Cooperative Power Association

1978 Annual Report

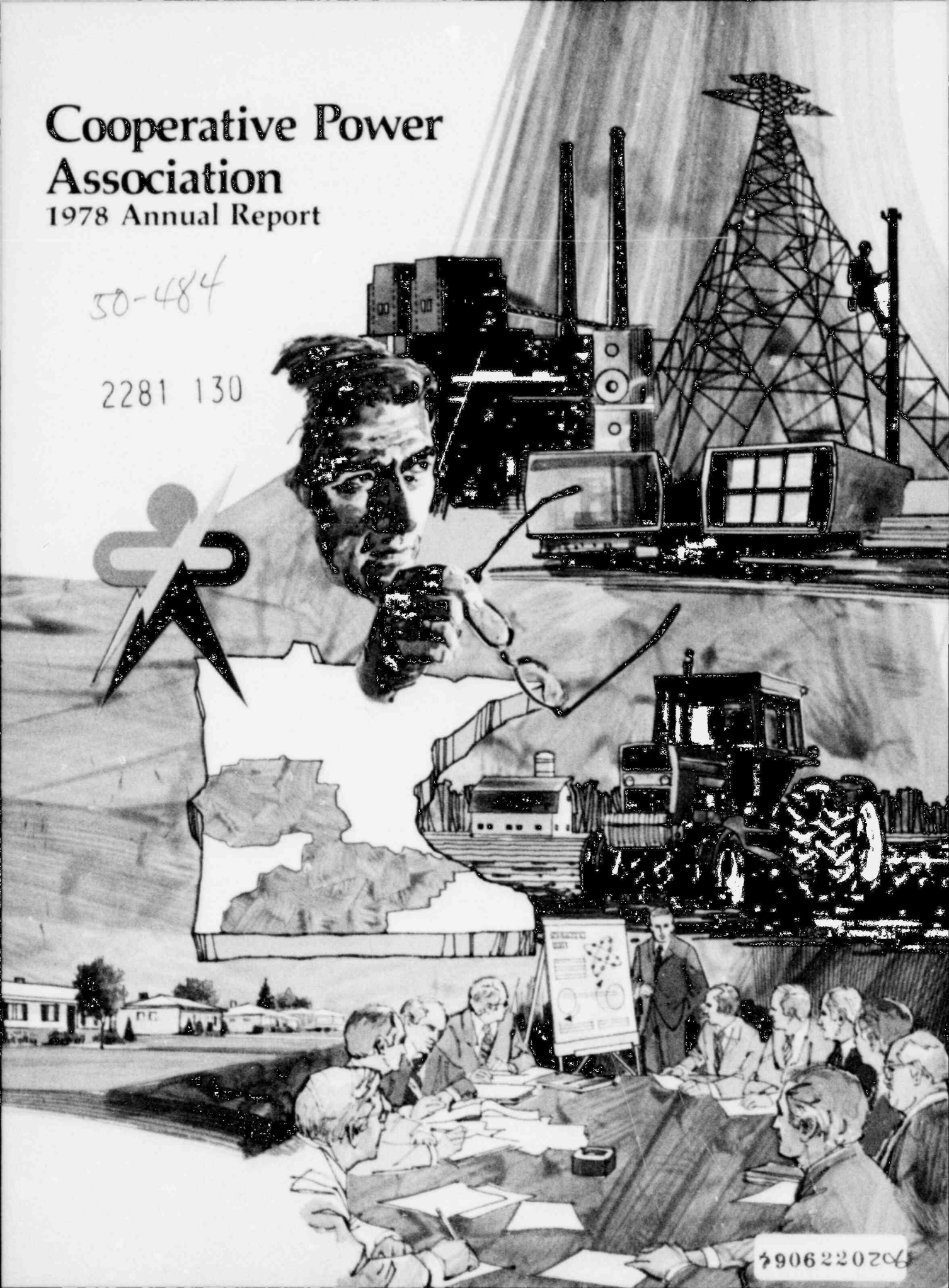
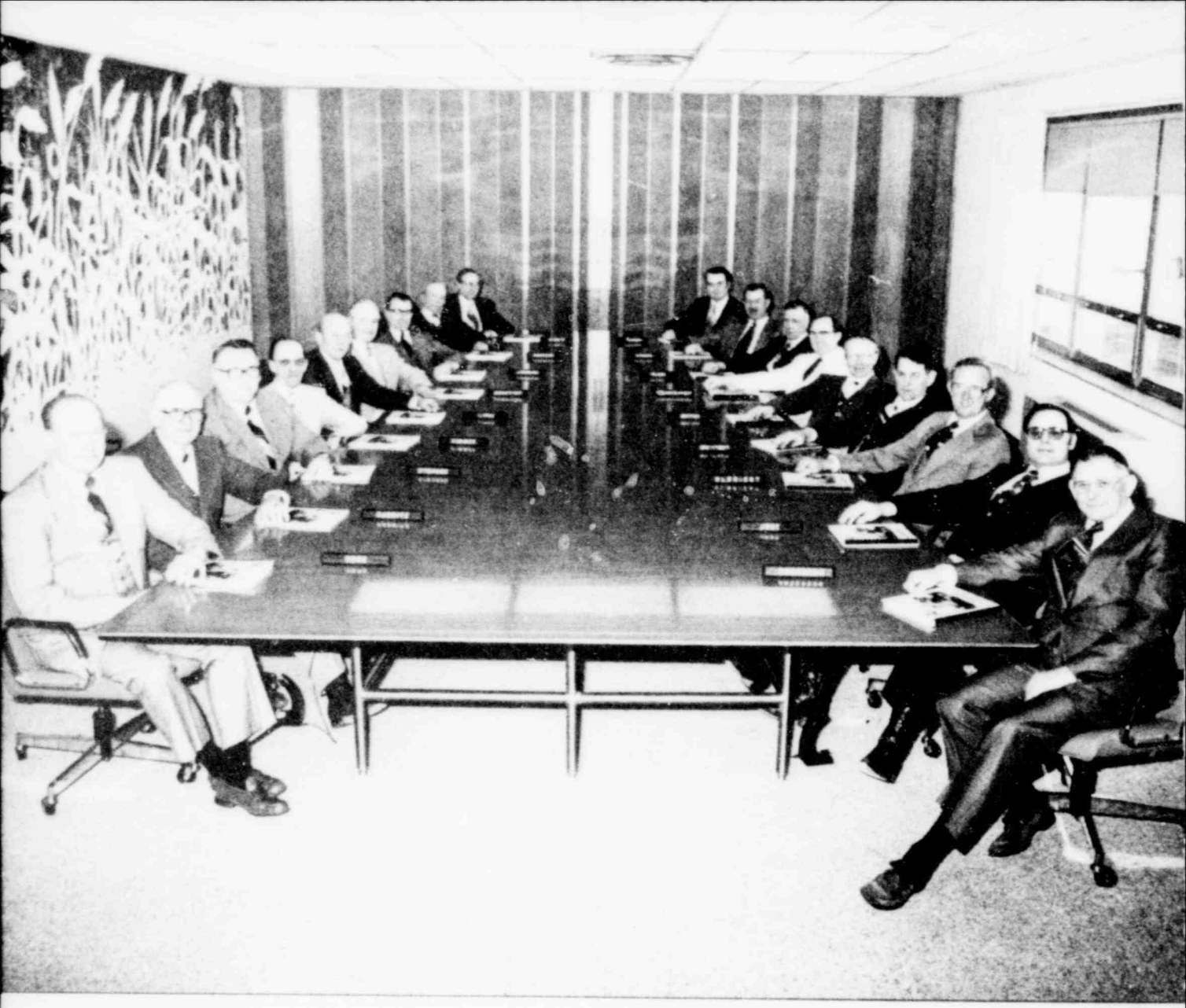


