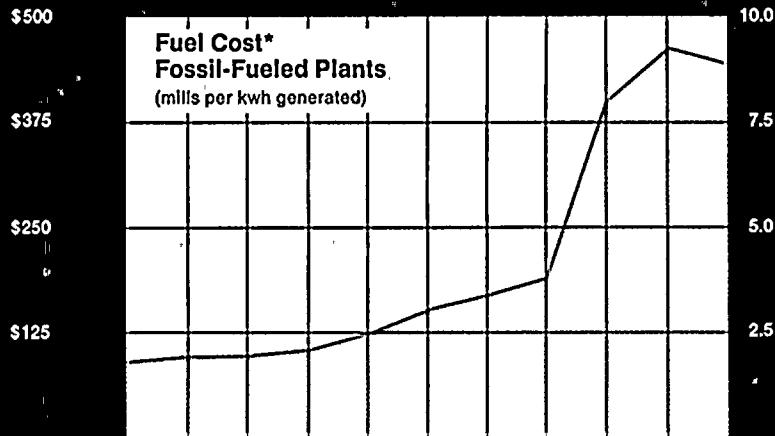
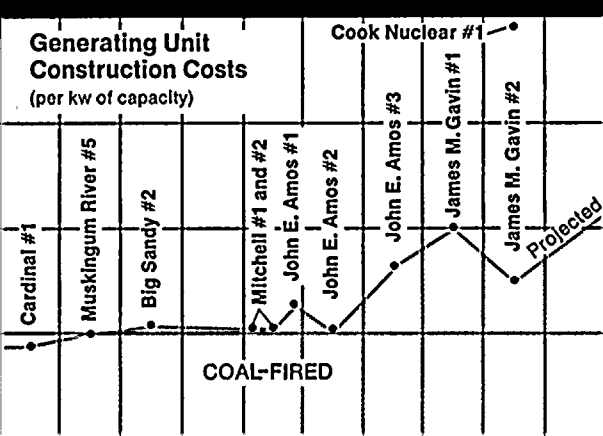
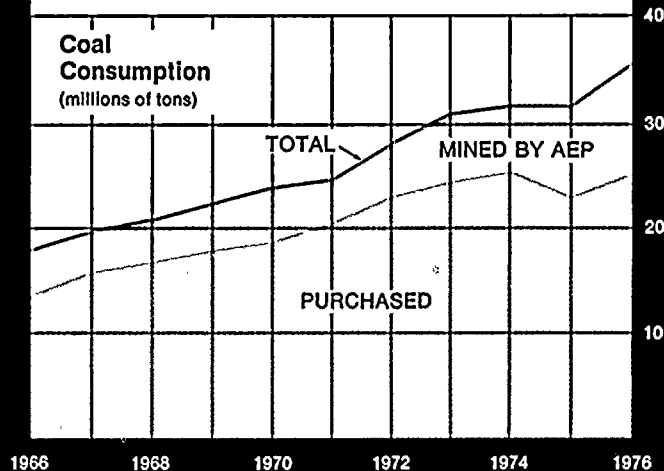


*AEP System employees will long remember the Winter of 1976-77. This AEP tow of nine barges, carrying 13,500 tons of coal on the Ohio River from Ashland, Kentucky to our Tanners Creek Plant at Lawrenceburg, Indiana—normally a day's run—took a week to fight its way through the thickest river ice in this century. It was the plant's first coal delivery in over three weeks.*

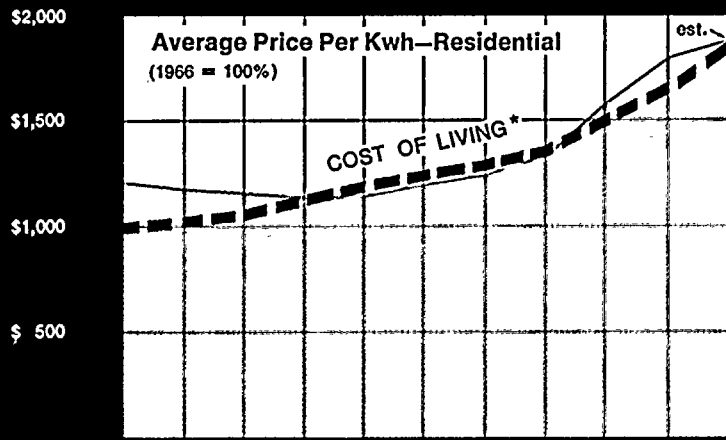
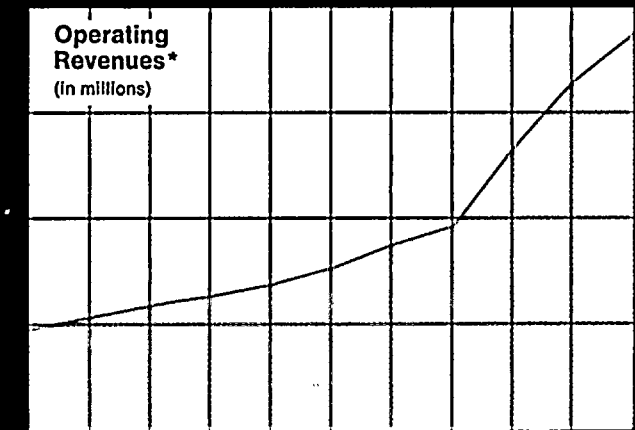
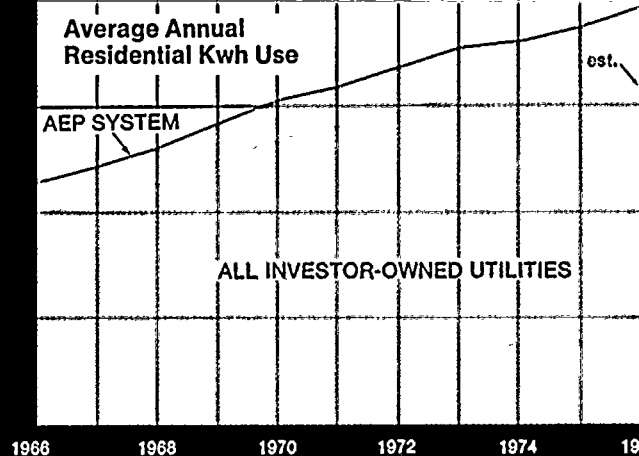
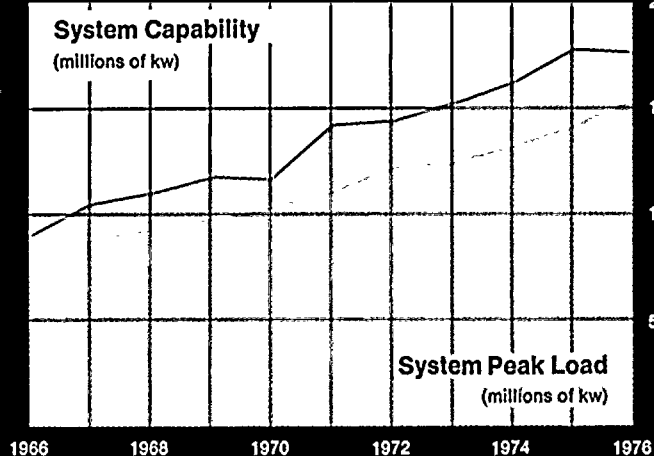
## SYSTEM EXPANSION



## FUEL SUPPLY







## Directors and Management

### AEP board elects three new directors

Three new directors were elected to the AEP Board, two in 1976 and one in February 1977. The Board's membership is now 15. In the order of their elections, the three new directors are:

FRANK N. BIEN, who was elected January 27 last year. At that time he was executive vice president and operating head of Ohio Power. Subsequently, on February 19, he was elected vice chairman—operations of the AEP Service Corporation, moving from Canton, Ohio to New York. Both elections were reported in the 1975 annual report.

HERBERT E. MARKLEY, who was elected December 21. He is president of The Timken Company, of Canton, and his election to the Board provided further representation on it from Ohio, largest of the seven AEP System states.

ANN HAYMOND ZWINGER, who was elected February 22, 1977. Mrs. Zwinger, of Colorado Springs, Colorado, is an author, consultant, artist and naturalist. A native of Muncie, Indiana, one of the AEP System's largest communities, she is the daughter of the late William T. Haymond, attorney and a director of Indiana & Michigan Electric, and the granddaughter of the late H. Clay Haymond, a founder of the Muncie Electric Light Company, an AEP predecessor. She is AEP's first woman director.



*Ann Haymond Zwinger*

\* \* \*

Meanwhile, two directors left the Board last year. One, Donald C. Cook, had resigned February 19 as chairman of the board and chief executive officer of the Company and of the AEP Service Corporation and as president and chief executive of the Company's other subsidiaries, as noted in the 1975 annual report. He subsequently resigned, on February 25, as a director of AEP following his decision to join an investment banking firm as a partner. The other, Robert M. Kopper, who was retiring as executive vice president and operating head of I&M, did not stand for reelection as an AEP director at the annual meeting on April 28.

### W. S. White, Jr. elected chairman

On February 19, 1976, W. S. White, Jr. became chairman of the board and chief executive officer of the Company and the AEP Service Corporation, as well as president and chief executive of the other subsidiaries of the Company. He succeeded Mr. Cook, who had served as chief executive of the various companies since 1961. At the time of his election, Mr. White was vice chairman—operations of the Service Corporation and a director of the parent Company, with 28 years of management experience with the AEP System, both in its New York headquarters and in Appalachian Power, a major operating company.

Also, at the request of the Board, George V. Patterson agreed to remain as president of the Company for one year past his normal retirement date of last August 1. He also is serving for the same additional period as president of the AEP Service Corporation, although he relinquished his office of vice chairman of that subsidiary on February 19 last year.

Several other officers also were elected by AEP System companies during 1976 and early 1977.

AEP SERVICE CORPORATION—T. J. Nagel, senior executive vice president, who had been head of the System Planning Department, and Paul D. Martinka, senior vice president, who had been head of the Fuel Supply Department, were elected assistants to the chairman. Gregory S. Vassell, vice president—system planning, was elected senior vice president—system planning, succeeding Mr. Nagel in that capacity, and Gerald Blackmore was elected senior vice president—fuel supply, succeeding Mr. Martinka.

Designation of Mr. Blackmore, a veteran of 32 years of coal-mining management experience in both England and Canada, to direct the AEP System's fuel-supply operations was one of several changes in the Fuel Supply Department. Another was the election of William E. O'Connell as vice president—mining operations.

Also, Joseph H. Vipperman, assistant controller, was elected deputy controller, and Leonard V. Asante was elected assistant treasurer—tax accounting.

INDIANA & MICHIGAN ELECTRIC—This operating company elected Jack F. Stark as its executive vice president and operating head to succeed Mr. Kopper. Richard C. Menge was elected a vice president to succeed Mr. Stark.

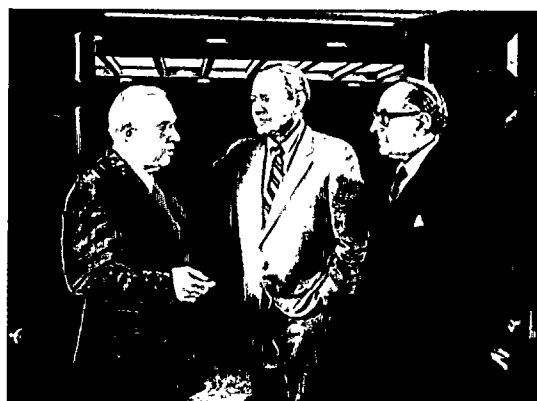
OHIO POWER—Charles A. Heller, Jr., who had been a vice president, was elected executive vice president and operating head of the company, succeeding Mr. Bien following his move to the Service Corporation.



WHITE DISBROW MARKLEY BOESCHSTEIN



GAVIN BIEN STANTON



FOLSOM DICKE COHN



TILLINGHAST MENGE PATTERSON AMOS

## Directors of the Company

(Year indicates start of Board service)

**JOHN E. AMOS (1962) E**  
Partner, Amos & Brotherton law firm  
Charleston, West Virginia

**FRANK N. BIEN (1976) O**  
Vice Chairman-Operations  
American Electric Power Service Corporation

**W. W. BOESCHENSTEIN (1969) A\***  
President, Owens-Corning Fiberglass Corporation  
Toledo, Ohio

**HERBERT B. COHN (1966) E, F\***  
Vice Chairman, American Electric Power Company  
Vice Chairman and Chief Administrative Officer  
American Electric Power Service Corporation

**RICHARD M. DICKE (1964) A**  
Senior Partner, Simpson Thacher & Bartlett law firm  
New York

**RICHARD E. DISBROW (1975) F**  
Vice Chairman and Controller  
American Electric Power Service Corporation

**RICHARD G. FOLSOM (1964) E, O, A**  
President Emeritus, Rensselaer Polytechnic Institute  
Retired-Napa, California

**JAMES M. GAVIN, Lt. Gen., USA (Ret.) (1961) E**  
Chairman, Arthur D. Little, Inc.  
Cambridge, Massachusetts

**HERBERT E. MARKLEY (1976)**  
President, The Timken Company  
Canton, Ohio

**WALTER O. MENGE (1955) F**  
Honorary Chairman,  
The Lincoln National Life Insurance Company  
Fort Wayne, Indiana

**GEORGE V. PATTERSON (1966) E, O\***  
President, American Electric Power Company  
President and Chief Operating Officer  
American Electric Power Service Corporation

**FRANK STANTON (1969) E**  
Chairman, American National Red Cross  
New York

**JOHN TILLINGHAST (1972) O**  
Vice Chairman-Engineering & Construction  
American Electric Power Service Corporation

**W. S. WHITE, JR. (1972) E\***  
Chairman and Chief Executive Officer  
American Electric Power Company and  
American Electric Power Service Corporation

**ANN HAYMOND ZWINGER (Elected February 22, 1977)**  
Author, Artist, Consultant, Naturalist  
Colorado Springs, Colorado

## Officers

### AMERICAN ELECTRIC POWER COMPANY

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*Chairman of the Board  
& Chief Executive Officer* ..... W. S. WHITE, JR.  
*Vice Chairman* ..... HERBERT B. COHN  
*President* ..... GEORGE V. PATTERSON  
*Vice President* ..... GERALD P. MALONEY  
*Secretary* ..... A. JOSEPH DOWD  
*Treasurer* ..... ROBERT O. WHITMAN  
*Asst. Secretary & Asst. Treasurer* .... H. D. ANDERSON, JR.  
*Assistant Treasurer* ..... PETER J. DeMARIA

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### OPERATING COMPANIES

#### APPALACHIAN POWER COMPANY

*Executive Vice President* ..... JOHN W. VAUGHAN  
*Vice President* ..... JACK LLOYD  
*Vice President* ..... E. L. MUNDAY, JR.

#### INDIANA & MICHIGAN ELECTRIC COMPANY

*Executive Vice President* ..... JACK F. STARK  
*Vice President* ..... RICHARD C. MENGE

#### KENTUCKY POWER COMPANY

*Executive Vice President* ..... WALDO S. LaFON

#### KINGSPORT POWER COMPANY

*Executive Vice President* ..... JOHN E. FAUST

#### MICHIGAN POWER COMPANY

*Executive Vice President* ..... RICHARD W. SAMPSON

#### OHIO POWER COMPANY

*Executive Vice President* ..... CHARLES A. HELLER, JR.  
*Senior Vice President* ..... E. E. FOURNACE  
*Vice President* ..... WILLIAM A. BLACK

#### WHEELING ELECTRIC COMPANY

*Executive Vice President* ..... DONALD A. DICK

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Insurance Coverage—All American Electric Power System companies, as well as their directors and officers, are covered by insurance to protect against liability that might be incurred as a result of claims arising from the acts of directors or officers in their corporate capacities. This insurance, which was placed in effect December 31, 1975 and amended

### AMERICAN ELECTRIC POWER SERVICE CORPORATION

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#### OFFICE OF THE CHAIRMAN

##### CHAIRMAN OF THE BOARD

*Chief Executive Officer* ..... W. S. WHITE, JR.

##### PRESIDENT

*Chief Operating Officer* ..... GEORGE V. PATTERSON

##### VICE CHAIRMEN

*Chief Administrative Officer* ..... HERBERT B. COHN  
*Controller* ..... RICHARD E. DISBROW  
*Engineering & Construction* ..... JOHN TILLINGHAST  
*Operations* ..... FRANK N. BIEN

##### ASSISTANTS TO THE CHAIRMAN

*Senior Executive Vice President* ..... T. J. NAGEL  
*Senior Vice President* ..... PAUL D. MARTINKA

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##### SENIOR EXECUTIVE VICE PRESIDENTS

*Engineering & Construction* ..... JOHN E. DOLAN  
*Treasurer & Chief Acctg. Officer* ... ROBERT O. WHITMAN

##### SENIOR VICE PRESIDENTS

*Finance* ..... GERALD P. MALONEY  
*Fuel Supply* ..... GERALD BLACKMORE<sup>(a)</sup>  
*General Counsel & Assistant Secretary* .. A. JOSEPH DOWD  
*Public Affairs* ..... HAROLD R. JOHNSON  
*Rates* ..... JOHN G. HOWARD  
*System Planning* ..... GREGORY S. VASSELL

##### VICE PRESIDENT & SECRETARY

*Associate General Counsel* ..... JOHN R. BURTON

##### VICE PRESIDENTS

*Administrative Services* ..... PETER R. STEENLAND  
*Asst. Treasurer—Tax Acctng.* ..... H. D. ANDERSON, JR.  
*Asst. Treasurer, Treasury Staff* ..... PETER J. DeMARIA  
*Computer Applications* ..... ANTHONY F. GABRIELLE  
*Customer Services* ..... DORMAN M. MILLER  
*Electrical Engineering* ..... H. N. SCHERER, JR.

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April 13, 1976, is included under an excess public liability policy with Lloyds of London. This policy, which is concerned primarily with personal injury and property damage coverage for the AEP System, provides a limit of liability of \$25 million per occurrence for such coverages and a limit of liability of \$20 million per occurrence applicable to the



**VICE PRESIDENTS—Continued**

*Finance* ..... BRUCE M. BARBER  
*Fuel Supply Administration* ..... BLAIR A. ROSS<sup>(a)</sup>  
*Mining Operations* ..... WILLIAM E. O'CONNELL<sup>(a)</sup>  
*Nuclear Engineering* ..... ROBERT S. HUNTER  
*Personnel* ..... GENE B. HALE  
*Power Production* ..... A. G. MEHLMAN  
*Purchasing & Stores* ..... JACK R. CORBETT  
*System Operation* ..... A. H. WILLENNAR<sup>(b)</sup>  
*Tax Counsel* ..... A. W. D. GRONNINGSATER

**ASSISTANT VICE PRESIDENTS**

*Administrative Services* ..... FRANK HERZICH  
*Chief Civil Engineer* ..... JOHN R. STRUYK  
*Chief Mechanical Engineer* ..... RICHARD F. HERING  
*Chief Plant Engineer* ..... CARL P. LUGRIN<sup>(b)</sup>  
*Employee Compensation* ..... JOHN I. HARRISON  
*Finance* ..... MICHAEL KAZIM  
*Fuel Purchasing* ..... EDWARD WESP<sup>(c)</sup>  
*Interconnections* ..... M. BRIAN McNULTY  
*Projects* ..... S. J. MARMAROFF  
*Public Affairs* ..... WILLIAM W. CORBITT  
*Rates* ..... PAUL J. ZUERCHER  
*Regional Power Supply Planning* ..... C. F. DeSIENO  
*System Operation* ..... DONALD P. NOFSINGER<sup>(b)</sup>

**ASSISTANT SECRETARIES**

*Assistant General Counsel* ..... JOHN F. DiLORENZO, JR.  
*Assistant General Counsel* ..... WILLIAM E. OLSON  
*Assistant General Counsel* ..... WILLIAM J. PROCHASKA  
*Secretary to the Chairman* ..... LOUISE MARSHALL

**ASSISTANT TREASURERS**

*Accounting* ..... CORNELIA C. MARINO  
*Internal Auditing* ..... RALPH C. YOUNG, JR.<sup>(b)</sup>  
*Statistics* ..... PHILIP H. WILLEMANN  
*Tax Accounting* ..... LEONARD V. ASSANTE  
*Treasury Staff* ..... GERALD R. KNORR

**DEPUTY CONTROLLER**

JOSEPH H. VIPPERMAN

**ASST. CONTROLLER**

HARRY D. POST

(a) Lancaster, Ohio    (b) Canton, Ohio    (c) Died Feb. 20, 1977

**INCLUDING MANAGEMENT'S  
COMMENTS ON  
CONSOLIDATED STATEMENT  
OF INCOME**

directors and officers' liability portion. The latter is subject to a \$20,000 deductible. The total premium for 1977 for all coverage, including that for personal injury and property damage, is \$1,395,000. No payments have been made to any director or officer, nor are any claims now pending, under this or any previous similar policy.

# Consolidated Statement of Income

In thousands (except per-share figures)

	Years Ended December 31,	1976	1975
OPERATING REVENUES—98% or More Electric (Notes 1 and 2)		\$1,868,620	\$1,637,930
OPERATING EXPENSES:			
Operation—Fuel for Electric Generation (Note 1)		752,758	698,244
Operation—Other		192,400	183,706
Maintenance (Note 1)		103,095	81,974
Depreciation (Note 1)		181,542	156,435
Taxes, Other Than Income Taxes:			
Real and Personal Property		47,976	42,401
State Gross Sales, Excise, Franchise and Miscellaneous State and Local		51,096	43,926
Social Security—Federal and State		6,648	5,759
State Income Taxes		618	848
Federal Income Taxes (Notes 1 and 3)		50,640	13,211
Total Operating Expenses		1,386,773	1,226,504
OPERATING INCOME		481,847	411,426
OTHER INCOME AND DEDUCTIONS:			
Allowance for Funds Used During Construction (Note 1)		68,690	82,144
Miscellaneous Nonoperating Income Less Deductions (Notes 1 and 3)		6,247	3,021
Total Other Income and Deductions		74,937	85,165
INCOME BEFORE INTEREST CHARGES		556,784	496,591
INTEREST CHARGES:			
Long-term Debt		250,336	219,276
Short-term Debt and Miscellaneous		20,969	42,594
Total Interest Charges		271,305	261,870
CONSOLIDATED INCOME Before Preferred Stock Dividend Requirements of Subsidiaries and Cumulative Effect of Accounting Changes		285,479	234,721
Deduct Preferred Stock Dividend Requirement of Subsidiaries		43,758	38,459
CONSOLIDATED INCOME Before Cumulative Effect of Accounting Changes		241,721	196,262
Non-recurring Cumulative Effect of Accounting Changes (net of applicable taxes)		—	—
CONSOLIDATED NET INCOME, APPLICABLE TO COMMON STOCK		\$ 241,721	\$ 196,262
EARNINGS AND DIVIDENDS PER SHARE OF COMMON STOCK*:			
Consolidated Income Before Cumulative Effect of Accounting Changes		\$2.66	\$2.44
Non-recurring Cumulative Effect of Accounting Changes		—	—
CONSOLIDATED EARNINGS		\$2.66	\$2.44
CASH DIVIDENDS PAID (annual rate at December 31, 1976: \$2.06)		\$2.01½	\$2.00
AVERAGE NUMBER OF SHARES OUTSTANDING (in thousands)		91,005	80,417

\*Earnings per share for the respective years are based on the average number of shares outstanding, adjusted (where applicable) for a 2½% stock dividend in 1967. Dividends per share are based on the actual number of shares outstanding, adjusted (where applicable) for such stock dividend.  
See Notes to Financial Statements on pages 45-49.

AMERICAN ELECTRIC POWER COMPANY, INC. and Subsidiary Companies

1974	1973	1972	1971	1970	1969	1968	1967	1966
\$1,332,851	\$979,380	\$873,599	\$764,435	\$683,119	\$627,909	\$580,177	\$523,676	\$488,209
570,759	289,048	233,029	177,273	139,613	110,374	96,334	87,628	78,321
183,371	164,412	157,311	165,860	150,926	147,266	131,331	102,413	96,783
87,181	74,000	68,845	57,441	56,518	52,849	46,479	41,190	35,622
128,066	115,324	106,974	93,181	84,149	76,468	71,479	67,113	61,161
32,699	30,815	43,581	35,199	33,207	33,936	29,694	27,956	26,161
34,613	27,769	26,344	23,444	20,601	17,760	15,900	14,747	13,820
5,471	4,665	3,696	3,155	2,909	2,795	2,416	2,045	1,940
304	225	382	275	185	25	377	230	244
(12,718)	(14,612)	(5,775)	6,290	16,280	28,487	45,976	47,143	55,164
1,029,746	691,646	634,387	562,118	504,388	469,960	439,986	390,465	369,216
303,105	287,734	239,212	202,317	178,731	157,949	140,191	133,211	118,993
118,732	87,844	65,286	56,927	43,865	30,230	16,527	7,374	7,384
3,720	10,420	4,979	5,077	5,974	1,804	4,049	1,401	3,911
122,452	98,264	70,265	62,004	49,839	32,034	20,576	8,775	11,295
425,557	385,998	309,477	264,321	228,570	189,983	160,767	141,986	130,288
209,783	162,324	126,556	104,058	90,524	66,950	50,445	39,789	37,464
48,977	24,156	14,611	18,531	16,825	12,362	6,152	3,793	805
258,760	186,480	141,167	122,589	107,349	79,312	56,597	43,582	38,269
166,797	199,518	168,310	141,732	121,221	110,671	104,170	98,404	92,019
30,782	25,376	20,414	9,268	4,335	4,342	4,349	4,290	4,293
136,015	174,142	147,896	132,464	116,886	106,329	99,821	94,114	87,726
41,123	—	—	—	—	—	—	—	—
\$ 177,138	\$174,142	\$147,896	\$132,464	\$116,886	\$106,329	\$ 99,821	\$ 94,114	\$ 87,726
\$1.92	\$2.72	\$2.49	\$2.38	\$2.30	\$2.20	\$2.10	\$2.00	\$1.90
.58	—	—	—	—	—	—	—	—
\$2.50	\$2.72	\$2.49	\$2.38	\$2.30	\$2.20	\$2.10	\$2.00	\$1.90
\$1.97½	\$1.85	\$1.76½	\$1.70	\$1.65½	\$1.59½	\$1.53½	\$1.46	\$1.32
70,873	64,078	59,500	55,560	50,833	48,300	47,449	47,149	46,249

Amounts for years prior to 1975, included for comparative purposes, have been restated to reflect certain revenue refunds.

# Consolidated Balance Sheet

In thousands

	December 31,	1976	1975
<b>Assets and Other Debits</b>			
<b>UTILITY PLANT (Note 1):</b>			
Production . . . . .		\$3,193,931	\$3,168,282
Transmission . . . . .		1,396,366	1,354,367
Distribution . . . . .		1,141,032	1,055,124
General and Miscellaneous . . . . .		346,831	329,213
Construction Work In Progress . . . . .		1,060,698	737,977
Total Utility Plant . . . . .		7,138,858	6,644,963
Less Accumulated Provisions for Depreciation and Depletion (Note 1) . . . . .		1,464,989	1,310,810
Utility Plant, less Provisions . . . . .		5,673,869	5,334,153
<b>EXCESS OF COST OF INVESTMENTS in Subsidiaries</b>			
Over Book Value at Dates of Acquisition (not being amortized) . . . . .		48,428	48,428
OTHER PROPERTY AND INVESTMENTS (Notes 1 and 4) . . . . .		224,378	217,388
<b>CURRENT ASSETS:</b>			
Cash (see page 43 and Note 5) . . . . .		195,688	166,573
Temporary Cash Investments (at cost which approximates market) . . . . .		66,637	67,937
Accounts Receivable—Largely from Customers (less provisions for uncollectibles) . . . . .		155,831	138,834
Materials and Supplies (at average cost or less):			
Fuel . . . . .		176,279	155,774
Construction and Operation Materials and Supplies . . . . .		84,789	77,335
Accrued Utility Revenues . . . . .		59,054	47,482
Prepayments and Other Current Assets . . . . .		15,143	23,662
Total Current Assets . . . . .		753,421	677,597
<b>DEFERRED DEBITS:</b>			
Property Taxes . . . . .		54,429	51,927
Deferred Collection of Fuel Costs (Notes 1 and 2) . . . . .		28,802	26,873
Other Deferred Debits (Notes 4 and 8) . . . . .		96,132	52,837
Total Deferred Debits . . . . .		179,363	131,637
Totals . . . . .		\$6,879,459	\$6,409,203
<b>Liabilities and Other Credits</b>			
LONG-TERM DEBT (less portion due within one year) (see pages 42-43) . . . . .		\$3,352,207	\$3,088,223
PREFERRED STOCKS of Subsidiaries (including premiums) (see page 44) . . . . .		536,718	536,758
COMMON STOCK of American Electric Power Company, Inc. Par Value \$6.50 (Note 6)* . . . . .		604,500	539,500
STOCK DIVIDEND DECLARED . . . . .		—	—
PREMIUM ON COMMON STOCK (Note 6) . . . . .		804,845	673,845
OTHER PAID-IN CAPITAL . . . . .		581	565
RETAINED EARNINGS (Notes 1 and 7) . . . . .		554,617	495,311
<b>CURRENT LIABILITIES:</b>			
Long-term Debt Due Within One Year (see page 43) . . . . .		121,647	118,331
Short-term Debt (including Sinking Fund Requirements) (Note 5) . . . . .		254,119	344,520
Accounts Payable . . . . .		146,790	118,104
Taxes Accrued . . . . .		118,981	110,460
Interest Accrued . . . . .		64,424	64,538
Revenue Refunds Accrued . . . . .		1,856	44,308
Other Current Liabilities . . . . .		71,936	77,032
Total Current Liabilities . . . . .		779,753	877,293
<b>DEFERRED CREDITS AND OPERATING RESERVES:</b>			
Property Taxes . . . . .		—	12,257
Deferred Income Taxes (Note 1):			
Accelerated Amortization . . . . .		59,399	66,284
Liberalized Depreciation . . . . .		142,067	96,779
(Certain amounts recorded in these accounts, related to reductions in Federal income taxes, resulting from accelerated amortization and liberalized depreciation, are invested in the business and are recorded by various subsidiaries in accounts maintained pursuant to state regulatory requirements as restricted earned surplus.)			
Other . . . . .		3,152	2,102
Deferred Investment Tax Credits . . . . .		17,545	4,597
Other Deferred Credits and Operating Reserves . . . . .		24,075	15,689
Total Deferred Credits and Operating Reserves . . . . .		246,238	197,708
Totals . . . . .		\$6,879,459	\$6,409,203
* Authorized Shares . . . . .		125,000	100,000
Outstanding Shares . . . . .		93,000	83,000
See Notes to Financial Statements on pages 45-49.			