TABLE OF CONTENTS

Cooperative Power Association
3316 West 66th Street
Minneapolis, MN 55435

523 E. Bismarck Avenue
Bismarck, ND 58501

Coal Creek Station
P.O. Box 780
Underwood, ND 58576



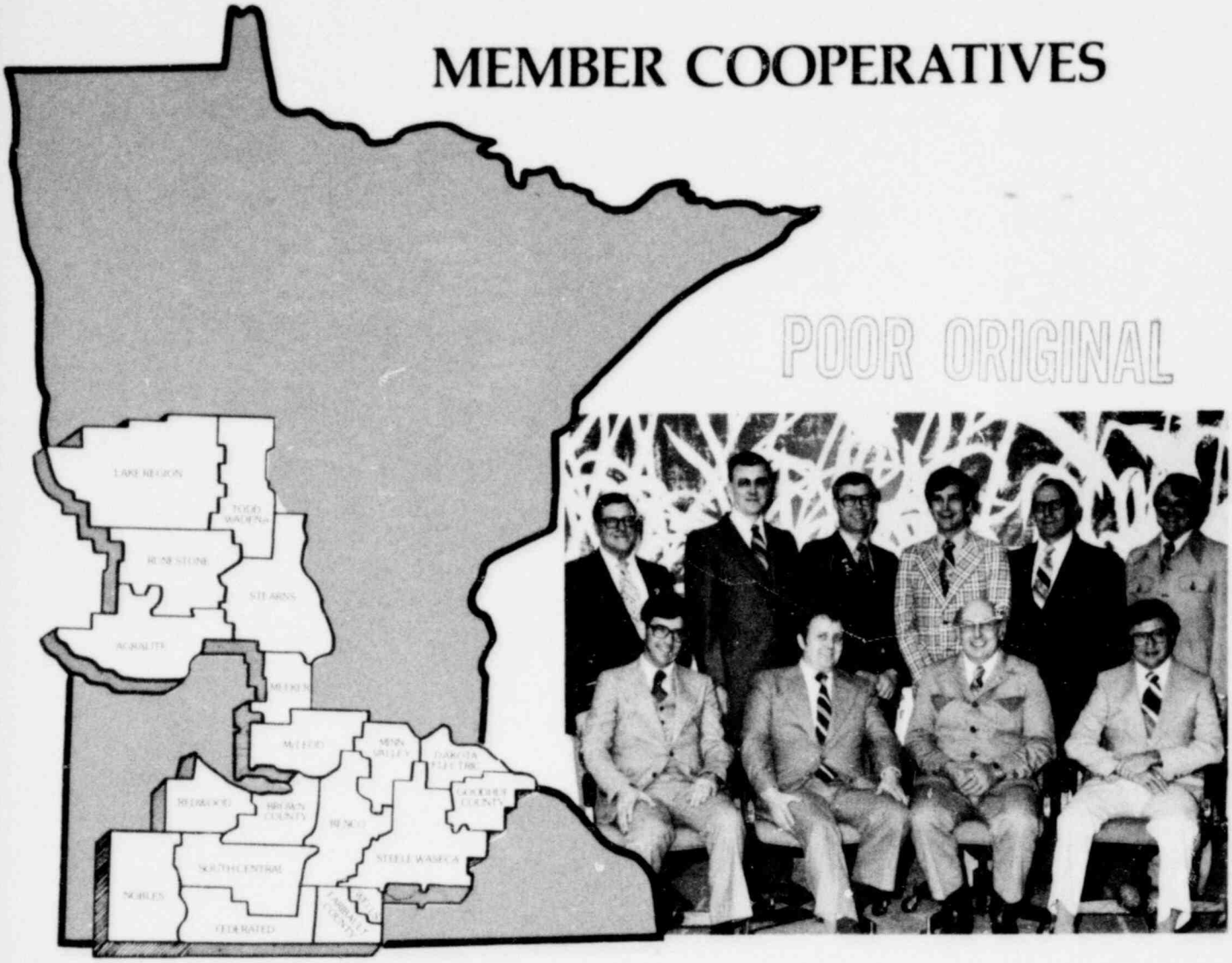
COOPERATIVE POWER ASSOCIATION BOARD OF DIRECTORS

Left, front to back: Jay York, Secretary, Nobles Cooperative Electric, Worthington; Richard Harbitz, 2nd Vice-President, South Central Electric Association, St. James; W. Gerald Stevens, Brown County Rural Electric Association, Sleepy Eye; Art M. Kimmes, Dakota Electric Association, Farmington; Orville J. Lipke, McLeod Cooperative Power Association, Glencoe; Elmer A. Scheffert, Steele Waseca Cooperative Electric, Owatonna; Martin Lohmann, Goodhue County Cooperative Electric Association, Zumbrota; Darwin Anderson, Runestone Electric Association, Alexandria; Gilbert Schmitz, Redwood Electric Cooperative, Clements.

Right, front to back: Charles L. Anderson, President, Meeker Cooperative Light and Power Association, Litchfield; Paul Jost, 1st Vice-President, Agralite Cooperative, Benson; Clemens Ulbricht, Treasurer, Federated Rural Electric Association, Jackson; William Whitney Jr., Faribault County Cooperative Electric Association, Frost; Edgar Meyer, Lake Region Cooperative Electric Association, Pelican Rapids; Don Frankhauser, Minnesota Valley Electric Cooperative, Jordan; Wendell Olson, Stearns Cooperative Electric Association, Melrose; Emil Stenzel, Wells Electric Association, Wells; Michael Thorson, Todd-Wadena Electric Cooperative, Wadena.

Not Pictured: Gordon Pioske, BENCO Electric Association, Mankato

MEMBER COOPERATIVES



MEMBER GENERAL MANAGERS

Front, left to right: William J. Motl, Wells Electric Association, Wells; Jon Bellgowan, Todd-Wadena Electric Cooperative, Wadena; Ben Janowski, McLeod Cooperative Power Association, Glencoe; Vernon Jutila, Runestone Electric Association, Alexandria.

Back, left to right: Albert Lennick, Redwood Electric Cooperative, Clements; Donald B. Larson, Steele Waseca Cooperative Electric, Owatonna; Donald E. Amundson, BENCO Electric Association, Mankato; Ramon Millett, Agralite Cooperative, Benson; Francis Fiebelkorn, Minnesota Valley Electric Cooperative, Jordan; Leslie R. Schrupp, Brown County Rural Electric Association, Sleepy Eye.

Not Pictured: C. Oscar Soderlund, Dakota Electric Association, Farmington; Marvin J. Johnson, Federated Rural Electric Association, Jackson; Duane Henkelman, Meeker Cooperative Light & Power Association, Litchfield; Clarence Peterson, Lake Region Cooperative Electric Association, Pelican Rapids; Eugene P. Sullivan, Stearns Cooperative Electric Association, Melrose; LeRoy O. Nelson, South Central Electric Association, St. James; Douglas E. Wallace, Nobles Cooperative Electric, Worthington; Cecil Holsing, Goodhue County Cooperative Electric Association, Zumbrota.

A REVIEW OF CPA'S 19 MEMBER SYSTEMS

	Miles of Line	Number of Consumers	kWh Purchased During 1978	% of kWh Increase over 1977
Agralite Cooperative, Benson Ramon Millett, General Manager*	2,724	4,491	90,890,058	5.3%
BENCO Electric, Mankato Donald Amundson, General Manager	1,894	6,337	107,864, 492	8.1
Brown County Rural Elect. Ass'n., Sleepy Eye Leslie R. Schrupp, Jr., General Manager	1,310	3,281	73,436,424	6.0
Dakota Electric Ass'n., Farmington Oscar Soderlund, General Manager	1,804	26,363	452,937,692	14.8
Faribault County Coop. Elect. Ass'n., Frost Donald Amundson, General Manager	662	1,367	24,034,640	3.7
Federated Rural Electric Ass'n. Jackson Marvin Johnson, General Manager	2,064	4,721	98,826,771	8.3
Goodhue County Coop. Electric Ass'n., Zumbrota Cecil Holsing, General Manager	1,010	3,402	65,466,418	3.6
Lake Region Co-op Electrical Ass'n., Pelican Rapids Clarence Peterson, General Manager	4,896	17,052	209,391,337	8.4
McLeod Coop. Power Ass'n., Glencoe Bernard Janowski, General Manager	1,710	5,046	98,388,560	5.1
Meeker Coop. Light & Power Ass'n., Litchfield Duane Henkelman, General Manager*	1,604	5,847	103,638,384	6.5
Minnesota Valley Electric Coop., Jordan Francis Fiebelkorn, General Manager	2,077	10,412	169,989,208	9.0
Nobles Cooperative Electric, Worthington Douglas Wallace, General Manager	2,075	4,774	87,325,598	5.9
Redwood Electric Cooperative, Clements Albert Lennick, General Manager	1,193	2,475	50,602,888	6.7
Runestone Electric Ass'n., Alexandria Vernon Jutila, General Manager*	2,560	8,269	119,822,008	8.9
South Central Electric Ass'n., St. James LeRoy Nelson, General Manager	1,982	3,881	101,698,106	6.7
Stearns Coop. Electric Ass'n., Melrose Eugene Sullivan, General Manager	2,872	12,126	202,257,659	7.8
Steele Waseca Coop. Electric, Owatonna Donald Larson, General Manager	1,794	6,003	94,643,880	4.7
Todd-Wadena Electric Coop., Wadena Jon Bellgowan, General Manager	1,860	5,499	96,616,833	9.2
Wells Electric Ass'n., Wells William Motl, General Manager	258	608	11,305,605	3.2
Total	36,349	131,954	2,259,138,561	8.6%

*Assumed position January 1, 1979

REPORT OF THE PRESIDENT AND GENERAL MANAGER

Charles Anderson
President

T.V. Lennick
General Manager

During the past year, Cooperative Power Association made significant strides in meeting its members energy demands through successful construction progress and organizational development. In many respects, it has been one of the most productive periods in our history.

We completed the construction of the St. Bonifacius Peaking Plant, our first combustion turbine unit. The 47 megawatt generator, designed to produce a small amount of electricity to satisfy demand during peak load periods, provides for emergency power needs and has greatly increased the flexibility of our system. The plant was completed on schedule and under budget — a significant accomplishment when construction delays and escalating costs are becoming the norm.

After the many long delays in the construction of the Minnesota segment of the dc transmission line, the last structure was erected on September 26, 1978. Testing of the line began almost immediately and is continuing in preparation for commercial operation. Our only disappointment is that vandalism on the line continues, costing our members millions of dollars in extra labor and materials. Despite this problem though, we anticipate that the line will be transmitting power to two-thirds of rural Minnesota by late summer 1979.