AMERICAN ELECTRIC POWER COMPANY, INC. and Subsidiary Companies

1974	1973	1972	1971	1970	1969	1968	1967	1966
\$2,358,575	\$2,026,128	\$1,754,482	\$1,613,678	\$1,268,421	\$1,253,964	\$1,132,776	\$1,054,881	\$ 933,298
1,291,258	1,156,302	1,061,450	944,556	807,501	692,720	595,204	557,635	523,238
1,012,809	942,746	877,044	818,883	766,276	723,226	684,144	635,731	601,375
292,864	212,560	202,509	197,764	182,319	149,609	142,930	110,213	143,933
1,265,627	1,259,307	1,044,624	803,568	783,431	509,926	337,379	273,379	200,450
6,221,133	5,597,043	4,940,109	4,378,449	3,807,948	3,329,445	2,892,433	2,631,839	2,402,294
1,189,186	1,117,911	1,028,002	957,602	888,860	833,827	778,728	723,207	652,030
5,031,947	4,479,132	3,912,107	3,420,847	2,919,088	2,495,618	2,113,705	1,908,632	1,750,264
48,428	45,296	45,295	45,286	45,114	45,113	44,463	31,658	31,658
127,541	101,685	84,525	81,441	72,498	58,176	46,061	63,178	36,283
94,716	124,974	99,816	56,807	46,322	45,518	42,033	34,505	50,098
36,872	22,012	57,380	17,100	9,652	16,995	26,615	—	25,528
169,088	105,717	87,466	75,451	60,897	57,097	50,353	45,920	41,792
174,475	74,584	74,503	54,216	38,034	24,942	25,543	24,561	14,035
66,332	50,587	44,835	42,174	38,989	36,636	33,647	30,085	24,315
43,552	—	—	—	—	—	—	—	—
17,405	15,275	8,885	9,032	8,082	4,409	4,357	3,919	3,482
602,440	393,149	372,885	254,780	201,976	185,597	182,548	138,990	159,250
46,394	37,809	—	—	—	—	—	—	—
49,846	—	—	—	—	—	—	—	—
42,079	28,675	30,540	17,630	14,882	13,555	10,603	10,256	7,355
138,319	66,484	30,540	17,630	14,882	13,555	10,603	10,256	7,355
\$5,948,675	\$5,085,746	\$4,445,352	\$3,819,984	\$3,253,558	\$2,798,059	\$2,397,380	\$2,152,714	\$1,984,810
\$2,838,503	\$2,535,212	\$2,280,107	\$1,851,260	\$1,649,829	\$1,489,736	\$1,199,462	\$1,049,625	\$ 964,422
467,125	422,119	362,320	257,063	101,729	101,898	102,023	100,674	100,782
474,500	429,000	386,750	386,750	351,000	325,000	308,418	308,418	293,286
—	—	—	—	—	—	—	—	41,737
583,696	466,446	352,712	352,712	249,312	179,172	120,861	120,861	47,328
416	414	320	291	234	167	131	76	56
463,231	428,081	372,906	330,184	292,642	260,206	231,233	204,246	180,859
—	—	—	—	—	—	—	—	—
539,143	319,984	248,255	251,810	242,246	124,459	127,662	52,435	64,775
117,984	86,985	93,863	85,776	85,885	57,856	49,403	57,280	24,458
96,890	80,467	93,280	78,746	73,914	67,979	69,001	68,076	75,424
60,677	48,231	32,055	31,359	24,942	16,567	11,327	9,990	7,448
32,641	21,659	11,153	2,642	—	—	—	—	—
79,890	57,720	58,731	39,818	29,792	20,381	20,108	19,697	18,221
927,225	615,046	537,337	490,151	456,779	287,242	277,501	207,478	190,326
24,514	36,771	—	—	—	—	—	—	—
73,008	79,776	87,174	93,966	100,913	107,946	114,966	121,811	128,738
70,396	64,166	59,314	54,020	48,661	43,892	40,563	36,520	34,850
11,963	—	—	—	—	—	—	—	—
1,485	2,928	2,644	1,439	534	549	455	—	—
12,613	5,787	3,768	2,148	1,925	2,251	1,767	3,005	2,426
193,979	189,428	152,900	151,573	152,033	154,638	157,751	161,336	166,014
\$5,948,675	\$5,085,746	\$4,445,352	\$3,819,984	\$3,253,558	\$2,798,059	\$2,397,380	\$2,152,714	\$1,984,810
100,000	80,000	80,000	70,000	65,000	65,000	65,000	50,000	50,000
73,000	66,000	59,500	59,500	54,000	50,000	47,449	47,449	45,121

Amounts for years prior to 1975, included for comparative purposes, have been restated to reflect certain revenue refunds.

# Consolidated Statement of Sources of Funds for Plant and Property Additions

In thousands

Years Ended December 31,	1976	1975
<b>FUNDS FROM OPERATIONS:</b>		
Consolidated Income Before Cumulative Effect of Accounting Changes . . . . .	\$241,721	\$196,262
Principal Non-fund Charges (Credits) to Income:		
Depreciation . . . . .	184,503	159,103
Provision for Deferred Income Taxes (net) . . . . .	38,851	9,798
Allowance for Funds Used During Construction . . . . .	(68,690)	(82,144)
Other (net) . . . . .	2,651	(2,680)
Total Before Cumulative Effect of Accounting Changes	399,036	280,339
Non-recurring Cumulative Effect of Accounting Changes (before deferred income taxes) . . . . .	—	—
Total Funds from Operations . . . . .	399,036	280,339
<b>FUNDS FROM OUTSIDE SOURCES:</b>		
Long-Term Debt (net proceeds) . . . . .	423,568	438,126
Preferred Stocks of Subsidiaries . . . . .	—	66,412
Common Stock . . . . .	196,000	155,149
Short-Term Debt (net) . . . . .	—	—
Amounts Received in Settlement of Antitrust Suits . . . . .	—	—
Total . . . . .	619,568	659,687
Less—Retirement of Securities and Short-Term Debt:		
Long-Term Debt and Preferred Stock . . . . .	155,339	69,204
Short-Term Debt (net) . . . . .	89,646	194,593
Net Funds from Outside Sources . . . . .	374,583	395,890
DIVIDENDS ON COMMON STOCK . . . . .	(182,395)	(161,000)
SALES OF PROPERTY . . . . .	117,928	9,739
DEFERRED COLLECTION OF FUEL COSTS . . . . .	(1,929)	22,973
OTHER CHANGES (NET) . . . . .	(2,774)	(12,304)
DECREASE (INCREASE) IN WORKING CAPITAL (excluding Short-Term Debt and Long-Term Debt Due Within One Year) (a) . . . . .	(86,279)	(48,797)
Total . . . . .	\$618,170	\$486,840
<b>PLANT AND PROPERTY ADDITIONS:</b>		
Gross Additions to Utility Plant (less nuclear fuel) . . . . .	\$532,416	\$445,508
Gross Additions to Nuclear Fuel . . . . .	19,015	6,056
Gross Other Additions . . . . .	135,429	117,420
Total Gross Additions . . . . .	686,860	568,984
Allowance for Funds Used During Construction . . . . .	(68,690)	(82,144)
Total . . . . .	\$618,170	\$486,840
(a) DECREASE (INCREASE) IN WORKING CAPITAL (excluding Short-Term Debt and Long-Term Debt Due Within One Year):		
Cash and Cash Items . . . . .	\$(27,815)	\$(102,922)
Accounts Receivable . . . . .	(16,997)	30,254
Materials and Supplies . . . . .	(27,959)	7,698
Accounts Payable . . . . .	28,686	120
Revenue Refunds Accrued . . . . .	(42,452)	11,667
Taxes Accrued . . . . .	8,521	13,570
Other (net) . . . . .	(8,263)	(9,184)
	\$(86,279)	\$ (48,797)

See Notes to Financial Statements on pages 45-49.

AMERICAN ELECTRIC POWER COMPANY, INC. and Subsidiary Companies

1974	1973	1972	1971	1970	1969	1968	1967	1966
\$136,015	\$174,142	\$147,896	\$132,464	\$116,886	\$106,329	\$ 99,821	\$ 94,114	\$ 87,726
129,439	116,074	107,823	93,995	84,806	77,090	72,207	68,287	62,313
8,306	(2,546)	(1,498)	(1,588)	(2,264)	(3,691)	(4,264)	(5,257)	(4,851)
(118,732)	(87,844)	(65,286)	(56,927)	(43,865)	(30,230)	(16,527)	(7,374)	(7,384)
(19,935)	(14,334)	(2,047)	(2,612)	(4,867)	(530)	(3,498)	(271)	(244)
135,093	185,492	186,888	165,332	150,696	148,968	147,739	149,499	137,560
44,242	—	—	—	—	—	—	—	—
179,335	185,492	186,888	165,332	150,696	148,968	147,739	149,499	137,560
370,551	280,837	556,875	235,024	245,167	314,946	202,742	87,542	153,863
45,016	60,135	105,343	155,497	—	—	—	—	—
162,750	156,000	—	139,150	96,140	74,893	—	46,928	—
219,159	72,106	—	9,950	117,969	—	72,900	—	14,600
—	—	—	—	314	1,148	1,265	1,752	2,977
797,476	569,078	662,218	539,621	459,590	390,987	276,907	136,222	171,440
64,485	18,821	123,783	28,726	80,170	23,615	57,632	2,126	43,604
—	—	3,555	—	—	3,459	—	12,100	—
732,991	550,257	534,880	510,895	379,420	363,913	219,275	121,996	127,836
(140,850)	(119,176)	(104,423)	(94,733)	(84,450)	(76,732)	(72,834)	(68,843)	(60,913)
24,006	19,653	10,661	25,404	4,549	1,063	67,743	—	—
(49,846)	—	—	—	—	—	—	—	—
(17,867)	3,389	(10,260)	(3,859)	(11,097)	(13,066)	(10,779)	(25,196)	(2,256)
(116,271)	(14,284)	(67,364)	(28,996)	35,371	9,895	(48,762)	49,752	(4,341)
\$611,498	\$625,331	\$550,382	\$574,043	\$474,489	\$434,041	\$302,382	\$227,208	\$197,886
\$693,579	\$685,554	\$606,924	\$607,291	\$500,715	\$461,695	\$318,909	\$234,582	\$205,270
5,959	866	863	16,643	10,192	2,576	—	—	—
30,692	26,755	7,881	7,036	7,447	—	—	—	—
730,230	713,175	615,668	630,970	518,354	464,271	318,909	234,582	205,270
(118,732)	(87,844)	(65,286)	(56,927)	(43,865)	(30,230)	(16,527)	(7,374)	(7,384)
\$611,498	\$625,331	\$550,382	\$574,043	\$474,489	\$434,041	\$302,382	\$227,208	\$197,886
\$ 15,398	\$ 10,210	\$ (83,289)	\$ (17,933)	\$ 6,539	\$6,135	\$ (34,143)	\$41,121	\$ (5,760)
(63,371)	(18,251)	(12,015)	(14,554)	(3,800)	(6,744)	(4,433)	(4,128)	(4,088)
(115,636)	(5,833)	(22,948)	(19,367)	(15,445)	(2,388)	(4,544)	(16,296)	(6,408)
30,999	(6,878)	8,087	(109)	28,029	8,453	(7,877)	32,822	6,614
10,982	10,506	8,511	2,642	—	—	—	—	—
16,423	(12,813)	14,534	4,832	5,935	(1,022)	925	(7,348)	5,805
(11,066)	8,775	19,756	15,493	14,113	5,461	1,310	3,581	(504)
\$ (116,271)	\$ (14,284)	\$ (67,364)	\$ (28,996)	\$35,371	\$9,895	\$ (48,762)	\$49,752	\$ (4,341)

Amounts for years prior to 1975, included for comparative purposes, have been restated to reflect certain revenue refunds.

# Consolidated Statement of Retained Earnings

In thousands

	Years Ended December 31,	1976	1975
BALANCE AT BEGINNING OF YEAR (Notes 1 and 2) . . . . .		\$495,311	\$463,231
CONSOLIDATED NET INCOME, APPLICABLE TO COMMON STOCK . . . . .		241,721	196,262
		737,032	659,493
DEDUCTIONS:			
Cash Dividends Declared on Common Stock . . . . .		182,395	161,000
Capital Stock Expense . . . . .		20	3,718
Other . . . . .		—	(536)
Total Deductions . . . . .		182,415	164,182
BALANCE AT END OF YEAR (Notes 1 and 7) . . . . .		\$554,617	\$495,311

See Notes to Financial Statements on pages 45-49.