Progress at the Coal Creek Station is assuring us that we will have an adequate power supply in 1980. Construction continued through the year with major advances made on Units 1 and 2 and on common equipment. The water pretreatment, demineralizer, auxiliary boilers and most coal conveying equipment were turned over for CPA operation. A number of problems during the year such as the emergency generator failure and the 901 conveyor motor failure were successfully overcome.

We encountered some construction delays that caused Unit 1 commercial operation to slip while the abnormally severe winters of '77 and '78 also contributed to additional delays.

To alleviate some of the impact of these delays, Unit 1 was put on mechanical and electrical construction overtime from June through December. By the end of December, major construction on Unit 1 was nearing completion. Chemical cleaning and steam blow were completed in early spring 1979 and we feel confident that Unit 1 will be commercial by the target date of July 1.

Unit 2 construction continued with major progress being made on the steam generator and turbine generator assembly. The majority of the steel has been set with assembly of the water walls continuing. The turbine rotors have been installed for alignment and blade clearances. This continued progress should lead to the scheduled commercial operation date of November 1, 1980.

In preparation for the operation of the plant, coal mining at the Falkirk Mine began in late 1978. The assembly of the coal handling equipment was completed on schedule and the conveyors are now moving approximately 20,000 tons of lignite coal per week to the plant where it is being stockpiled for future use. Since an average of 6600 tons of coal will be needed every 24 hours when Unit 1 goes on line, production at the mine will increase greatly this summer.

Though our members will be assured of a reliable and adequate source of power from the Coal Creek Station, the price for that service will not come as cheaply as it has in the past. When the plant goes on line, rates will increase. This is due to the overwhelmingly high cost of building new power plants. Construction costs have soared 300 percent in the past 12 years due to inflation, pollution control regulations and high interest rates on borrowed capital. In 1967, a utility could plan, design and construct a generating facility for as little as $150-$160 per kilowatt of installed capacity. Today, utilities are paying $700,$800 and even more per kilowatt of installed capacity.

The final cost of Coal Creek will be about $700 per kilowatt of installed capacity. Though this cost is high, it is still below the national average of about $850 per kilowatt. If present trends continue, coal fired plants may cost as much as $1000 per kilowatt of installed capacity in the early 1980's. It is evident, then, that rate increases will be needed to continue providing the dependable electric service we have become accustomed to.

With these rising costs in energy, it is necessary that we continue to practice conservation and become involved in load management. CPA is pursuing its voluntary conservation program which encourages members to reduce their use of electricity during peak periods. New load management programs are being developed to assist our members in the wise use of energy. The success of these programs indicates that our members realize the power problems we face and are willing to maximize their use of each kilowatt hour.

Conservation alone, however, is not eliminating the growth in electrical useage. During 1978, CPA's energy sales rose 8.4 percent over the previous year. If this trend continues, additional generation will be required for the mid 1980's.

CPA recoginizes its responsibility in meeting its members' future power needs and is currently examining its alternatives. Our long-range plans include the possibility of building another generating plant, purchasing power from other utilities or becoming joint owners in another plant in the area.

Our most concrete plan, the Tyrone Energy Park, suffered a major setback recently when the Wisconsin Public Service Commission denied the construction permit application for this 1100 megawatt nuclear unit. Combined with the difficulties experienced at the Three Mile Island nuclear plant in Pennsylvania, we are faced with a very difficult decision to make. While we firmly believe that the answer to the energy problem includes increased development of nuclear power, we are faced with potential delays on the Tyrone unit that may well force us to change our plans. We have joined in an appeal to the Wisconsin courts to reverse the Wisconsin Public Service Commission ruling and we will monitor the progress of the appeal and assess our position continuously to determine if the Tyrone Energy Park remains a viable option for our capacity needs.

Declining oil, gas and fossil fuel reserves are creating a major change in the power supply industry and causing us to search for alternative sources of power. CPA is continuing to study the possibilities of the breeder reactor, heat storage and methanol fuel conversion. In addition, we are participating in an experimental wind generating project to determine whether solar energy could become a more viable source of power in the future.

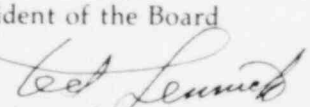
The complexities of power supply in the rapidly changing world today can often create additional problems and demands for a utility. With our rapid growth these past few years and with a major power plant coming on line next year, CPA has been subject to many changes and developments within the organization. Last year we hired the management consulting firm of Theodore Barry & Associates to examine our operations and goals to ensure that we have continued to function efficiently throughout our rapid development. Their report reflected many of the frustrations and intricacies we face as a power supplier and as a growing organization and recommended several areas for improvement. Many of these recommendations are being implemented in the hope that CPA will become a more unified and efficient organization.

One of the more visible changes we will be making is a move to a new headquarters building. Presently in the planning stage, a new building will give us needed space for a growing staff and a new computer system that will help monitor loads and control generation. We are confident that this improvement, and others, will allow us to better serve our quarter of a million members.

The major accomplishments this year — and many of the smaller yet still important ones left unmentioned — were achieved only through the dedication and expertise of our directors, managers and staff. We are grateful for their service. As we continue in our functions and responsibilities of the past and enter into the new projects and challenges of the coming year, we will depend even more on the skills and professionalism of our employees and the wisdom and foresight of those who determine the policies of CPA.

Respectfully,

Charles Anderson
President of the Board



T. V. Lennick
General Manager

2281 136

FINANCIAL STATEMENTS
1978 ANNUAL REPORT
COOPERATIVE POWER ASSOCIATION

FINANCIAL HIGHLIGHTS
(DOLLARS IN THOUSANDS)

	1978	1977	% CHANGE
Operations:			
Operating Revenues	$ 40,941	$ 37,983	+ 7.8%
kWh Delivered (in millions)	2,259	2,081	+ 8.6%
kW Peak Demand (in thousands)	489	488	+ 0.2%
Purchased Power	$ 32,117	$ 30,496	+ 5.3%
Net Margins	$ 2,421	$ 2,003	+ 20.9%
Financial Position:			
Electric Utility Plant	$512,783	$340,456	+ 50.6%
Construction Work in Progress—CU Project	$455,312	$294,378	+ 54.7%
Coal Mine	$ 52,343	24,236	+115.9%
Outstanding Long-term Debt	$550,573	$328,136	+ 67.8%
Member and Patron Equities	$ 8,385	$ 5,964	+ 40.6%

TREASURER'S REPORT

The financial statements of Cooperative Power Association together with the accountant's opinion from Deloitte Haskins & Sells appear on pages 12 to 18.

The statements for 1978 show once again a resumption of the stronger energy consumption trend that prevailed during the last ten years. After a modest increase approximating 5% in 1977, kilowatt hour deliveries to member systems rose 8.6% in 1978. This rise reflects a 5.2% increase in average usage per consumer while the number of connected consumers continues to show a consistent increase, 3% in 1978.

Revenues were up 7.8% for 1978, slightly less than the increase in kilowatt hours delivered, indicating a fractional decline in the overall average cost per kWh for the first time since 1969. Since the end of last year, rate increases for 1979 have been instituted to reflect costs incurred in the Coal Creek Project. Operating margins were slightly higher than last year, and total margins rose 21% reflecting higher interest income rates and larger credits for CPA's own capital used in financing projects during construction.

Construction activity continues at a very high level as construction expenditures totaled $202 million of which $188 million represented CPA's share of the construction costs of the Coal Creek Project for the generating plant, the transmission lines, and the financing of the coal mine. The remaining $14 million are principally expenditures for the Tyrone Energy Park Nuclear Plant, an oil-fired peaking plant at St. Bonifacius, various transmission extension projects, and a microwave communications network and a load monitoring system. The Tyrone Energy Park construction schedule has since suffered a serious setback when, in March 1979, the Public Service Commission of Wisconsin denied the application for a Certificate of Need for the Tyrone Nuclear Project.

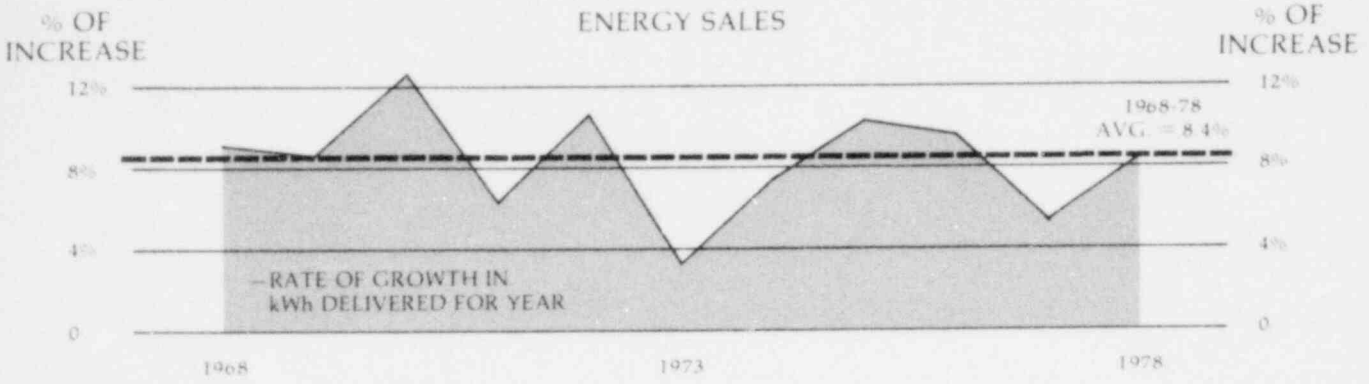
During the last year, lines of credit obtained through the National Rural Utilities Cooperative Finance Corporation (CFC) were expanded to $70 million to provide interim construction financing for the Coal Creek Project and various other CPA projects under construction. Long-term financing for these projects had been obtained primarily through loans insured or guaranteed by the REA. However, during 1978, a tax-exempt pollution control bond issue amounting to $50 million was successfully placed as one of a grouping of issues guaranteed by CFC. In addition, the first phase of a leveraged lease financing for certain coal mining equipment was concluded in 1978 with completion of another larger portion sought for 1979. Each of these financing alternatives has achieved significant interest cost reductions for the consumer.