## Schedule of Long-Term Debt Outstanding

In thousands

	December 31,	1976	1975		December 31,	1976	1975
<b>FIRST MORTGAGE BONDS(a):</b>				<b>INDIANA &amp; MICHIGAN POWER CO.</b>			
<b>APPALACHIAN POWER COMPANY</b>				10 7/8 % Series due 1984 (b) . . . . .	\$ 75,000	\$ 75,000	
8 5/8 % Series due 1976 . . . . .	\$ —	\$ 70,000		Unamortized Debt Discount . . . . .	(253)	(287)	
3 1/8 % Series due 1977 . . . . .	26,586	26,586		Total . . . . .	\$ 74,747	\$ 74,713	
7 1/4 % Series due 1979 . . . . .	35,000	35,000					
2 7/8 % Series due 1980 . . . . .	23,874	23,874		<b>KENTUCKY POWER COMPANY</b>			
3 3/4 % Series due 1981 . . . . .	15,578	15,578		3 % Series due 1979 . . . . .	\$ 9,868	\$ 9,868	
3 1/2 % Series due 1982 . . . . .	15,192	15,192		7 1/8 % Series due 1980 . . . . .	50,000	50,000	
11 % Series due 1982 . . . . .	50,000	50,000		5 1/8 % Series due 1996 . . . . .	29,436	29,436	
3 1/2 % Series due 1983 . . . . .	17,564	17,564		7 7/8 % Series due 2002 . . . . .	45,000	45,000	
11 1/8 % Series due 1983 . . . . .	40,000	40,000		8 7/8 % Series due 2006 . . . . .	30,000	—	
10 1/2 % Series due 1984 . . . . .	60,000	60,000		Unamortized Debt Premium—Net . . . . .	680	537	
4 5/8 % Series due 1987 . . . . .	25,970	25,970		Total . . . . .	\$ 164,984	\$ 134,841	
4 % Series due 1988 . . . . .	22,287	22,287					
4 3/8 % Series due 1992 . . . . .	22,697	22,697		<b>OHIO POWER COMPANY</b>			
10 1/8 % Series due 1995 . . . . .	20,000	20,000		7 1/4 % Series due 1976 . . . . .	\$ —	\$ 40,000	
7 1/2 % Series due 1998 . . . . .	45,000	45,000		6 1/2 % Series due 1977 . . . . .	40,000	40,000	
8 1/2 % Series due 1999 . . . . .	60,000	60,000		3 % Series due 1978 . . . . .	38,232	38,232	
7 5/8 % Series due 2002 . . . . .	50,000	50,000		6 5/8 % Series due 1979 . . . . .	40,000	40,000	
7 1/2 % Series due 2002 . . . . .	70,000	70,000		3 3/8 % Series due 1981 . . . . .	13,647	13,647	
8 1/8 % Series due 2003 . . . . .	50,000	50,000		12 1/8 % Series due 1981 . . . . .	30,000	30,000	
8 1/2 % Series due 2004 . . . . .	50,000	50,000		10 1/8 % Series due 1982 . . . . .	100,000	100,000	
9 3/4 % Series due 2006 . . . . .	60,000	—		3 3/8 % Series due 1983 . . . . .	17,394	17,394	
9 1/2 % Series due 2006 . . . . .	70,000	—		10 1/4 % Series due 1983 . . . . .	25,000	25,000	
Unamortized Debt Premium—Net . . . . .	266	617		3 1/8 % Series due 1984 . . . . .	18,224	18,224	
Total . . . . .	\$ 830,014	\$ 770,365		3 3/8 % Series due 1985 . . . . .	15,106	15,106	
<b>INDIANA &amp; MICHIGAN ELECTRIC CO.</b>				4 1/4 % Series due 1986 . . . . .	23,476	23,476	
3 % Series due 1978 . . . . .	\$ 24,173	\$ 24,173		4 7/8 % Series due 1987 . . . . .	21,958	21,958	
6 1/2 % Series due 1978 . . . . .	30,000	30,000		4 5/8 % Series due 1989 . . . . .	22,194	22,194	
2 3/4 % Series due 1980 . . . . .	18,015	18,015		9 % Series due 1994 . . . . .	80,000	80,000	
3 1/4 % Series due 1982 . . . . .	16,046	16,046		5 % Series due 1996 . . . . .	48,121	48,121	
10 1/4 % Series due 1982 . . . . .	70,000	70,000		6 1/2 % Series due 1997 . . . . .	49,870	49,870	
3 5/8 % Series due 1983 . . . . .	13,762	13,762		6 3/4 % Series due 1998 . . . . .	59,802	59,802	
11 % Series due 1983 . . . . .	60,000	60,000		7 3/4 % Series due 1999 . . . . .	70,000	70,000	
3 1/8 % Series due 1984 . . . . .	15,082	15,082		7 5/8 % Series due 2002 . . . . .	25,000	25,000	
10 % Series due 1985 (b) . . . . .	15,000	15,000		7 3/4 % Series due 2002 . . . . .	25,000	25,000	
3 7/8 % Series due 1988 . . . . .	22,974	22,974		8 3/8 % Series due 2003 . . . . .	40,000	40,000	
4 3/4 % Series due 1988 . . . . .	17,557	17,557		10 % Series due 2006 . . . . .	80,000	—	
4 3/8 % Series due 1993 . . . . .	42,902	42,902		9 1/4 % Series due 2006 . . . . .	80,000	—	
7 % Series due 1998 . . . . .	35,000	35,000		2 7/8 % Series due 1977 (prior lien)	3,871	3,871	
8 3/8 % Series due 2000 . . . . .	50,000	50,000		Unamortized Debt Premium—Net . . . . .	976	1,661	
8 3/8 % Series due 2003 . . . . .	40,000	40,000		Total . . . . .	\$ 967,871	\$ 848,556	
Unamortized Debt Discount—Net . . . . .	(94)	(146)					
Total . . . . .	\$ 470,417	\$ 470,365					

AMERICAN ELECTRIC POWER COMPANY, INC. and Subsidiary Companies

December 31,	1976	1975	December 31,	1976	1975
<b>OHIO ELECTRIC COMPANY</b>			<b>AMERICAN ELECTRIC POWER CO.</b>		
11 % Series due 1983(b) . . .	\$ 75,000	\$ 75,000	3% % due 1977 . . . . .	\$ 244	\$ 2,227
Unamortized Debt Discount . . .	(549)	(632)	Less Sinking Fund Requirements .	(244)	(1,027)
Total . . . . .	\$ 74,451	\$ 74,368	Total . . . . .	\$ —	\$ 1,200
<b>MICHIGAN POWER COMPANY</b>			Total Sinking Fund Debentures . .	\$ 127,033	\$ 134,251
2% % Series due 1976 . . . . .	\$ —	\$ 3,500	<b>INSTALLMENT PURCHASE CONTRACTS(a)(c):</b>		
3½ % Series due 1979 . . . . .	300	300	<b>APPALACHIAN POWER COMPANY</b>		
2% % Series due 1980 . . . . .	500	500	Weighted Average Rates of 8.4% (1976) and 8.9% (1975) Due 1979 Through 2006 . . . . .	\$ 71,000	\$ 41,000
3½ % Series due 1983 . . . . .	750	750	Unamortized Debt Discount . . .	(1,167)	—
Total . . . . .	\$ 1,550	\$ 5,050	Total . . . . .	\$ 69,833	\$ 41,000
Total First Mortgage Bonds . . .	\$2,584,034	\$2,378,258	<b>INDIANA &amp; MICHIGAN ELECTRIC CO.</b>		
Less First Mortgage Due Within One Year .	(75,707)	(113,500)	8½ % due 2006 . . . . .	\$ 25,000	\$ —
Total First Mortgage Bonds (less portion due within one year) . .	\$2,508,327	\$2,264,758	Unamortized Debt Discount . . .	(699)	—
<b>SINKING FUND DEBENTURES(a):</b>			Total . . . . .	\$ 24,301	\$ —
<b>APPALACHIAN POWER COMPANY</b>			<b>OHIO POWER COMPANY</b>		
4% % due 1992 . . . . .	\$ 13,122	\$ 13,431	8¼ % due 2006 . . . . .	\$ 50,000	\$ —
6 % due 1996 . . . . .	23,298	25,294	Unamortized Debt Discount . . .	(1,234)	—
Unamortized Debt Premium . . .	208	219	Total . . . . .	\$ 48,766	\$ —
Less Sinking Fund Requirements .	(122)	(94)	Total Installment Purchase Contracts	\$ 142,900	\$ 41,000
Total . . . . .	\$ 36,506	\$ 38,850	<b>LONG-TERM DEBT OUTSTANDING:</b>		
<b>INDIANA &amp; MICHIGAN ELECTRIC CO.</b>			First Mortgage Bonds (less portion due within one year)	\$2,508,327	\$2,264,758
5½ % due 1986 . . . . .	\$ 13,392	\$ 13,555	Sinking Fund Debentures . . .	127,033	134,251
7¼ % due 1998 . . . . .	13,168	13,552	Notes Payable to Banks (less portion due within one year)(a)(d)(e) . . . . .	559,000	630,000
Unamortized Debt Premium . . .	84	93	Installment Purchase Contracts .	142,900	41,000
Total . . . . .	\$ 26,644	\$ 27,200	Other Long-Term Debt (less portion due within one year)(f) .	14,947	18,214
<b>OHIO POWER COMPANY</b>			Total Long-Term Debt Outstanding (less portion due within one year)	\$3,352,207	\$3,088,223
5½ % due 1996 . . . . .	\$ 33,316	\$ 34,648			
6% % due 1997 . . . . .	16,960	17,973			
7% % due 1999 . . . . .	13,085	13,823			
Unamortized Debt Premium . . .	522	557			
Total . . . . .	\$ 63,883	\$ 67,001			

(a) Maturities of first mortgage bonds, notes payable to banks and other long-term debt, and debenture and first mortgage bond sinking fund and installment purchase contract payments aggregate \$122,013,000 in 1977, \$103,449,000 in 1978, \$366,921,000 in 1979, \$410,990,000 in 1980 and \$67,911,000 in 1981. Prior to December 31, 1976, \$8,415,000 principal amount of debentures and bonds had been reacquired in anticipation of future sinking fund requirements. The companies generally have the non-cumulative option to redeem additional amounts equal to the annual sinking fund requirements.

(b) Annual sinking fund payments are required.

(c) Sinking fund payments will be required in certain years subsequent to 1989.

(d) In connection with certain long-term notes payable to banks aggregating \$570,000,000 at December 31, 1976, informal agreements with the banks have been

made to maintain average compensating balances (included in cash in the consolidated balance sheet) equal to 15% of the notes outstanding on an average basis, or such smaller amount as the banks consider appropriate in view of other banking relationships, or in lieu thereof, to pay a fee on any draw-down of the compensating balances based on the approximate effective interest cost of the related notes, assuming the full compensating balance had been maintained in the appropriate amount. At December 31, 1976 and 1975 the compensating balances under these arrangements were approximately \$85,500,000 and \$90,000,000, respectively.

(e) The interest rates on notes payable to banks at December 31, 1976 range from 6¼ % to 8¼ %. The rates charged by the banks depend upon the prime commercial rate plus fractional percentages.

(f) Other long-term debt is due 1976 to 1985; interest rates thereon range between 6% and 8% per annum.

## Schedule of Preferred Stocks of Subsidiaries

December 31,	1976		1975			
Cumulative, Par Value \$100(a)	Shares Outstanding	Amount (In thousands)	Shares Outstanding	Amount (In thousands)	Current Call Price(b)	Redemption Restricted Prior to
<b>APPALACHIAN POWER COMPANY</b>						
4½ % Series . . . . .	300,000	\$ 30,000	300,000	\$ 30,000	\$110	
4.50% Series (with sinking fund) (c) . . . . .	29,307	2,930	29,643	2,964	102	
8.12% Series . . . . .	300,000	30,000	300,000	30,000	107.59	
7.40% Series . . . . .	250,000	25,000	250,000	25,000	106.92	
8.52% Series . . . . .	200,000	20,000	200,000	20,000	109.52	Mar. 1, 1979
Total Premiums . . . . .		1,475		1,475		
	1,079,307	109,405	1,079,643	109,439		
<b>INDIANA &amp; MICHIGAN ELECTRIC COMPANY</b>						
4½ % Series . . . . .	120,000	12,000	120,000	12,000	106.125	
4.56% Series . . . . .	60,000	6,000	60,000	6,000	102	
4.12% Series . . . . .	40,000	4,000	40,000	4,000	102.728	
7.08% Series . . . . .	300,000	30,000	300,000	30,000	106.45	
7.76% Series . . . . .	350,000	35,000	350,000	35,000	107.32	
8.68% Series . . . . .	300,000	30,000	300,000	30,000	109.61	Dec. 1, 1978
12 % Series (with sinking fund) (c) . . . . .	300,000	30,000	300,000	30,000	112	Sep. 1, 1980
Total Premiums . . . . .		381		381		
Total . . . . .	1,470,000	147,381	1,470,000	147,381		
<b>MICHIGAN POWER COMPANY</b>						
4.40% Series . . . . .	14,000	1,400	14,000	1,400	102	
4.90% Series (with sinking fund) (c) . . . . .	1,000	100	1,062	106	100	
Total Premiums . . . . .		11		11		
Total . . . . .	15,000	1,511	15,062	1,517		
<b>OHIO POWER COMPANY</b>						
4½ % Series . . . . .	202,403	20,240	202,403	20,240	110	
4.40% Series . . . . .	100,000	10,000	100,000	10,000	104	
4.08% Series . . . . .	50,000	5,000	50,000	5,000	103	
4.20% Series . . . . .	60,000	6,000	60,000	6,000	103.20	
8.04% Series . . . . .	150,000	15,000	150,000	15,000	107.80	
7.72% Series . . . . .	100,000	10,000	100,000	10,000	107.37	
7.60% Series . . . . .	350,000	35,000	350,000	35,000	107.20	
7½ % Series . . . . .	350,000	35,000	350,000	35,000	108.95	Apr. 1, 1977
7.76% Series . . . . .	450,000	45,000	450,000	45,000	109.20	Oct. 1, 1977
8.48% Series . . . . .	300,000	30,000	300,000	30,000	110.03	Aug. 1, 1978
14 % Series (with sinking fund) (c) . . . . .	250,000	25,000	250,000	25,000	115.14	Mar. 1, 1980
14 % Series "A" (with sinking fund) (c) . . . . .	400,000	40,000	400,000	40,000	114	Jun. 1, 1980
Total Premiums . . . . .		2,181		2,181		
Total . . . . .	2,762,403	278,421	2,762,403	278,421		
<b>TOTAL PREFERRED STOCKS AND PREMIUMS . . . . .</b>	<b>5,326,710</b>	<b>\$536,718</b>	<b>5,327,108</b>	<b>\$536,758</b>		

(a) In 1976 shareholders of Indiana & Michigan Electric Company authorized the issuance of up to 4,000,000 shares of Cumulative Preferred Stock, par value \$25, which will rank equally with the Cumulative Preferred Stock, par value \$100. In March 1977 shareholders of Ohio Power Company will vote on a proposal to cancel all authorized unissued shares of voting Cumulative Preferred Stock, par value \$100, and to authorize in their place 4,000,000 shares of non-voting Cumulative Preferred Stock, par value \$25, and 1,000,000 shares of non-voting Cumulative Preferred Stock, par value \$100.

(b) Callable, at the option of the subsidiaries, at the prices indicated plus accrued dividends.

(c) Shares outstanding and related amounts are stated net of applicable retirements through sinking funds (generally at par) and reacquisitions of shares in anticipation of future requirements.