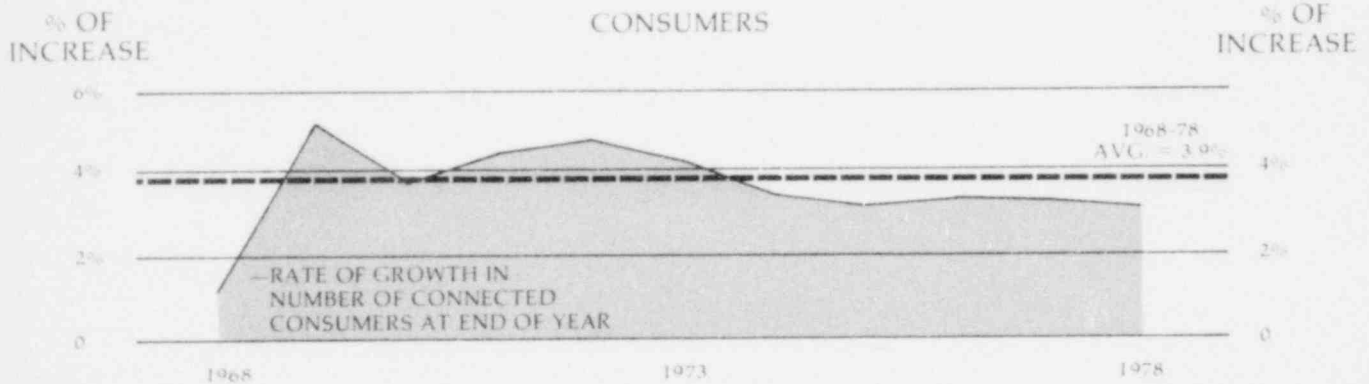
As CPA's capital requirements grow, we intend to expand on these opportunities or seek other financing alternatives in an ongoing effort to provide power at the lowest cost for our member systems and for their consumers.

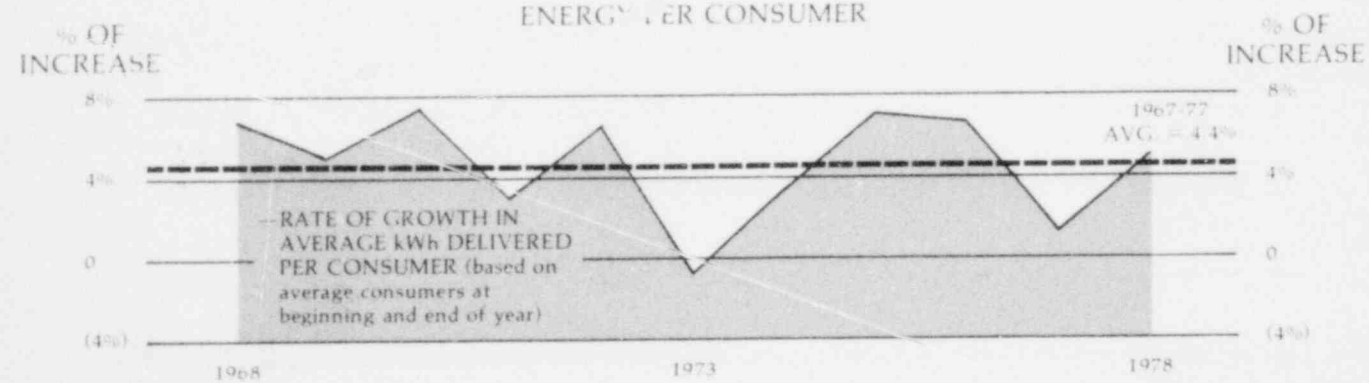
Sincerely,

Clemens Ulbricht

COOPERATIVE
POWER
ASSOCIATION







10 YEAR SUMMARY

POWER SUPPLY SYSTEM:

For the Year:	**1978**	**1977**	**1976**	**1975**
Revenue from member systems (c)	$40,923	$37,938	$30,892	$24,332
Total operating margin (deficit) (c)	$ 1,548	$ 1,476	$ 1,975	$ 872
kWh delivered (in millions)	2,259	2,081	1,975	1,795
Cost per kWh delivered (in mills)	18.1	18.2	15.6	13.6
kW peak demand (in thousands) (a)	489	488	438	412
At Year End:				
Miles of transmission line	1,232	1,223	1,206	1,180
Cost of utility plant in service (c)	$41,756	$31,248	$28,815	$26,620
Number of employees	218	141	50	28

MEMBER DISTRIBUTION SYSTEMS:

For the Year:				
Number of member systems	19	19	19	19
Combined revenues (c)	$70,239	$62,083	$52,395	$42,579
Average kWh per consumer (b)	17,374	16,522	16,217	15,218
At Year End:				
Miles of distribution line	36,349	35,947	35,522	35,087
Number of substations	221	215	210	206
Number of connected consumers	131,954	128,084	123,814	119,753
Number of employees	646	646	605	591

NOTES:

(a) Based on demand billed to member systems.
(b) Based on average number of consumers at beginning and end of year.
(c) Dollars in thousands

1974	1973	1972	1971	1970	1969	1968
$17,913	$16,247	$13,875	$12,276	$10,529	$ 7,941	$ 7,718
$ 753	$ (2)	$ (22)	$ 195	$ (1)	$ (506)	$ 25
1,623	1,505	1,455	1,311	1,224	1,032	951
11.0	10.8	9.5	9.4	8.6	7.7	8.1
363	334	335	300	282	245	229
1,141	1,060	979	964	854	741	564
$24,351	$20,587	$19,043	$17,885	$14,139	$ 9,631	$ 5,973
17	11	10	10	9	8	7
19	19	19	19	19	18	18
$35,265	$30,701	$28,047	$25,585	$23,120	$21,054	$18,474
14,221	13,695	13,818	13,014	12,648	11,815	11,248
34,740	34,351	34,088	33,854	33,371	31,080	30,844
203	192	181	174	170	158	146
116,150	112,112	107,681	102,908	98,570	94,979	90,373
586	562	555	541	556	525	484

ACCOUNTANTS' OPINION

To the Board of Directors of
Cooperative Power Association:

We have examined the balance sheets of Cooperative Power Association as of December 31, 1978 and 1977, and the related statements of revenues and members' patronage capital and changes in financial position for the years then ended. Our examinations were 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.

In our opinion, the aforementioned financial statements present fairly the financial position of the Association at December 31, 1978 and 1977, and the results of its operations and changes in its financial position for the years then ended, in conformity with generally accepted accounting principles applied on a consistent basis.

Deloitte Haskins & Sells

Minneapolis, Minnesota
April 10, 1979

BALANCE SHEETS

ASSETS	December 31 1978	1977
ELECTRIC UTILITY PLANT (Notes 1 and 3):		
Plant in service	$ 41,755,754	$ 31,247,801
Construction work in progress	471,027,038	309,208,488
Less accumulated provision for depreciation and amortization	(7,115,387)	(6,051,314)
Electric utility plant — net	505,667,405	334,404,975
COAL MINE (Note 3):		
Coal leaseholds	2,360,904	
Equipment under construction	23,928,492	9,724,653
Advances to Falkirk Mining Company for development of coal mine	26,053,464	14,511,280
Coal mine	52,342,860	24,235,933
OTHER ASSETS AND INVESTMENTS:		
Funds held by trustee — Pollution Control Revenue Bonds (Note 4):		
Construction fund	21,925,738	
Debt service reserve fund	5,978,766	
Investments — at cost (Note 5)	4,142,044	1,267,198
Total other assets and investments	32,046,548	1,267,198
CURRENT ASSETS:		
Cash — general	209,294	250,585
Cash — restricted	401,759	403,473
Accounts receivable	6,520,107	4,852,546
Coal inventory (Note 3)	800,529	
Fuel oil inventory — at average cost	175,185	
Deferred power costs (Note 2)	1,422,479	444,889
Prepayments	172,751	160,287
Total current assets	9,702,114	6,111,780
UNAMORTIZED DEBT EXPENSE	1,055,750	
TOTAL ASSETS	$600,814,677	$366,019,886
LIABILITIES		
MEMBER AND PATRON EQUITIES:		
Memberships	$ 2,100	$ 1,900
Patronage capital	8,307,690	5,887,000
Members' contributions for debt service	74,866	74,866
Total member and patron equities	8,384,656	5,963,766
LONG-TERM DEBT (Note 3)	550,573,095	328,135,984
CURRENT LIABILITIES:		
Long-term debt due within one year	725,000	717,000
Accounts payable	19,186,727	15,822,846
Construction retainages payable	16,708,197	12,535,192
Members' deposits	1,639,093	1,639,093
Property taxes accrued	1,178,213	936,190
Interest accrued	2,129,387	103,181
Other expenses accrued	290,309	166,634
Total current liabilities	41,856,926	31,920,136
TOTAL LIABILITIES	$600,814,677	$366,019,886

See accompanying Notes to Financial Statements.

COOPERATIVE
POWER
ASSOCIATION

STATEMENT OF REVENUES AND MEMBERS' PATRONAGE CAPITAL

	Year ended December 31 1978	1977
REVENUES:		
Billed revenues and patronage capital	$42,106,528	$38,678,864
Less billed revenues in excess of power costs (Note 2)	1,165,852	696,190
Net revenues	40,940,676	37,982,674
OPERATING EXPENSES:		
Purchased power	32,116,668	30,496,254
Generation costs	238,661	
Transmission of electricity by others	1,788,002	2,182,123
Transmission expense — operation	253,195	231,721
Transmission expense — maintenance	234,887	284,677
Administrative and general expense	1,479,643	1,190,547
Depreciation and amortization	1,058,531	744,945
Property and payroll taxes	1,346,074	882,740
Interest and amortization of debt expense — net of interest earned on construction funds held by trustee	32,528,497	15,922,349
Interest charged to construction — credit (Note 1)	(31,651,827)	(15,429,048)
Total operating expenses	39,392,331	36,506,308
OPERATING MARGIN	1,548,345	1,476,366
OTHER INCOME:		
Allowance for funds used during construction (Note 1)	501,969	398,707
Interest income	290,354	82,738
Distribution and financing cooperative capital credits	80,022	44,922
Total other income	872,345	526,367
NET MARGIN	2,420,690	2,002,733
PATRONAGE CAPITAL AT BEGINNING OF YEAR	5,887,000	3,884,267
PATRONAGE CAPITAL AT END OF YEAR	$ 8,307,690	$ 5,887,000

See accompanying Notes to Financial Statements.

STATEMENT OF CHANGES IN FINANCIAL POSITION

	Year ended December 31	
	1978	1977
FUNDS WERE PROVIDED BY:		
Net margin	$ 2,420,690	$ 2,002,733
Items not requiring outlay of working capital in current period:		
Depreciation and amortization	1,058,531	754,735
Amortization of debt expense	36,018	
Distribution and financing cooperative capital credits	(80,022)	(44,922)
Interest earned on debt service reserve fund held by trustee	(167,166)	
Funds provided by operations	3,268,051	2,712,546
Repayment of advances by Falkirk Mining Company	92,666	
Proceeds from issuance of:		
Long-term debt (net of funds held by trustee)	181,165,987	173,616,000
Notes payable — to be refinanced	15,300,000	13,500,000
Memberships	200	
Total	199,826,904	189,828,546
FUNDS WERE USED FOR:		
Electric utility plant and coal mine expenditures	201,567,879	206,528,591
Reductions of long-term debt	718,889	711,501
Increase in investments	2,794,824	283,903
Debt issue expense on Pollution Control Revenue Bonds	1,091,768	
Total	206,173,360	207,523,995
(DECREASE) IN WORKING CAPITAL	$ (6,346,456)	$ (17,695,449)
DETAIL OF (DECREASE) IN WORKING CAPITAL:		
Cash and temporary cash investments	$ (43,005)	$ (4,710,186)
Accounts receivable	1,667,561	1,023,565
Inventory	975,714	
Deferred power costs	977,590	(70,252)
Prepayments	12,474	135,707
Long-term debt due within one year	(8,000)	(14,000)
Accounts payable	(3,363,881)	(5,977,087)
Construction retainages payable	(4,173,005)	(8,019,081)
Interest accrued	(2,026,206)	(18,739)
Property taxes and other expenses accrued	(365,698)	(45,376)
TOTAL	$ (6,346,456)	$ (17,695,449)

See accompanying Notes to Financial Statements.

NOTES TO FINANCIAL STATEMENTS

COOPERATIVE POWER ASSOCIATION

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

System of Accounts — The accounting records of Cooperative Power Association (CPA) conform to the uniform system of accounts prescribed by the Federal Energy Regulatory Commision and the Rural Electrification Administration (REA).

Under such system, utility plant is stated at original cost and the cost of additions includes contracted work, direct labor and materials, allocable overheads, interest charged to construction, and allowance for funds used during construction.

Interest charged to construction (borrowed funds) and allowance for funds (other than borrowed funds) used for construction is included in construction work in progress and credited to operating expenses and other income, respectively. The rates applied to construction work in progress reflect the actual interest rates for borrowed funds (reduced by the effect of interest earned on construction funds held by trustee) and the prevailing short-term investment rates for other than borrowed funds.

CPA is exempt from Federal and state income taxes.

Depreciation and Amortization — The provisions for depreciation and amortization of electric utility plant are provided on the straight-line method based on estimated service lives of the property. Such provisions as a percent of the average balance of depreciable property were 3.17% in 1978 and 2.68% in 1977.

Reclassifications — Certain reclassifications have been made to 1977 financial statements to conform to the 1978 presentation.

2. MEMBER SERVICE CONTRACTS

CPA has long-term wholesale power contracts with each of its members whereby it agrees to provide all of the power required by the member system to the extent that CPA has such power available. Power is provided to its members at cost and, accordingly, any variation between cost (defined as power costs incurred less certain deferred power costs incurred in December after the billing to its members) and the aggregate amounts collected is included in accounts receivable or accounts payable. In addition to the cost of power, the members agree to pay a billing rate which is projected to cover all other costs and necessary reserves (operating margins).

3. POWER SUPPLY EXPANSION AND FINANCING

CU Project — CPA is participating to the extent of 56% in the construction of two 500 megawatt generating units in North Dakota and related transmission facilities (CU Project). The first unit is scheduled for completion in 1979 with the second unit to follow in 1980 (See Note 6). The unused financing commitment from REA for either insured or guaranteed loans for the CU Project is $198 million at December 31, 1978 (of which CPA's share is $111 million).

Coal Mine — CPA and the other co-owner, United Power Association, have entered into an agreement with Falkirk Mining Company for its development of a coal mine adjacent to the CU Project which will supply the plant's fuel supply. The co-owners are required to provide financing for all costs associated with the development of the mine. CPA's advances at December 31, 1978 have been used by Falkirk Mining Company as follows:

Coal lands and leaseholds	$ 1,019,750
Coal mine equipment	4,204,761
Less allowance for depreciation, depletion and amortization	(92,666)
Construction in progress	16,203,419
Mine development costs	1,495,152
Working capital	3,223,048
Total advances	$26,053,464

Coal will be purchased from Falkirk Mining Company at the cost of production (including depreciation, depletion and amortization) plus an agreed profit. Price of coal during the development period is set based on the per ton cost of production estimated to be incurred after the development period plus an agreed profit. Production costs in excess of this price (less an agreed profit) are included in mine development costs.

Falkirk Mining Company will repay the advances to CPA in an amount equal to the depreciation, depletion, and amortization. Coal mine equipment is amortized on a straight-line method over their estimated useful lives. Amortization of coal lands is calculated on the units-of-production method based on estimated recoverable tonage . Mine development costs will also be amortized, after the development period, on the units-of-production method.

The co-owners are also having certain coal mining equipment constructed. The equipment is presently under construction at the coal mine and the co-owners tentatively plan to finance the equipment on a long-term basis through arrangements for a leveraged lease. The co-owners have also unconditionally guaranteed a leverage lease which was entered into by the coal mining company for approximately $5 million (of which CPA's share of the guarantee is $2.8 million).

Tyrone Energy Park Nuclear Plant — In 1977 CPA entered into a participation agreement with Northern States Power Company and two other electric utilities providing for a 17.4% ownership by CPA in the Tyrone Energy Park project, an 1100 megawatt nuclear unit to be constructed near Durand, Wisconsin. A 1978 supplement to the agreement limits CPA's potential commitment to invest in the project to $12,000,000. When this amount ceases to represent a 17.4% pro-rata share of total project commitments, then CPA's percentage ownership will be reduced pro-rata. CPA can decide at any time to increase the $12,000,000 limit. CPA has financed the project on an interim basis through a term loan which is due in 1982 from National Rural Utilities Cooperative Finance Corporation (CFC). If the nuclear plant is approved by the Public Service Commission of Wisconsin (see Note 6 regarding current Commission denial of approval), CPA has a loan guarantee commitment of $224 million from REA.

4. LONG-TERM DEBT

	December 31	
	1978	1977
Mortgage notes payable to United States of America:		
2% due through 2011	$ 23,683,649	$ 24,384,984
5% due 1979 through 2011	3,376,446	2,405,000
Federal Financing Bank Promissory Notes — from 7.42% to 9.03% due 1982 through 2012	430,638,000	281,463,000
CFC term loan due 1982, interest at 1/2% over prime	7,400,000	
City of Underwood, North Dakota, Pollution Control Revenue Bonds:		
Serial Bonds — from 5.00% to 6.75% due 1980 through 1999	20,995,000	
Term Bonds 7.00% due 2008	29,305,000	
Notes payable — to be refinanced	35,900,000	20,600,000
Total	551,298,095	328,852,984
Less due within one year	725,000	717,000
Total	$550,573,095	$328,135,984

CPA has lines of credit of $70 million from CFC for interim financing for its power supply projects. Outstanding notes payable have been classified as long-term debt since commitments have been obtained from the REA for long-term financing of the major power supply project under construction.