## Notes to Financial Statements

### 1. SIGNIFICANT ACCOUNTING POLICIES:

The accounting and rates of the utility subsidiaries are subject in certain respects to the requirements of state regulatory bodies and in certain respects to the requirements of the Federal Power Commission (FPC). The consolidated statements, which include the accounts of subsidiaries in which the Company owns more than 50% of the voting power, have been prepared, with full reservation of legal rights, on the basis of the accounts which are maintained for FPC purposes. Such statements have been restated for 1974 and 1975 to reflect the effect of the revenue refunds described in Note 2.

#### Utility Plant, Other Property and Investments, Depreciation and Depletion

Utility plant is stated at original cost. Generally, the plant of the utility subsidiaries is subject to first mortgage liens.

The subsidiaries capitalize an allowance for funds used during construction, which is defined in the applicable regulatory systems of accounts as the net cost of borrowed funds used for construction purposes and a reasonable rate on other funds when so used. The rate used for such allowances was 8.5% except that two generating subsidiaries, during the construction of the generating units in 1976 and 1975, have capitalized an allowance based on their net monthly cost of borrowed funds and a rate of 8.5% on other funds. The FPC has adopted a revision, effective as of January 1, 1977, in the prescribed procedure under the Uniform System of Accounts for the determination of the maximum amount of, and accounting for, the allowance for funds used during construction. The Company believes that the effect, if any, of the revision upon the operating results of the System subsidiaries will not be materially adverse, although the computation of certain future earnings coverages under System subsidiaries' indenture and charter provisions may be adversely affected by the prescribed elimination from other income of a portion of the allowance.

The utility subsidiaries provide for depreciation on a straight-line basis over the estimated useful lives of the property. The current provisions are determined largely with the use of functional composite rates as follows:

#### FUNCTIONAL CLASS      COMPOSITE ANNUAL RATES

Production:	
Nuclear .....	4.0%
Steam .....	3.0% to 3.1%
Hydraulic .....	1.3% to 2.8%
Transmission .....	2.7% to 2.9%
Distribution .....	3.3% to 3.4%
General .....	3.3% to 3.5%

Depletion is provided for coal extracted from coal lands owned by certain subsidiaries at rates per ton based on estimated recoverable tonnage at cost (current rate averages approximately \$.07 per ton).

Income is charged with the costs of labor, materials, supervision and other expenses incurred in maintaining the properties in efficient operating condition. Property accounts are charged with the costs of betterments and major replacements of property, and the accumulated provisions for depreciation are charged with retirements, together with removal costs less salvage.

Other property and investments are generally stated at cost.

#### Income Taxes

Deferred income taxes, reduced where applicable by investment tax credits, are provided generally to the extent that such amounts are allowed for rate-making purposes.

In compliance with an order of the FPC, the utility operating subsidiaries which provide for deferred income taxes follow the Uniform System of Accounts prescribed by the FPC and report reductions in Federal income taxes resulting from accelerated amortization and liberalized depreciation (including ADR), as accumulated deferred income taxes, reserving all legal rights to take other appropriate action in the event that said order is found invalid or is modified. The accounting requirements of certain of the state regulatory bodies prescribe that certain of such accumulated deferred income tax amounts, substantially all of which are restricted for future Federal income taxes, be classified as earned surplus. Accordingly, financial statements reflecting the accounts maintained pursuant to state regulatory requirements would show a different amount of consolidated retained earnings.

The utility subsidiaries of the Company normalize the effect of tax reductions resulting from investment tax credits recognized in connection with accruals of current income taxes and provisions for deferred income taxes, except where authorized by state regulatory bodies to follow the "flow-through" method of accounting for tax reductions.

#### Pension Plan

The companies in the American Electric Power System have a trusteeship plan to provide pensions for all

their employees, subject to certain eligibility requirements. The plan has been contributory on the part of employees, but, effective January 1, 1977, required employee contributions will be phased out over a two-year period. The pension plan has also been amended to conform to the Employee Retirement Income Security Act of 1974. The increase in the cost of the plan as a result of these changes will not be material.

The cost of the plan for the years ended December 31, 1976 and 1975 was approximately \$11,300,000 and \$9,400,000, respectively. These amounts cover the cost of currently accruing benefits, together with interest on unfunded prior-service costs. During 1975 a change in the interest rate used in the actuarial computations, from 4 $\frac{7}{8}$  % to 5 $\frac{1}{4}$  %, substantially reduced unfunded prior-service costs. Unfunded prior-service costs were approximately \$6,600,000 at December 31, 1975, the date of the most recent actuarial study. The plan may be modified or terminated at any time, subject to limitations of labor agreements.

#### Operating Revenues and Fuel Costs

The utility subsidiaries accrue unbilled revenues for services rendered subsequent to the last billing cycle and prior to month-end. Except where state regulatory commissions have prescribed other methods to match costs and revenues, these subsidiaries have deferred incremental fuel costs until billed to customers in later months.

#### Other

Miscellaneous nonoperating income for 1976 and 1975 includes gains on certain long-term debt reacquired amounting to \$1,931,000 and \$1,992,000, respectively.

Debt discount or premium and debt expenses are being amortized over the lives of the related debt issues.

Certain amounts in prior years have been reclassified to conform with classifications used in the current year.

## 2. OPERATING REVENUES AND OPERATING EXPENSES:

Certain subsidiaries of the Company are collecting revenues subject to possible refund. The Company is acting as surety for its subsidiaries in certain of these matters.

In 1976 the Public Service Commission of West Virginia ordered one subsidiary to refund, with interest at 6%, revenues collected in 1974 and 1975 (through August 1975). Such revenues were refunded

to customers in September 1976. The effect of the restatement on the results of operations for 1974 and 1975 that were reported in the 1975 annual report to shareowners is as follows:

	YEARS ENDED DECEMBER 31,	
	1975	1974
(Thousands of Dollars)		
Increase (Decrease) in:		
Operating Revenues .....	\$(6,291)	\$(9,289)
Taxes, Other Than Income Taxes .....	(372)	(549)
Federal Income Taxes .....	(1,682)	(2,250)
Other Interest Expense .....	801	255
Consolidated Net Income .....	(5,038)	(6,745)
Earnings per Share .....	\$(.06)	\$(.09)

The above Federal income tax amounts represent the effects arising from the inclusion, in the consolidated Federal income tax return, of System companies which operate in state jurisdictions requiring normalization of investment tax credits.

Amounts collected by subsidiaries from rate increases placed into effect subject to possible refund aggregated approximately \$97,140,000 at December 31, 1976, exclusive of those amounts subsequently allowed or related to the restatement as described above, of which \$74,016,000 and \$18,398,000 relate to the years 1976 and 1975, respectively. Amounts subject to refund are not significant in consolidated amount for any year prior to 1975. If such revenues were to be required to be refunded currently, based on the income tax circumstances existing at December 31, 1976, consolidated net income for 1976 and 1975 would be reduced by approximately \$51,200,000 and \$13,000,000, respectively (\$.56 and \$.16 per share). However, the ultimate tax effect of any refund would be dependent upon the tax circumstances existing in the year in which the refund might be made.

Included in deferred fuel costs at December 31, 1976 is approximately \$26,890,000 (\$24,070,000 after deferred income taxes) representing amounts unrecovered when the deferral periods in the tariffs of certain subsidiaries were effectively reduced from two months to lesser periods or when fuel-adjustment clauses were otherwise modified. Of this amount, approximately \$6,990,000 is being recovered by two subsidiaries through supplemental billings in 1977 and 1978 and approximately \$11,330,000 will be recovered by another subsidiary through currently effective rates and is being amortized over a five-year period commencing December 1976. The subsidiaries have applied, or intend to apply, to the



respective regulatory commissions for recovery of the remainder of such costs through supplemental billings. The effect, if any, of any future disallowance of the recovery is not presently determinable.

### 3. FEDERAL INCOME TAXES:

The details of Federal income taxes, current and deferred, are as follows:

	YEARS ENDED DECEMBER 31,	
	1976	1975
(Thousands of Dollars)		
Charged (Credited) to Operating Expenses:		
Current Federal Income Taxes—Net ...	\$ (1,216)	\$ 301
Deferred Federal Income Taxes—Net ..	38,851	9,798
Investment Tax Credit Adjustments		
—Net .....	13,005	3,112
Total .....	50,640	13,211
Charged (Credited) to Other Income and Deductions .....	1,309	(106)
Total Federal Income Taxes .....	<u>\$51,949</u>	<u>\$13,105</u>

The Company's effective income tax rates were less than the Federal income tax statutory rates for the years 1976 and 1975. The following is a reconciliation of the differences between the amount of Federal income tax expense reported in the Consolidated Statement of Income and the amount of Federal income tax computed by multiplying income before Federal income tax by the statutory tax rate.

	YEARS ENDED DECEMBER 31,	
	1976	1975
(Thousands of Dollars)		
Consolidated Income Before Preferred Stock Dividend Requirements of Subsidiaries .....	\$285,479	\$234,721
Federal Income Taxes .....	51,949	13,105
Pre-Tax Book Income .....	<u>\$337,428</u>	<u>\$247,826</u>
Income Tax on Pre-Tax Book Income at Statutory Rate of 48% .....	\$161,965	\$118,956
Increase (Decrease) in Federal Income Taxes Resulting from:		
Excess of Tax over Book Depreciation	(61,469)	(52,508)
Allowance for Funds Used During Construction and Items Capitalized on the Books but Deducted for Tax Purposes .....	(36,947)	(36,188)
Mine Development and Exploration Expense .....	(23,416)	(12,064)
Deferred Fuel Costs .....	(926)	11,027
Property Tax Adjustment .....	(7,033)	(8,382)
Provision for Revenue Refunds .....	(9,626)	6,504
Miscellaneous Items .....	(11,962)	(11,972)
	<u>\$ 10,586</u>	<u>\$ 15,373</u>

	YEARS ENDED DECEMBER 31,	
	1976	1975
(Thousands of Dollars)		
Income Tax on Current-Year Taxable Income .....	\$ 10,586	\$ 15,373
Net Operating Tax Loss Carry-forward (a) .....	(10,586)	(15,373)
Minimum Tax on Preference Items (b) ..	473	—
Current-Year Investment Tax Credit (c) ..	80	150
Adjustment of Prior-Year Accruals—Net	(460)	45
Current Income Taxes—Net ....	<u>93</u>	<u>195</u>
Deferred Income Tax Expenses—Net of Amortization—Resulting from the Following Timing Differences:		
Depreciation (Liberalized and ADR)	45,288	26,383
Unbilled Revenue .....	19,414	—
Deferred Fuel Costs .....	926	(7,563)
Accelerated Amortization of Emergency Facilities (Amortization of Prior-Year Provisions) .....	(6,885)	(6,724)
Other .....	5,205	(745)
Investment Tax Credit Applicable to Deferred Income Taxes on Certain Timing Differences ....	(25,097)	(1,553)
Deferred Income Taxes—Net ...	<u>38,851</u>	<u>9,798</u>
Investment Tax Credit Adjustments—Net	<u>13,005</u>	<u>3,112</u>
Total Federal Income Taxes ....	<u>\$ 51,949</u>	<u>\$ 13,105</u>

(a) Represents the tax effect of the 1974 System net operating tax loss carryforward which was utilized to fully offset current-year taxable income.

(b) Represents an estimated minimum tax on preference items, which will be payable because of the utilization of a carryforward to fully offset taxable income.

(c) Represents an estimated provision for recapture of prior-year investment tax credits.

An amount of \$10,100,000, representing the remaining balance of the System net operating tax loss carryforward from 1974 still to be utilized in the calculation of income taxes, is available to the System at December 31, 1976. The utilization of the carryforward would require provisions by certain of the System companies, at the then current Federal income tax rate for deferred income taxes.

Unused investment tax credits at December 31, 1976 aggregated approximately \$118,300,000, of which \$6,800,000 may be carried forward through 1979, \$17,500,000 through 1980, \$22,900,000 through 1981, \$53,100,000 through 1982 and approximately \$18,000,000 through 1983. Of these amounts, approximately \$39,100,000 had been applied as a reduction of deferred income taxes prior to December 31, 1976 and will not be reflected in net income when realized in future years except as affected by changes in deferred income taxes.

To the extent that normalizable timing differences have eliminated taxable income or have been in-

cluded in carryforwards from 1974 which subsequently have been utilized, provisions have been made for deferred income taxes.

The Federal income tax returns for the years prior to 1966 have been settled with the exception of certain claims for refund which have not been recorded. The returns for the years 1966 through 1973 have been reviewed by the Internal Revenue Service and additional taxes for those years have been proposed, some of which the System has protested or intends to protest. In the opinion of the System companies, adequate provision has been made for such additional taxes.

#### 4. OTHER PROPERTY AND INVESTMENTS:

The subsidiaries have substantial investments in coal lands and fuel-handling facilities. At December 31, 1976 and 1975, such investments included approximately \$91,900,000 and \$60,300,000, respectively, invested in western coal lands acquired as a source of low-sulfur fuel. Approximately \$70,750,000 at December 31, 1976 and \$35,650,000 at December 31, 1975 (including approximately \$16,400,000 and \$9,350,000, respectively, classified as other deferred debits) was invested in other coal properties.

In June 1976, the Cook Coal Terminal at Metropolis, Illinois was sold by a subsidiary at its book cost of approximately \$71,500,000 and was leased back from the purchasers. The same subsidiary has made a net investment of approximately \$49,500,000 with respect to river transportation equipment. Of this amount approximately \$37,000,000 was realized by the subsidiary in 1976 through long-term lease arrangements and approximately \$12,500,000 at December 31, 1976 was included in other property and investments pending completion of the related vessels and their subsequent lease by the subsidiary from the purchaser of the vessels. The amount invested in these facilities at December 31, 1975 was approximately \$60,000,000.

#### 5. LINES OF CREDIT AND SHORT-TERM BORROWINGS:

The Company and its subsidiaries had unused short-term bank lines of credit of approximately \$360,000,000 at both December 31, 1976 and December 31, 1975 (subject to withdrawal at the banks' option), under which notes could be issued with no maturity more than 270 days after date of issue. In accordance with informal agreements with the banks, compensating balances of from 7% to 10% are required to maintain the lines of credit, and additional compensating balances of 10% are maintained on any amounts actually borrowed. Substantially all bank balances are maintained by the Company and its subsidiaries to compensate the banks for banking services and for both used and available lines of credit.

Short-term debt and interest rates thereon were as follows:

	1976	1975
	(Dollars in Thousands)	
Weighted average interest rates for borrowings outstanding at year-end:		
Notes Payable .....	5.9%	7.0%
Commercial Paper .....	5.8%	6.9%
Maximum amount of borrowings outstanding at any month-end during the year:		
Notes Payable .....	\$132,335	\$284,975
Commercial Paper .....	\$252,873	\$398,055
Weighted average interest rate of borrowings during the year (a):		
Notes Payable .....	6.8%	8.3%
Commercial Paper .....	7.0%	8.3%
Average amount of borrowings outstanding during the year:		
Notes Payable .....	\$101,239	\$194,735
Commercial Paper .....	\$155,202	\$264,085

(a) The average interest rates are determined by dividing the interest accrued during the year by the average of the month-end borrowings.