The Pollution Control Revenue Bonds are unconditionally guaranteed by CFC. The bond agreement requires that the unexpended portion of the bond proceeds be held in escrow by a trustee in a construction fund to reimburse CPA for costs when incurred in construction of the pollution control facilities at the CU Project. The agreement also requires that a debt service reserve fund be established for the last principal and interest payment of the term bonds. The term bonds are subject to sinking fund redemption at 100% of the

principal amount prior to their stated maturity date beginning in 1999 through 2008.

All assets of CPA are pledged as collateral to the long-term debt.

5. CAPITAL TERM CERTIFICATES

When CPA joined CFC in 1970 they agreed to purchase 3% Capital Term Certificates of CFC through 1984. Future annual purchases, which are based on operating revenues, are estimated by management to aggregate $4,511,000. In addition to this agreement, the Pollution Control Revenue Bonds agreement required CPA to purchase 3% certificates in the amount of $2,515,000 in 1978. Investments in 3% Capital Term Certificates amounted to $3,995,773 at December 31, 1978 and $1,200,953 at December 31, 1977.

6. CONTINGENCIES AND LITIGATION

On March 6, 1979 the Public Service Commission of Wisconsin issued an order denying the application for a certificate of need for the proposed Tyrone Energy Park Nuclear Plant in which Cooperative Power Association is a participant (Note 3). An appeal of this decision has been filed in court. CPA has included $9,192,000 (excluding $1,045,000 of interest charged to construction and other charges) in construction work in progress at December 31, 1978 for this plant. Under the participation agreement CPA will be liable for an additional $2,808,000. In the opinion of management, if the nuclear plant is abandoned, CPA will transfer the costs to deferred charges and amortize the costs to expense over a period of time and recover such amortization through billings to its members.

A lawsuit has been instituted by opponents of the CU Project in the United States District Court for the District of Minnesota. The defendants in the lawsuit were the United States of America, the Secretary of Agriculture, the Administrator of the REA, the District Engineer of the U.S. Army Corps of Engineers, United Power Association, and CPA. The object of the lawsuit is to obtain a determination that the government proceeded improperly in approving the CU Project and in providing the cooperatives with loans or loan guarantees for the financing of the project and the financing of the development of the coal supply. The plaintiffs sought a temporary restraining order to prevent any work on the project or any further funding of the project during the pendency of the lawsuit. This was denied. Thereafter the plaintiffs sought a preliminary injunction for the same purposes and on March 10, 1978 this was also denied, the court finding, among other things, that the plaintiffs had failed to demonstrate substantial probability of success on the merits and that the plaintiffs' delay in filing the action would bar the plaintiffs from the injunctive relief sought. In the opinion of CPA's legal counsel there is not a substantial probability that the plaintiffs will succeed on the merits in this action. If the courts should ultimately determine that REA loans or loan guarantees are not available for coal mine development, however, it would be necessary for the cooperatives to repay funds advanced for that purpose and to arrange alternative financing.

In December 1977 a second action was brought in the same court by opponents of the CU Project, naming CPA, United Power Association, and a number of other parties as defendants. The lawsuit asserts claims under the Federal Civil Rights Act, claiming that the defendants have deprived plaintiffs (landowners and citizens along the transmission line right-of-way) of their constitutional rights by instituting civil and criminal actions against them in the state courts. The civil actions complained of have included condemnation proceedings to acquire the necessary right-of-way for the transmission line, actions to enjoin interference with construction, and damage claims for such interference. A motion for a preliminary injunction in this proceeding has been denied and many of the defendants (although neither of the cooperatives) have been dismissed from the lawsuit. In the opinion of CPA's legal counsel, the plaintiffs are not likely to prevail in this action.

Actions and proceedings are pending to acquire right-of-way by eminent domain in Minnesota and to restrain opponents of the CU Project from interference with construction.

In the opinion of the management, should any litigation or proceedings postpone the scheduled completion date of the CU Project, such delay could significantly increase the costs of the project and, subsequently, increase the rates necessary to recover the higher costs.

CPA has a long-term purchase power agreement with a Wisconsin Cooperative. On June 30, 1978, the Wisconsin Department of Revenue notified the Wisconsin Cooperative of an additional assessment of sales tax on sales of power under this agreement. An appeal is being prepared to the Tax Appeals Commission of Wisconsin. The outcome of this case is uncertain at this time. If the appeal is unsuccessful, CPA may be required to pay approximately $500,000. Such an amount would be recovered through billings to its members.

RESEARCH

When the cost of energy began to rise and our sources of traditional fuels started to diminish, power suppliers began searching for new energy reserves. Some of the potential resources being researched and developed are as old as the wind. Others are the result of modern technology.

Some of our newer energy options are not yet technologically feasible or economically practical, while more conventional sources are becoming so regulated by government agencies and so costly that they are nearly impossible to develop.

Reserach is still continuing, however, and with it has emerged a new philosophy — the wise use of power. For many years, energy reserves were thought to be abundant and power suppliers encouraged the world to make use of them. Today, power suppliers believe that we should continue to use and benefit from our energy supplies, but that we should use them wisely.

CONSERVATION

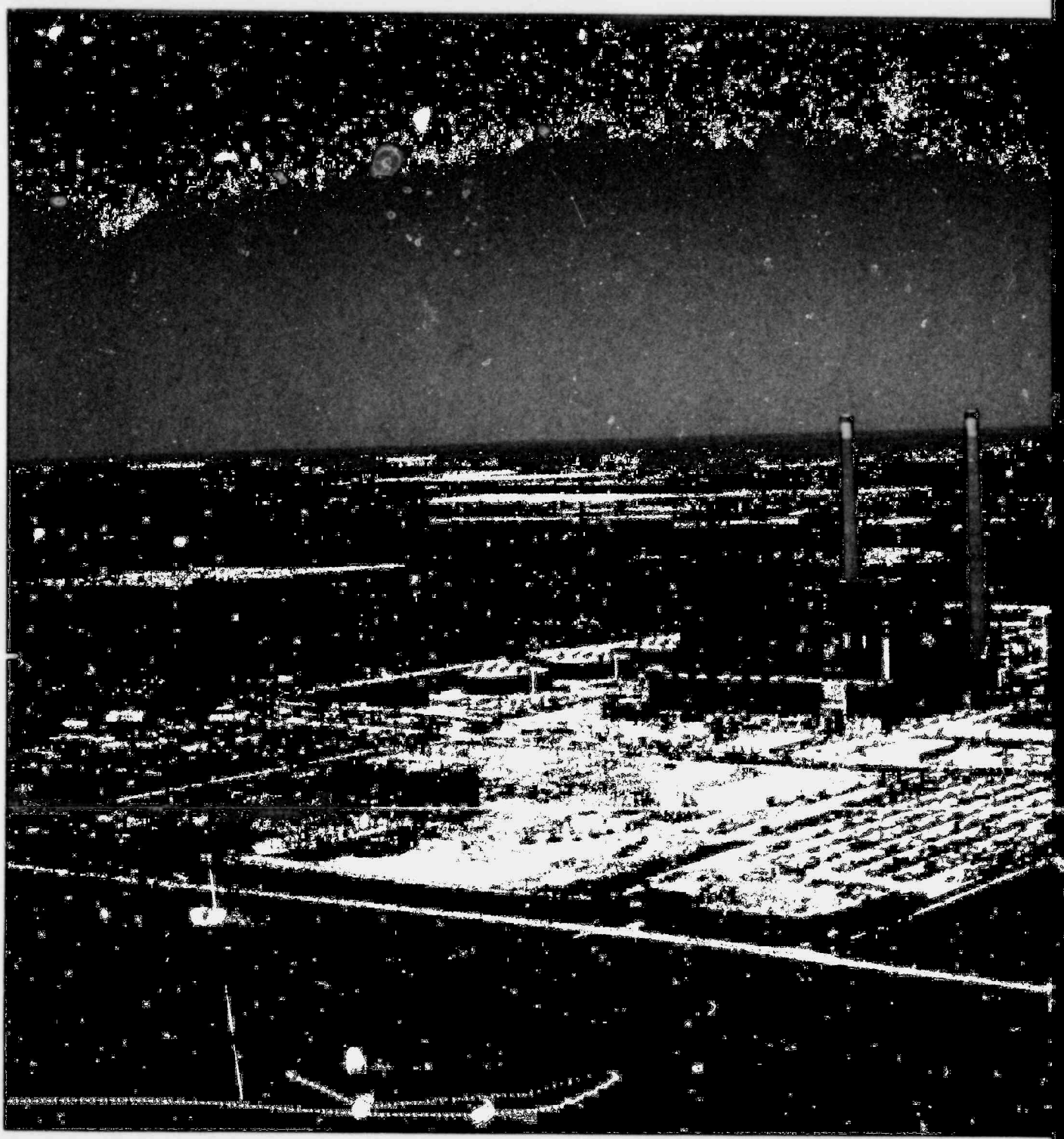
Cooperative Power Association believes two effective ways of easing our energy problems is consumer conservation and load management. Member-consumers are encouraged to restrict their energy use during peak periods and to wisely use off peak power whenever possible. Not only will this help save fuel resources, but it could also assist consumers in controlling rising power rates. Education programs encouraging the use of insulation and energy efficient appliances have also been developed to help our members adapt to the change in energy useage.