#### 6. COMMON STOCK AND PREMIUM ON COMMON STOCK:

The common stock account was increased by \$65,000,000 in 1976 and by a like amount in 1975, and the related premium on common stock was increased by \$131,000,000 and \$90,150,000 in the respective years. These changes were related to the sale and issuance of 10,000,000 shares of the Company's common stock in each of the two years.

#### 7. RETAINED EARNINGS:

Various restrictions on the use of retained earnings of the subsidiaries for cash dividends on common stock and other purposes are contained in or result from covenants in mortgage indentures, debenture and bank loan agreements, charter provisions and orders of regulatory authorities. Approximately \$275,600,000 at December 31, 1976 was so restricted.

#### 8. COMMITMENTS AND CONTINGENT LIABILITIES:

The System construction budget for the year 1977 is estimated at \$795,000,000 and, in connection therewith, commitments have been made. Reference is made to "System Expansion" on page 9 in this report for additional information on construction.

Total rental expense charged directly to income was approximately \$57,000,000 and \$37,000,000 for the years ended December 31, 1976 and 1975. In addition, approximately \$10,000,000 and \$9,000,000 were charged to clearing and other accounts in the respective years; parts of such amounts were charged to income. Minimum rental commitments (exclusive of additional amounts, such as property taxes and insurance, payable directly by the lessee, which may vary from year to year but are payable as additional rent) under noncancelable leases of property, primarily representing fuel production, transportation and handling facilities and equipment, leased at December 31, 1976 were approximately as follows:

Payable	Amount
1977 .....	\$ 59,000,000
1978 .....	57,000,000
1979 .....	54,000,000
1980 .....	52,000,000
1981 .....	49,000,000
Five years ending:	
1986 .....	205,000,000
1991 .....	146,000,000
1996 .....	96,000,000
After 1996 .....	83,000,000

The amounts shown in the preceding table do not include rentals under a lease of nuclear fuel. Such rentals comprise the unamortized balance of the lessor's cost (\$15,900,000 at December 31, 1976), less salvage value, if any, to be paid to approximately December 1978 on the basis of heat produced, and carrying charges on the lessor's unrecovered cost. It is contemplated that portions of the presently leased material will be replenished by additional leased material beginning in early 1977.

The greatest part of the rentals is under leases having purchase options or renewal options for substantially all of the economic lives of the properties.

The present values of financing leases (as defined by the Securities and Exchange Commission) at December 31, 1976 amounted to less than 5% of the sum of capitalization and such present values, and the impact on net income if such leases were capitalized would be less than 3% of the average net income for the three years ended December 31, 1976.

Under incentive plans providing for the purchase of outstanding common stock of the Company by System key employees, authorized by the shareholders in 1965 (as amended in 1975), 1968 (as amended in 1969), 1973 and 1976, there were 1,136,162 shares being purchased by participants at December 31, 1976 and 921,250 shares at December 31, 1975 on which they owed approximately \$19,400,000 and \$16,349,000 at the respective dates on bank loans generally being paid over 10-year periods. The Company is paying part of the interest cost and has guaranteed the payment of principal and interest on \$12,384,000 principal amount of the bank loans at December 31, 1976.

The Company and its three largest subsidiaries participate with several unaffiliated utility companies and Ohio Valley Electric Corporation (OVEC) in supplying the Energy Research and Development Administration (ERDA) with the power requirements of its plant near Portsmouth, Ohio. The ERDA power agreement ends in 1977, but ERDA has notified OVEC of its desire to have the term extended for a further period of 15 years. The present agreement provides for future increases in the ERDA contract demand and for decreases upon proper notification. The proceeds from the sale of power to ERDA and from sales

of available power to the group of utility participants are designed to be sufficient for OVEC to meet its operating expenses and fixed costs, including amortization of long-term debt capital (balance approximately \$80,000,000 as of December 31, 1976), over a period ending on January 1, 1982; and to provide an annual return on its equity capital. The Company's three subsidiaries are entitled to receive from OVEC, and are obligated to pay for, the power not required by ERDA in proportion to their power-participation ratios, presently aggregating 37.8%.

The development of one subsidiary's licensed pumped-storage and hydroelectric power project was effectively nullified by an act of Congress in 1976 (see page 10). The subsidiary intends to seek just compensation in the U.S. Court of Claims. Approximately \$16,238,000, representing the subsidiary's investment in the project, has been reclassified as other deferred debits pending settlement of such claim.

See "Other Major Matters" on page 28 in this report for information on the proposed acquisition of common stock of Columbus and Southern Ohio Electric Company.

Reference is made to discussions of matters in litigation and administrative proceedings on pages 14, 16, 28 and 29 in this report.

#### 9. UNAUDITED QUARTERLY FINANCIAL INFORMATION:

The following consolidated quarterly financial information is unaudited but, in the opinion of the Company, includes all adjustments (consisting of only normal recurring accruals) necessary for a fair presentation of the amounts shown:

	THREE MONTHS ENDED			
	Mar. 31	June 30,	Sep. 30,	Dec. 31,
	(Thousands of Dollars)			
Operating Revenues ...	\$482,946	\$446,150	\$442,405	\$497,119
Operating Income .....	129,663	111,735	111,662	128,787
Net Income .....	65,424	52,997	52,682	70,618
Earnings per Share ....	\$0.77	\$0.56	\$0.57	\$0.76

#### 10. UNAUDITED REPLACEMENT-COST INFORMATION:

Estimated replacement cost and related amounts pertaining to depreciation, as of and for the year ended December 31, 1976, of productive capacity (as represented by utility plant in service, excluding nondepreciable items such as land and excluding other amounts for which replacement-cost data are not required to be computed) are considerably greater than the related original-cost amounts reported in the consolidated financial statements. A quantitative analysis of such unaudited replacement-cost information is included in the Company's 1976 Annual Report (Form U5S) to the Securities and Exchange Commission. Reference is made to the inside front cover of this report for information with regard to obtaining a copy of the Company's Form U5S for the year 1976.

## Auditors' Opinion

HASKINS & SELLS  
Certified Public Accountants  
Two Broadway, New York, New York 10004

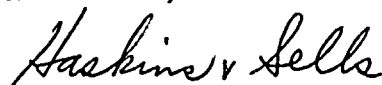
To the Stockholders of  
AMERICAN ELECTRIC POWER COMPANY, INC.

*We have examined the balance sheet of American Electric Power Company, Inc. and subsidiary companies, consolidated, as of December 31, 1976 and 1975 and the related statements of consolidated income, retained earnings and sources of funds for plant and property additions for the respective years then ended. Our examination was made in accordance with generally accepted auditing standards and, accordingly, included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.*

*As discussed in Note 2 of Notes to Financial Statements, certain subsidiaries are collecting revenues subject to possible refund. In addition, certain subsidiaries are involved in administrative and court proceedings referred to in paragraphs three and four under the subhead "Rates are subject of proceedings" (page 16) and in paragraph one under the subhead "Other proceedings" (page 29).*

*In our opinion, subject to the effect, if any, of the outcome of the proceedings and the rate matters referred to in the preceding paragraph, the financial statements identified above present fairly the financial position of American Electric Power Company, Inc. and subsidiary companies, consolidated, as of December 31, 1976 and 1975 and the results of their operations and their sources of funds for plant and property additions for the years then ended in conformity with generally accepted accounting principles consistently applied during the period and on a basis consistent with the preceding year.*

*We have previously examined and reported on the financial statements of the companies for each of the nine years ended December 31, 1974.*



New York, N.Y.  
February 22, 1977.

## Management's Comments On Consolidated Statement of Income

Reference is made to the Consolidated Statement of Income, Notes to Financial Statements and Comparative Consolidated Statistics for information affecting the results of operations in 1976, compared with 1975, and in 1975, compared with 1974. The amounts discussed below reflect only the results of past operations and are not intended as any representation as to results of operations for any future period. Future operations are necessarily affected from time to time by various and diverse factors and developments, including changes in electric rates, business activity, taxes, labor contracts, environmental expenditures, costs and availability of fuel, weather conditions and other matters, the nature and effect of which cannot be precisely determined in advance. The following comments are subject to the foregoing qualification and should be considered in light of the detailed financial and statistical information contained elsewhere in this Annual Report to which reference is hereby made.

All amounts and percentage relationships discussed herein reflect the restatement referred to in Note 2 of Notes to Financial Statements.

### Operating Revenues

Consolidated operating revenues increased by \$305,079,000 (23%) in 1975 over 1974 and by \$230,690,000 (14%) in 1976 over 1975. The deliveries of electric energy to customers served by the System increased by smaller margins, the total kilowatthours delivered increasing by less than 1% in 1975 over 1974 and increasing by 12% in 1976 over 1975.

The substantial increase in operating revenues for each of these years was affected by an interaction of factors. The increase experienced in 1975 over 1974 was caused largely by the recovery of higher fossil-fuel costs through fuel-adjustment clauses and energy charges, and by rate increases which were put into effect at various times in 1974 and 1975. The increase for 1976 over 1975 was related to greater sales of electric energy both to System ultimate customers and to neighboring utilities, as well as recent rate increases.

Particularly as to 1975, the growth of operating revenues of the System was limited by reduced activities of certain of the commercial and industrial customers served by the System due to general economic conditions. Also, conservation measures by

some System customers have tended to limit the growth of operating revenues.

#### Operating Expenses

Fuel for electric generation increased by \$127,485,000 (22%) in 1975 over 1974 and by \$54,514,000 (8%) in 1976 over 1975. The increase for 1975 over 1974 was associated with an increase in the average cost of fuel per million Btu, from 83.7 cents to 94.3 cents. (Fuel for electric generation in 1974 would have been higher if the operating subsidiaries had not instituted, as of January 1974, the deferment of incremental fuel costs until billed to customers in later months to permit the proper matching of costs and revenues.)

The increase in fuel for electric generation experienced in 1976 was related to a growth in generation, the effect of which was partially offset by a decline in the average cost of fuel per million Btu, from 94.3 cents in 1975 to 86.8 cents in 1976.

The decreased maintenance expense in 1975, as compared with 1974, of \$5,207,000 (6%) resulted from the deferment in 1975 of maintenance which might have been undertaken under other circumstances. The increase in maintenance expense in 1976 over 1975 of \$21,121,000 (26%) was associated with certain maintenance work being performed in 1976 which had previously been deferred due to economic conditions and with the placing into service of two major generating units in the latter half of 1975.

The changes in other operation expenses in 1975 and 1976 were affected by continuing wage and other cost increases and the varying amounts of test generation, purchased power and net interchange power occurring in each year.

The increased depreciation expense in 1975 and 1976 over the prior years of \$28,369,000 (22%) and \$25,107,000 (16%), respectively, was generally caused by additional electric plant placed in service.

Taxes other than income taxes increased in 1975 and in 1976. Such increases resulted principally from increases in utility plant in service and operating revenues. (In 1973 the Federal Power Commission authorized a \$46,000,000 adjustment concerning the procedure for providing for property taxes. In connection therewith, the affected utility subsidiaries credited such amount to income over the four years ended December 31, 1976.)

Information concerning Federal income taxes (in-

cluding a reconciliation of actual Federal income taxes to such taxes computed at statutory rates) is shown in Note 3 of Notes to Financial Statements.

#### Allowance for Funds Used During Construction

The total amount of allowance for funds used during construction (AFUDC), which is accrued with respect to construction projects until the facility is placed in commercial operation or the project is terminated, decreased in 1975 and 1976 by \$36,588,000 (31%) and \$13,454,000 (16%), respectively. Such decreases are primarily related to the termination of AFUDC on Donald C. Cook Nuclear Plant Unit No. 1 as of August 1975, General James M. Gavin Plant Unit No. 1 as of October 1974, and Gavin Plant Unit No. 2 as of July 1975, on which dates such units were placed in commercial operation.

See Note 1 of Notes to Financial Statements for information concerning a revision, effective January 1, 1977, in the FPC Uniform System of Accounts, for the determination of the amount of, and accounting for, AFUDC.

#### Fixed Charges

Interest on long-term debt increased in 1975 and 1976 principally due to the sale of additional long-term debt securities in connection with the System construction program and the refinancing of maturing debt securities. The decrease in short-term debt interest in 1975 and 1976 was related to lower interest rates, and the issuance of additional long-term debt and common stock, a portion of the proceeds of which was used to reduce outstanding balances of short-term debt. Preferred stock dividend requirements increased because of the issuance during 1974 and 1975 of additional preferred stocks of System subsidiaries.

#### Earnings Per Share

Earnings per share of common stock (before the cumulative effect of accounting changes) were \$1.92 in 1974, increased to \$2.44 in 1975 and increased to \$2.66 in 1976. (After the cumulative effect of accounting changes, 1974 earnings per share were \$2.50.) The changes in per-share amounts resulted from the interaction of the factors discussed above and elsewhere in this Annual Report, and an increase in the average number of shares outstanding in each year due to the issuance of new shares of common stock.

# Financial Statistics—1976

In thousands

## INCOME DATA

OPERATING REVENUES . . . . .	
OPERATING EXPENSES:	
Operation—Fuel for Electric Generation . . . . .	
Operation—Other . . . . .	
Maintenance . . . . .	
Depreciation . . . . .	
Taxes, Other Than Income Taxes:	
Real and Personal Property . . . . .	
State Gross Sales, Excise, Franchise and Miscellaneous State and Local . . . . .	
Social Security—Federal and State . . . . .	
State Income Taxes . . . . .	
Federal Income Taxes . . . . .	
Total Operating Expenses . . . . .	
OPERATING INCOME . . . . .	
OTHER INCOME AND DEDUCTIONS:	
Allowance for Funds Used During Construction . . . . .	
Miscellaneous Nonoperating Income Less Deductions . . . . .	
Total Other Income and Deductions . . . . .	
INCOME BEFORE INTEREST CHARGES . . . . .	
INTEREST CHARGES:	
Long-Term Debt . . . . .	
Short-Term Debt and Miscellaneous . . . . .	
Total Interest Charges . . . . .	
NET INCOME . . . . .	

## BALANCE SHEET DATA

Assets and Other Debits	
UTILITY PLANT (less provisions) . . . . .	
OTHER PROPERTY AND INVESTMENTS . . . . .	
CURRENT ASSETS . . . . .	
DEFERRED DEBITS . . . . .	
Totals . . . . .	
Liabilities and Other Credits	
LONG-TERM DEBT (less portion due within one year) . . . . .	
PREFERRED STOCK . . . . .	
COMMON STOCK . . . . .	
OTHER PAID-IN CAPITAL . . . . .	
RETAINED EARNINGS . . . . .	
CURRENT LIABILITIES . . . . .	
DEFERRED CREDITS AND OPERATING RESERVES . . . . .	
Totals . . . . .	

AMERICAN ELECTRIC POWER COMPANY, INC. and Subsidiary Companies

APPALACHIAN POWER COMPANY	INDIANA & MICHIGAN ELECTRIC CO. AND GENERATING SUBSIDIARY	KENTUCKY POWER COMPANY	KINGSPORT POWER COMPANY	MICHIGAN POWER COMPANY	OHIO POWER COMPANY AND GENERATING SUBSIDIARY	WHEELING ELECTRIC COMPANY
\$ 610,184	\$ 417,548	\$ 84,240	\$23,369	\$48,724	\$ 712,747	\$41,862
217,331	70,127	50,121	—	—	424,552	—
137,476	166,963	(16,266)	19,148	41,284	(130,424)	34,615
28,753	20,140	7,430	505	1,042	43,486	774
48,625	47,852	9,104	842	1,702	72,051	1,221
11,153	10,880	895	404	1,103	23,301	217
22,369	6,538	67	589	126	18,752	2,453
1,919	1,515	382	54	148	2,438	86
—	(114)	608	—	124	—	—
24,516	(7,776)	6,712	—	1,451	25,647	(27)
492,142	316,125	59,053	21,542	46,980	479,803	39,339
118,042	101,423	25,187	1,827	1,744	232,944	2,523
12,037	28,874	1,272	12	12	23,027	40
8,740	718	(414)	(7)	(20)	3,799	(8)
20,777	29,592	858	5	(8)	26,826	32
138,819	131,015	26,045	1,832	1,736	259,770	2,555
69,525	68,294	9,349	779	93	100,875	1,378
2,206	7,928	518	76	864	6,154	2
71,731	76,222	9,867	855	957	107,029	1,380
\$ 67,088	\$ 54,793	\$ 16,178	\$ 977	\$ 779	\$ 152,741	\$ 1,175

\$1,345,440	\$1,616,389	\$263,201	\$20,997	\$45,652	\$2,249,600	\$30,257
84,638	107,308	13,951	193	84	116,786	45
169,396	146,314	57,277	4,815	11,403	363,825	7,701
85,927	44,020	7,510	519	1,331	73,112	2,103
\$1,685,401	\$1,914,031	\$341,939	\$26,524	\$58,470	\$2,803,323	\$40,106
\$ 910,140	\$ 906,584	\$165,433	\$ —	\$11,800	\$1,349,501	\$19,000
109,405	147,381	—	—	1,511	278,421	—
180,458	56,584	50,450	4,100	2,861	321,201	2,428
159,333	352,228	24,000	800	4,235	282,594	4,895
127,270	78,931	50,604	3,795	15,474	211,644	6,243
136,684	274,453	19,707	17,682	14,911	287,938	6,970
62,111	97,870	31,745	147	7,678	72,024	570
\$1,685,401	\$1,914,031	\$341,939	\$26,524	\$58,470	\$2,803,323	\$40,106

# Comparative Consolidated Statistics

## Part I

		1976	1975
Energy Supply	System Capability—Year End (in megawatts) . . . . .	17,512	17,597
	Net System Peak Load (in megawatts) . . . . .	15,324	13,985
	Margin of Reserve at Time of Peak (%) . . . . .	14.8	18.3
	Net Generation (in millions of kwh) . . . . .	90,222	80,333
	Purchased Power (in millions of kwh) . . . . .	1,107	1,830
	Net Power Interchange (in millions of kwh) . . . . .	(252)	(447)
	Total System Load (in millions of kwh) . . . . .	91,077	81,716
Efficiency	Load Factor (%) . . . . .	67.7	66.7
	Heat Rate (btu per kwh of net generation) . . . . .	9,717	9,686
Coal Used (in thousands of tons)	Purchased Coal (estimated) . . . . .	25,146	22,928
	Coal from System Mines (estimated) . . . . .	10,664	8,969
	Total (actual) . . . . .	35,810	31,897
Energy Delivery (in circuit miles)	765-kv Transmission . . . . .	1,330	1,304
	345-kv and 500-kv Transmission . . . . .	2,987	2,933
	Other Transmission . . . . .	14,265	14,221
	Distribution . . . . .	80,926	80,137
	Total Circuit Miles . . . . .	99,508	98,595
	Interconnections With Other Utilities (138 kv and up) Capacity of Interconnections (in megawatts) . . . . .	99 27,700	96 26,700
Customers (at year end)	Residential With Electric Heating . . . . .	311,100	282,627
	Residential Without Electric Heating . . . . .	1,388,700	1,386,945
	Total Residential Customers . . . . .	1,699,800	1,669,572
	Commercial . . . . .	198,047	194,144
	Industrial . . . . .	11,389	10,900
	Other Utilities . . . . .	182	184
	All Others . . . . .	8,402	8,045
	Total . . . . .	1,917,820	1,882,845
Energy Use (in millions of kwh)	Residential With Electric Heating . . . . .	6,537	5,581
	Residential Without Electric Heating . . . . .	10,102	9,931
	Total Residential Use . . . . .	16,639	15,512
	Commercial . . . . .	9,090	8,606
	Industrial . . . . .	30,936	29,060
	Other Utilities . . . . .	27,459	22,014
	All Others . . . . .	789	725
	Total Energy Use . . . . .	84,913	75,917
Average Annual Use Per Customer (in kwh)	Residential With Electric Heating . . . . .	22,066	20,662
	Residential Without Electric Heating . . . . .	7,284	7,201
	All Residential: AEP System . . . . .	9,886	9,406
	All Investor-owned Utilities . . . . .	7,950 (P)	7,852
Shareowners and Employees (at year end)	Shareowners . . . . .	245,388	226,899
	Employees . . . . .	20,361	18,390

(P) Preliminary



AMERICAN ELECTRIC POWER COMPANY, INC. and Subsidiary Companies

1974	1973	1972	1971	1970	1969	1968	1967	1966
16,169	15,153	14,244	14,044	11,500	11,625	10,891	10,371	8,788
12,970	12,227	12,097	10,917	10,201	9,844	9,214	8,583	7,843
24.7	11.6	19.0	31.2	16.4	18.1	18.2	20.8	12.0
78,203	77,509	70,258	61,321	56,940	55,347	52,455	49,636	45,139
3,285	4,068	3,768	5,569	6,636	6,882	5,671	4,096	3,330
(46)	(1,089)	243	414	1,105	510	790	545	289
81,442	80,488	74,269	67,304	64,681	62,739	58,916	54,277	48,758
71.7	75.1	69.9	70.4	72.4	72.7	72.8	72.2	71.0
9,641	9,526	9,484	9,654	9,689	9,620	9,560	9,487	9,543
25,226	24,679	23,061	20,279	18,654	18,131	16,710	15,892	13,799
6,712	6,727	5,375	4,794	5,600	4,742	4,429	4,020	4,499
31,938	31,406	28,436	25,073	24,254	22,873	21,139	19,912	18,298
1,304	1,067	1,001	670	395	66	—	—	—
2,893	2,842	2,606	2,597	2,539	2,485	2,175	2,022	1,855
14,176	14,107	13,990	13,921	13,730	13,635	13,565	13,177	13,262
79,414	78,529	77,562	76,681	75,989	75,157	73,337	71,828	71,043
97,787	96,545	95,159	93,869	92,653	91,343	89,077	87,027	86,160
96	95	95	92	87	80	73	64	61
26,100	22,900	22,900	22,600	18,000	13,500	10,700	8,900	7,800
258,453	222,855	188,981	162,044	138,831	118,168	98,377	83,197	69,946
1,356,723	1,359,606	1,358,012	1,345,937	1,333,379	1,320,354	1,313,069	1,285,750	1,278,231
1,615,176	1,582,461	1,546,993	1,507,981	1,472,210	1,438,522	1,411,446	1,368,947	1,348,177
188,379	183,814	180,199	176,941	173,362	170,506	165,076	163,272	160,373
10,645	10,055	9,835	9,003	8,977	8,532	8,393	8,393	8,259
132	131	123	124	124	142	134	233	232
7,798	7,931	7,745	7,611	7,384	6,939	8,744	6,139	6,076
1,822,130	1,784,392	1,744,895	1,701,660	1,662,057	1,624,641	1,593,793	1,546,984	1,523,117
5,279	4,474	3,975	3,426	2,991	2,530	2,006	1,691	1,414
9,459	9,664	9,052	8,691	8,338	7,839	7,278	6,734	6,413
14,738	14,138	13,027	12,117	11,329	10,369	9,284	8,425	7,827
8,063	7,991	7,372	6,877	6,359	5,714	5,122	4,540	4,163
34,446	34,385	31,579	30,127	30,771	30,953	29,360	27,088	23,988
17,965	17,757	15,965	12,743	11,131	10,622	10,220	9,646	8,215
646	641	597	571	524	527	474	420	432
75,858	74,912	68,540	62,435	60,114	58,185	54,460	50,119	44,625
21,486	21,716	22,625	22,793	23,213	23,312	22,153	22,113	21,959
6,866	6,994	6,695	6,498	6,288	5,955	5,558	5,253	5,028
9,079	8,904	8,527	8,135	7,787	7,277	6,631	6,202	5,842
7,574	7,769	7,413	7,062	6,720	6,253	5,727	5,241	4,962
199,131	165,105	147,591	130,918	105,343	84,780	78,000	78,231	73,365
17,932	16,559	15,577	15,015	14,742	14,393	13,443	12,626	11,953

# Comparative Consolidated Statistics

## Part II

		1976	1975
Operating Revenues (in thousands)	Residential With Electric Heating . . . . .	\$ 165,839	\$ 138,315
	Residential Without Electric Heating . . . . .	324,611	311,550
	Total Residential Revenues . . . . .	490,450	449,865
	Commercial . . . . .	276,226	256,162
	Industrial . . . . .	570,910	534,492
	Other Utility Companies . . . . .	457,891	343,537
	All Other from Kwh Sales . . . . .	23,242	20,894
	Unallocated(a) . . . . .	(8,590)	(14,174)
	Other Operating Revenues . . . . .	58,491	47,154
	Total . . . . .	\$1,868,620	\$1,637,930
Average Annual Bill Per Customer(b)	Residential With Electric Heating . . . . .	\$ 559.77	\$ 512.08
	Residential Without Electric Heating . . . . .	\$ 234.06	\$ 225.91
	All Residential: AEP System . . . . .	\$ 291.39	\$ 272.78
	All Investor-owned Utilities . . . . .	\$ 298.13(P)	\$ 275.61
Average Kwh Price Per Customer(b) (in cents)	Residential With Electric Heating . . . . .	2.54	2.48
	Residential Without Electric Heating . . . . .	3.21	3.14
	All residential: AEP System . . . . .	2.95	2.90
	All Investor-owned Utilities . . . . .	3.75(P)	3.51
	All customers: AEP System . . . . .	2.13	2.10
	All Investor-owned Utilities . . . . .	3.12(P)	2.94
Utility Plant (in thousands)	Balance at Beginning of Year . . . . .	\$6,644,963	\$6,221,133
	Gross Additions Less Nuclear Fuel . . . . .	532,416	445,508
	Gross Additions to Nuclear Fuel . . . . .	19,015	6,056
	Retirements or Sales . . . . .	(42,961)	(39,630)
	Other Changes . . . . .	(14,575)	11,896
	Net Additions . . . . .	493,895	423,830
	Balance at End of Year . . . . .	\$7,138,858	\$6,644,963
	Investment (actual): Per Customer . . . . .	\$ 3,722	\$ 3,529
Per Employee . . . . .		\$ 350,614	\$ 361,336
Common Stock Data(c)	Market Price Range: High . . . . .	\$25.50	\$21.62½
	Low . . . . .	\$20.12½	\$14.75
	Cash Dividends Paid:		
	First Quarter . . . . .	\$ .50	\$ .50
	Second Quarter . . . . .	.50	.50
	Third Quarter . . . . .	.50	.50
	Fourth Quarter . . . . .	.51½	.50
	Total Cash Dividends Paid . . . . .	\$ 2.01½	\$ 2.00
	Dividend Payout Ratio . . . . .	75.5%	82.0%
	Book Value Per Share . . . . .	\$21.12	\$20.59
	Book Value Per Share (Including Certain Accumulated Deferred Income Taxes) (d) . . . . .	\$23.29	\$22.56

(a) Represents portion of revenue refunds or over-recoveries provided for, but not allocated to separate customer classes.

(b) Calculations based upon revenue before refund restatement.

AMERICAN ELECTRIC POWER COMPANY, INC. and Subsidiary Companies

1974	1973	1972	1971	1970	1969	1968	1967	1966
\$ 108,587	\$ 70,769	\$ 59,477	\$ 48,107	\$ 40,364	\$ 33,543	\$ 26,623	\$ 22,451	\$ 18,968
253,571	208,908	191,989	175,941	165,239	155,564	147,061	138,254	133,981
362,158	279,677	251,466	224,048	205,603	189,107	173,684	160,705	152,949
201,163	161,200	145,118	129,031	116,936	105,554	96,673	88,047	82,112
471,513	338,906	298,333	264,348	243,707	230,793	217,231	199,617	184,533
252,158	162,653	146,056	113,187	84,603	73,482	68,426	63,838	54,604
16,183	14,400	13,292	12,473	11,320	10,712	9,684	8,580	8,877
(9,289)	(9,000)	(8,511)	(2,642)	—	—	—	—	—
38,965	31,544	27,845	23,990	20,950	18,261	14,479	2,889	5,134
\$1,332,851	\$ 979,380	\$ 873,599	\$ 764,435	\$ 683,119	\$ 627,909	\$ 580,177	\$ 523,676	\$ 488,209
\$ 441.96	\$ 343.51	\$ 338.53	\$ 320.05	\$ 313.26	\$ 309.02	\$ 294.06	\$ 293.63	\$ 294.66
\$ 184.06	\$ 151.19	\$ 142.00	\$ 131.37	\$ 124.61	\$ 118.17	\$ 112.30	\$ 107.85	\$ 105.05
\$ 223.09	\$ 176.15	\$ 164.61	\$ 150.41	\$ 141.31	\$ 132.71	\$ 124.05	\$ 118.30	\$ 114.16
\$ 234.04	\$ 197.33	\$ 179.39	\$ 163.84	\$ 149.18	\$ 138.19	\$ 128.86	\$ 121.07	\$ 116.11
2.06	1.58	1.50	1.40	1.35	1.33	1.33	1.33	1.34
2.68	2.16	2.12	2.02	1.98	1.98	2.02	2.05	2.09
2.46	1.98	1.93	1.85	1.81	1.82	1.87	1.91	1.95
3.09	2.54	2.42	2.32	2.22	2.21	2.25	2.31	2.34
1.71	1.26	1.22	1.18	1.09	1.08	1.07	1.04	1.08
2.50	1.96	1.86	1.78	1.68	1.63	1.64	1.66	1.67
\$5,597,043	\$4,940,109	\$4,378,449	\$3,807,948	\$3,329,445	\$2,892,433	\$2,631,839	\$2,402,294	\$2,223,169
693,579	685,554	606,924	607,291	500,715	461,695	318,909	234,582	205,270
5,959	866	863	16,643	10,192	2,576	—	—	—
(78,053)	(32,185)	(42,764)	(56,889)	(31,776)	(26,564)	(88,779)	(22,570)	(22,999)
2,605	2,699	(3,363)	3,456	(628)	(695)	30,464	17,533	(3,146)
624,090	656,934	561,660	570,501	478,503	437,012	260,594	229,545	179,125
\$6,221,133	\$5,597,043	\$4,940,109	\$4,378,449	\$3,807,948	\$3,329,445	\$2,892,433	\$2,631,839	\$2,402,294
\$ 3,414	\$ 3,137	\$ 2,831	\$ 2,573	\$ 2,291	\$ 2,049	\$ 1,815	\$ 1,701	\$ 1,577
\$ 346,929	\$ 338,006	\$ 317,141	\$ 291,605	\$ 258,306	\$ 231,324	\$ 215,163	\$ 208,446	\$ 200,978
\$27.12½	\$30.75	\$32.00	\$32.75	\$32.00	\$40.25	\$40.50	\$41.50	\$42.44
\$13.50	\$21.25	\$25.75	\$25.75	\$22.00	\$28.00	\$32.50	\$31.88	\$31.46
\$ .47½	\$ .45	\$ .44½	\$ .42½	\$ .41	\$ .39½	\$ .38	\$ .36	\$ .32
.50	.45	.43½	.42½	.41	.39½	.38	.36	.32
.50	.47½	.43½	.42½	.41	.39½	.38	.36	.32
.50	.47½	.45	.42½	.42½	.41	.39½	.38	.36
\$ 1.97½	\$ 1.85	\$ 1.76½	\$ 1.70	\$ 1.65½	\$ 1.59½	\$ 1.53½	\$ 1.46	\$ 1.32
79.5%	68.4%	70.6%	71.5%	72.2%	72.2%	73.0%	73.1%	69.4%
\$20.85	\$20.06	\$18.70	\$17.98	\$16.54	\$15.29	\$13.92	\$13.35	\$12.18
\$22.81	\$22.24	\$21.16	\$20.47	\$19.31	\$18.33	\$17.20	\$16.69	\$15.72