Other load management efforts are being developed by the power supply industry and if proven successful, will provide us with significant savings in generating cost in the future.

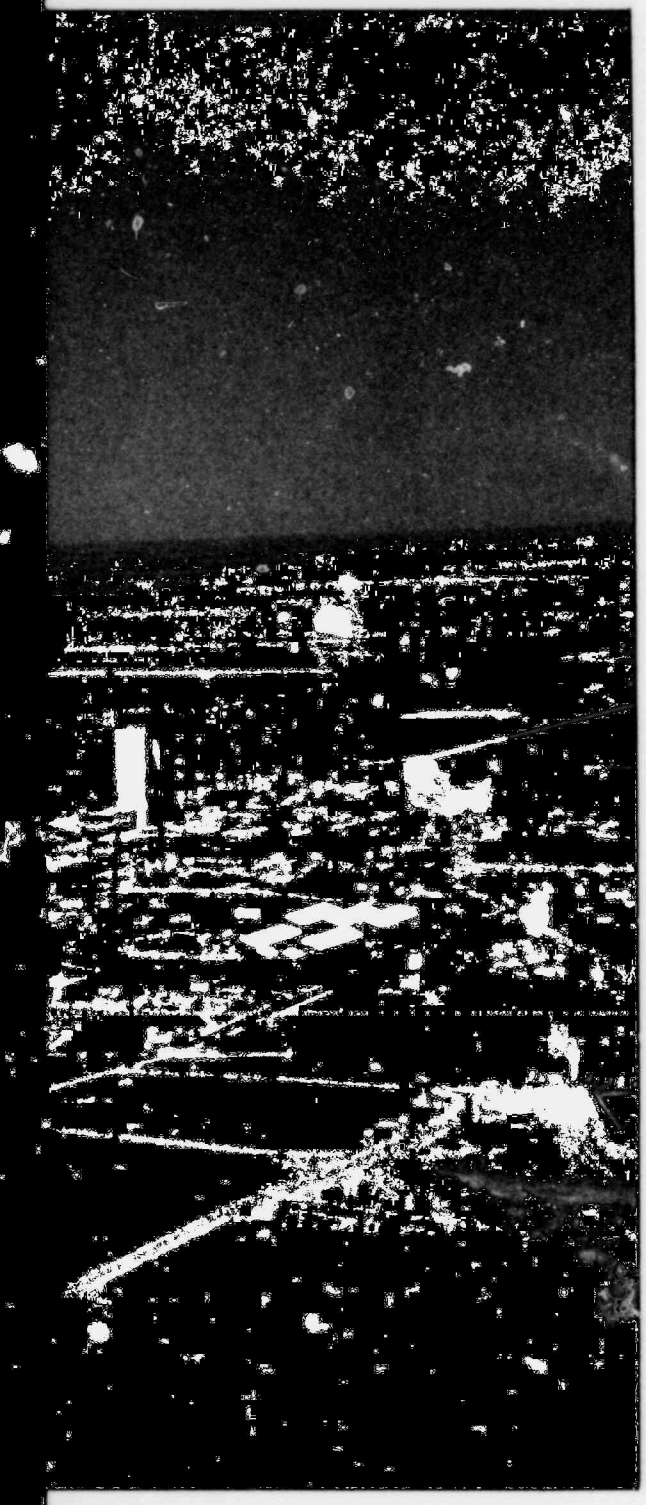
INCREASING ELECTRICAL DEMAND

Though conservation has slowed load growth across the country, it has not stopped the increase in electrical demand. Adequate generating systems must be built to meet this growth. The fuels available for generation are guiding power suppliers' decisions in the installation of new plants and influencing the nation's future energy supplies.

The Dickinson Converter Station, near Buffalo, Minnesota. At the Terminals, Current from the ±400 kv dc line is converted to ac power before it is distributed to rural Minnesota.



The Coal Creek Station, an 1100 megawatt lignite fired generating plant near Underwood, North Dakota.



COAL

Minnesota relies heavily on coal as a fuel for generation because of the extensive reserves found in the nation and the reasonable cost. In 1972, the state's total coal use was 13.2 million tons. By 1985, it is expected to increase to 25.2 million tons, due to the nation's attempts to withdraw from its dependance on expensive foreign oil and natural gas. It is estimated that there are enough coal reserves in the country to last 300 years at the current rate of use.

For CPA, vast lignite coal reserves in North Dakota presented the most economical fuel source available for a large generating plant. Over 300 million tons of lignite covering 18,000 acres will provide fuel for the projected 40 year life span of the Coal Creek Station. These extensive reserves are not subject to the severe supply and price difficulties affecting oil and gas, allowing CPA to provide reliable electric power for the people served by the project.

Coal, too, provides a certain flexibility in generation. As loads either increase or decrease to certain levels, the amount of electricity generated can be controlled by the amount of coal burned. This flexibility can provide tremendous savings in fuel costs.

A heavy dependance on coal, however, can affect air and water quality, increase the number of land use problems and produce a tremendous impact on the rail system.

Sulphur dioxide, ash and other undesirable emissions are produced from coal combustion and must be virtually eliminated by expensive pollution control equipment. Government regulation of these emissions is costly, and though desirable in many respects, has severely limited the practicality of coal as a primary fuel source. Energy suppliers must spend eight to ten years planning, securing permits and building coal fired plants to meet regulations, many of which are costly, time consuming and ineffectual.

Mining regulations have also restricted the accessibility of coal. Existing reclamation laws govern the length of time land can be used for mining purposes and environmentalists are advocating more extensive government regulations. Presently, federal leasing of coal lands has ceased, further restricting available minable land.

An extensive use of coal can also increase the number of coal trains used to transport it. Additional trains result in increased use of petroleum and can be disruptive to the many communities the trains must pass through.

NUCLEAR

Nuclear power has the potential of being the world's major source of electricity. Because of imported oil price increases, many nations have turned to nuclear power for comparatively inexpensive and abundant energy. France is one of the leaders in nuclear power with the Phenix 250 megawatt breeder reactor now in service and the Superphenix 1200 megawatt breeder under construction.

The United States has 66 commercial nuclear plants over 150 megawatts capacity presently in operation. The safety record of nuclear plants the world over has been outstanding. The recent Three Mile Island accident has proven that potentially destructive and dangerous situations can be controlled and that nuclear power presents no more of a threat to the nation that other forms of energy.

Nuclear plants produce a minimal amount of air pollution and their sites remain clean of ash, soot and dust. Low operational and fuel costs result in inexpensive power, saving the consumer money. As with coal, nuclear power can assist the nation in its attempts to become independant of foreign oil. Vast amounts of fuel for nuclear plants are obtainable with reprocessing of spent fuel rods and with the breeder reactor, a system that produces fuel as it uses it. As fossil fuel reserves become scarce, reprocessing and the breeder reactor assure us of adequate fuel supplies in the future. CPA has contributed funds for the research and development of the breeder and will continue to support future program developments.

Anti-nuclear movements, however, are dimming the prospects of this energy source in the United States. Opponents have blocked construction of several nuclear projects around the country and have succeeded in passing legislation that will further restrict the construction of future plants.

The lack of a firm commitment to nuclear power by the federal government has created further difficulties for the industry. The government's failure to establish a procedure for storing spent fuel rods and other nuclear wastes has increased public disapproval of nuclear power.

The Tyrone Energy Park in Wisconsin has been seriously affected by these developments. The 1100 megawatt facility, of which CPA owns 17 percent, was planned to serve the increasing electric demand of consumers in Minnesota and Wisconsin in the late 1980's. The Wisconsin Public Service Commission, however, recently denied a construction permit application for the plant, halting further progress until the participating utilities' court appeal has been decided.

During the last year, only two reactors were ordered for future nuclear units in this country. This growth is considerably below earlier predictions and until permit processes and regulations allow the construction of nuclear facilities, the nation may experience a severe shortage of power within the next ten years.

WIND ENERGY CONVERSION SYSTEMS

Wind powered dc generators equipped with batteries to store the produced energy were common on farms many years ago. They were low voltage independent systems that supplied electricity primarily for lighting or small motors. As ac electricity became available to the rural areas through the Rural Electrification Administration, the wind powered dc systems became uneconomical and less reliable.

Today, as the cost of producing electrical energy continues to rise and some of the common fuels such as gas and oil become more scarce, wind power may become a more potential source of energy for the future. The technology is available for designing large and small wind driven generators, although the ultimate amount of energy from a wind energy conversion system (WECS) depends on wind velocity, the effectiveness of mill blades in "catching" the wind and the efficiency of the gear trains and the generator.