(c) Market price, book value and cash dividends paid adjusted for 2½ % stock dividend in 1967; book value based on outstanding shares at end of year.

(d) Related to accelerated amortization and liberalized depreciation.

(P) Preliminary

# Operating Statistics—1976

		SUBSIDIARIES CONSOLIDATED (after inter-company eliminations)
Energy Supply (in millions of kwh)	Net Generation:	
	Steam (nuclear) . . . . .	6,809
	Steam (fossil) . . . . .	82,683
	Hydro and Pumped Storage . . . . .	730
	Other . . . . .	—
	Total Net Generation . . . . .	90,222
Energy Delivery (circuit miles of line)	Purchased . . . . .	1,107
	Net Interchange . . . . .	(252)
	Total Load . . . . .	91,077
	765-kv Transmission . . . . .	1,330
	345-kv and 500-kv Transmission . . . . .	2,987
	Other Transmission . . . . .	14,265
Customers (at year end)	Distribution . . . . .	80,926
	Total . . . . .	99,508
	Residential . . . . .	1,699,800
	Commercial . . . . .	198,047
	Industrial . . . . .	11,389
	All Others . . . . .	8,584
Energy Use (in millions of kwh)	Total . . . . .	1,917,820
	Residential . . . . .	16,639
	Commercial . . . . .	9,090
	Industrial . . . . .	30,936
	All Others . . . . .	28,248
	Total . . . . .	84,913
Operating Revenues (in thousands)	Residential . . . . .	\$ 490,450
	Commercial . . . . .	276,226
	Industrial . . . . .	570,910
	All Other from Kwh Sales . . . . .	481,133
	Unallocated(a) . . . . .	(8,590)
	Other Operating Revenues . . . . .	58,491
Residential Customers with Electric Heating	Total . . . . .	\$1,868,620
	Customers (year end) . . . . .	311,100
	Total Kwh Used (in millions) . . . . .	6,537
	Revenue from All Uses (in thousands) . . . . .	\$165,839
	Average Use, Bill and Price	
	Residential Customers with Electric Heating:(b)	
Average Use, Bill and Price	Kwh Used per Customer . . . . .	22,066
	Annual Bill . . . . .	\$559.77
	Price per Kwh (in cents) . . . . .	2.54
	All Residential Customers:(b)	
	Kwh Used per Customer . . . . .	9,886
	Annual Bill . . . . .	\$291.39
Average Use, Bill and Price	Price per Kwh (in cents) . . . . .	2.95
	All Customers:(b)	
	Price per Kwh (in cents) . . . . .	2.13

(a) Represents portion of revenue refunds or over-recoveries provided for, but not allocated to separate customer classes.

**AMERICAN ELECTRIC POWER COMPANY, INC. and Subsidiary Companies**

APPALACHIAN POWER COMPANY	INDIANA & MICHIGAN ELECTRIC CO. AND GENERATING SUBSIDIARY	KENTUCKY POWER COMPANY	KINGSPORT POWER COMPANY	MICHIGAN POWER COMPANY	OHIO POWER COMPANY AND GENERATING SUBSIDIARY	WHEELING ELECTRIC COMPANY
—	6,809	—	—	—	—	—
21,764	7,701	6,432	—	—	46,786	—
646	72	—	—	12	—	—
—	—	—	—	—	—	—
22,410	14,582	6,432	—	12	46,786	—
431	232	11	1,100	556	433	1,884
5,481	6,522	(2,134)	—	—	(10,121)	—
28,322	21,336	4,309	1,100	568	37,098	1,884
398	406	103	—	—	423	—
477	1,590	8	—	—	881	31
4,985	2,870	840	74	190	5,029	277
36,421	13,659	7,457	838	1,291	19,984	1,276
42,281	18,525	8,408	912	1,481	26,317	1,584
600,252	381,448	112,540	28,716	24,050	518,066	34,728
66,225	41,703	14,259	3,030	2,850	65,814	4,166
3,029	2,452	1,518	78	151	4,074	150
3,225	1,377	156	184	96	3,419	130
672,731	426,980	128,473	32,008	27,147	591,373	39,174
5,856	3,961	1,118	487	191	4,726	300
2,874	2,578	462	179	88	2,658	251
7,861	4,209	1,582	362	183	15,637	1,247
9,446	9,299	997	22	68	11,935	20
26,037	20,047	4,159	1,050	530	34,956	1,818
\$181,004	\$109,335	\$27,403	\$11,029	\$ 5,057	\$147,078	\$ 9,544
90,895	72,527	11,949	4,857	2,559	85,786	7,653
168,311	80,233	26,680	6,879	4,005	262,851	25,398
165,386	154,086	17,463	544	1,242	200,047	605
(3,553)	(2,444)	—	—	(84)	—	(2,299)
8,141	3,811	745	60	35,945	16,985	961
\$610,184	\$417,548	\$84,240	\$23,369	\$48,724	\$712,747	\$41,862
124,995	69,237	21,723	17,605	1,988	70,672	4,880
2,453	1,578	452	373	40	1,533	108
\$66,337	\$37,447	\$9,618	\$8,191	\$976	\$40,309	\$2,961
20,788	23,200	23,016	21,760	21,013	22,914	23,226
\$562.29	\$550.63	\$489.29	\$477.81	\$506.60	\$602.65	\$634.59
2.70	2.37	2.13	2.20	2.41	2.63	2.73
9,893	10,439	10,112	17,173	7,999	9,187	8,665
\$305.79	\$288.11	\$247.88	\$388.56	\$212.23	\$285.93	\$275.84
3.09	2.76	2.45	2.26	2.65	3.11	3.18
2.31	2.06	2.01	2.22	2.41	1.99	2.25

(b) Calculations based upon revenue before refund restatement.

## The American Electric Power System

**AMERICAN ELECTRIC POWER COMPANY, INC.**, 2 Broadway, New York, N.Y., is an investor-owned public utility holding company, owning the common stock of seven operating electric company subsidiaries. The parent company, founded in 1906 as American Gas and Electric Company, changed its name to its present form in 1958. The major electric facilities of the seven operating companies—their power plants and principal transmission stations—are interconnected and their operations coordinated so that they function as a single, integrated electric utility system, the **AMERICAN ELECTRIC POWER SYSTEM** (see map opposite). Other subsidiaries are engaged in businesses directly related to electric energy, such as coal mining and power generation.

**AMERICAN ELECTRIC POWER SERVICE CORPORATION**, 2 Broadway, New York, is another subsidiary of the parent company. As the service organization of the AEP System, it provides to both the parent and the operating and other subsidiaries a number of management, professional and technical services, including planning, engineering, design, construction supervision, finance, accounting, legal services and many others. A major branch office is located in Canton, Ohio; the headquarters of its fuel supply operation in Lancaster, Ohio, and an environmental engineering laboratory in Huntington, West Virginia.

THE OPERATING COMPANIES	SERVICE AREA		
	Population	Communities	Square Miles
APPALACHIAN POWER COMPANY Roanoke, Virginia	2,153,000	1,654	19,260
INDIANA & MICHIGAN ELECTRIC COMPANY Fort Wayne, Indiana	1,499,000	231	7,740
KENTUCKY POWER COMPANY Ashland, Kentucky	396,000	336	5,700
KINGSPORT POWER COMPANY Kingsport, Tennessee	92,000	7	220
MICHIGAN POWER COMPANY (a) Three Rivers, Michigan	249,000	71	928
OHIO POWER COMPANY Canton, Ohio	1,698,000	663	7,374
WHEELING ELECTRIC COMPANY Wheeling, West Virginia	108,000	45	450

### MINING COMPANIES

CEDAR COAL Co. .... Cedar Grove, W.Va.  
CENTRAL APPALACHIAN COAL Co. .... Montgomery, W.Va.  
CENTRAL COAL Co. .... New Haven, W.Va.  
CENTRAL OHIO COAL Co. .... Cumberland, Ohio  
SOUTHERN APPALACHIAN COAL Co. .... Marmet, W.Va.  
SOUTHERN OHIO COAL Co. .... Albany, Ohio  
WINDSOR POWER HOUSE COAL Co. .... Windsor Hts., W.Va.

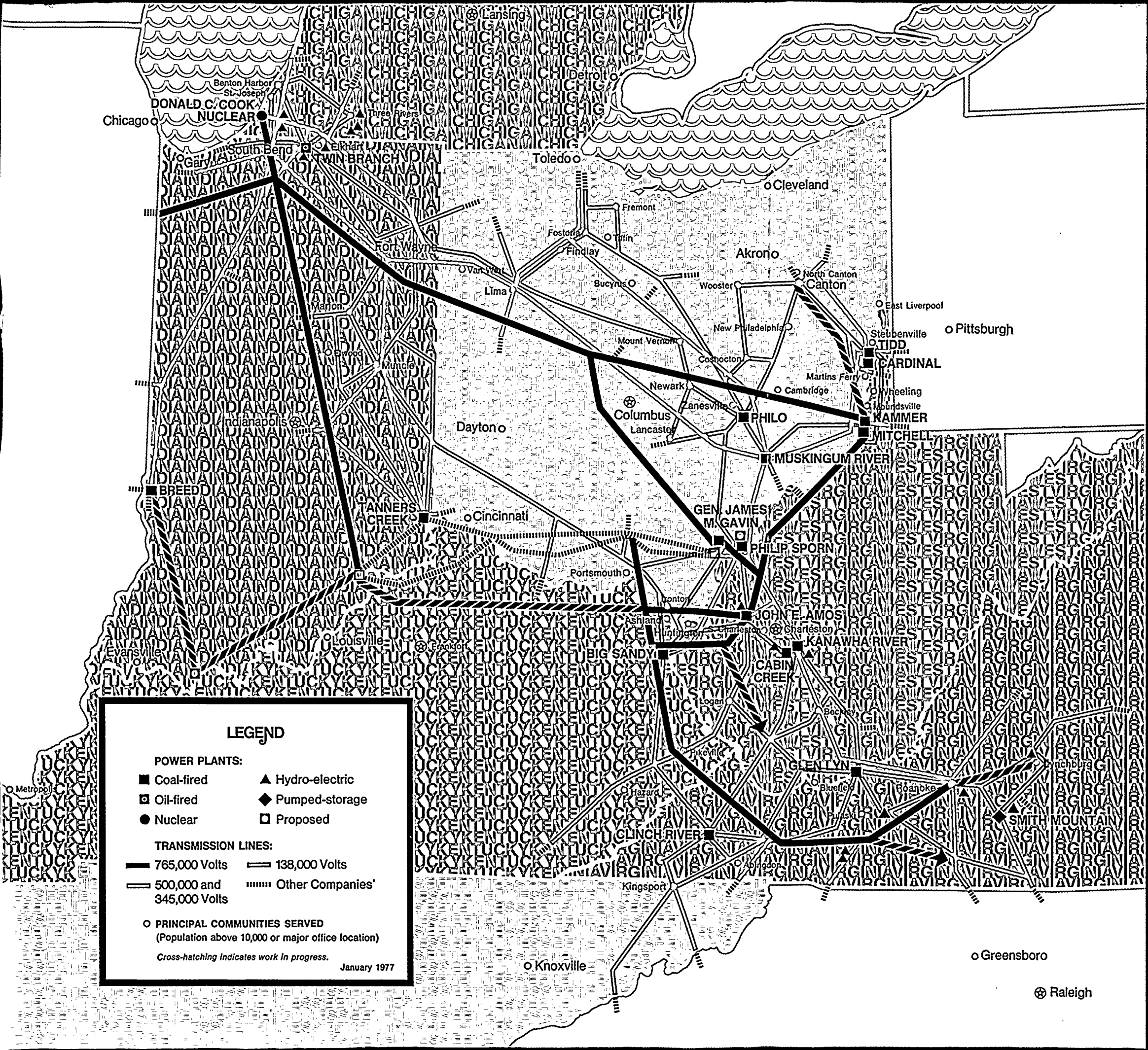
### GENERATING COMPANIES

BEECH BOTTOM POWER Co. (b) ..... Power, W.Va.  
CARDINAL OPERATING Co. (c) ..... Brilliant, Ohio  
CENTRAL OPERATING Co. .... New Haven, W.Va.  
INDIANA & MICHIGAN POWER Co. .... Fort Wayne, Ind.  
KANAWHA VALLEY POWER Co. .... Charleston, W.Va.  
OHIO ELECTRIC Co. .... Canton, Ohio

(a) Provides both electric and gas service

(b) Jointly owned with Allegheny Power System

(c) Jointly owned with Buckeye Power, Inc.





**AMERICAN ELECTRIC POWER**