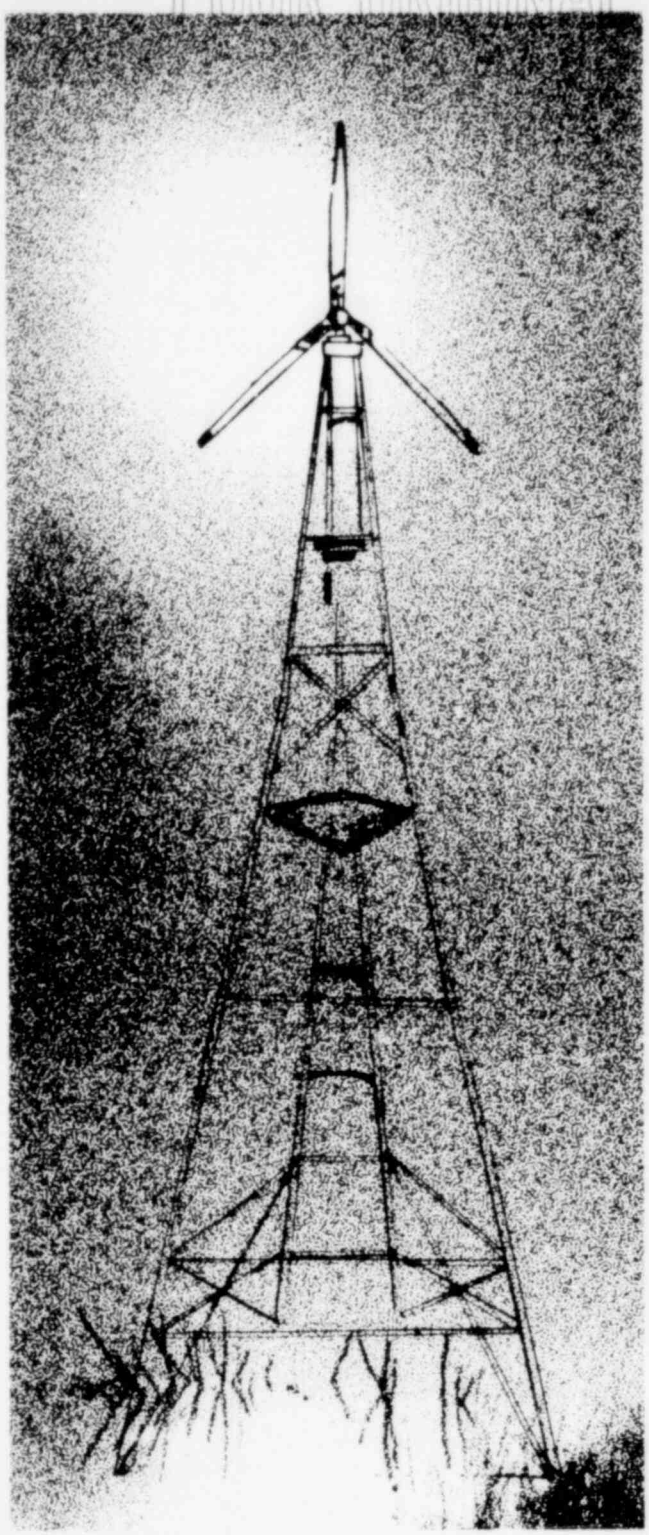
The development of a storage system is necessary before the WECS can be used on an extensive practical basis. Since wind generated electricity is only available when the wind is blowing, WECS owners require back-up power from a utility, reducing the system's cost effectiveness.

Some of the WECS units now available are relatively high priced and do not yet compete with the cost of other forms of power. A wind generator with tower and inverter that could heat a farm electrically costs about $20,000 to install. This results in an energy cost roughly twice the current rate of electricity produced by steam generators.

Energy costs with the WECS do not escalate, however, as they do with the more conventional means of generation. Pollution controls, fuel costs, general inflation, and energy demand versus supply all inflate the price of fossil fuel or nuclear produced power. Once a WECS is installed, the cost remains relatively fixed, increasing the wind alternative's attractiveness as an energy source.

Wind power is essentially pollution free. The land used for a WECS could continue to be used for crops and grazing or for other purposes as well. A poorly designed system could, however, interfere with radio and television reception, while larger WECS units may also be visually unattractive, noisy or safety hazards in high winds.

Because of the high investment cost, WECS at the utility level requires considerable planning. Many utilities, however, are experimenting with WECS while continuing to assess wind energy system designs.



SOLAR ENERGY

It has been estimated that if all the radiant energy Minnesota receives from the sun in one year could be harnessed, the state's total energy demand could be satisfied a hundred times over. The potential for solar energy is tremendous for residential, industrial and agricultural users, but wide-spread efficient application is, at the present time, limited by current technology. Presently, only 10 percent of the sun's rays can be converted into useful energy.

Both active and passive solar systems can convert sunlight into a useable energy source. An unlimited supply of sunlight and the minimal amount of air and water pollution associated with it makes solar energy one of the most attractive sources for heating and cooling.

In passive systems, enhanced building design is the most efficient means of collecting solar energy. Proper building placement, large southern exposure windows, landscaping and shades and drapes assist in heating space and reducing thermal loss. For cooling, roof ponds on the structure allow the sun to evaporate water from the building, thereby removing heat.

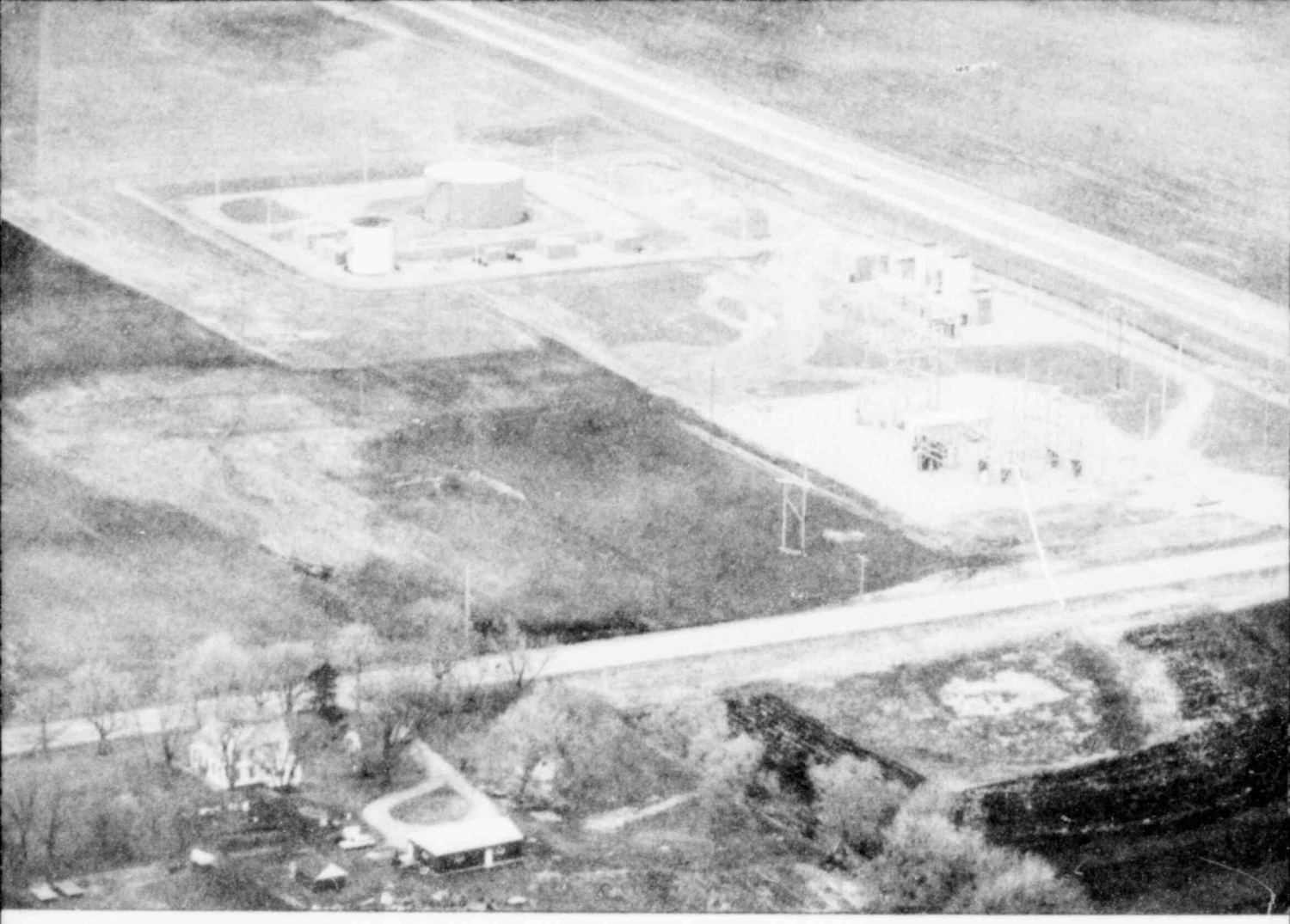
Active systems use a series of collectors to trap the sun's rays and heat either circulating water or air for space and water heating. Because of the hardware currently available, active systems are often problem prone. Freezing, leakage and corrosion of water pipes and collectors reduce the efficiency of the active water system.

Both systems are highly dependent on good weather. The energy produced by solar systems must be stored for nights and cloudly days, and though long term storage is being researched, current design provides for only one to three days of thermal storage. Back-up systems using traditional sources of fuel must therefore be installed for the times the solar system does not function. For these reasons, solar sytems can often use more energy than they save since conventional power plants and transmission lines must be built in addition to the solar equipment.

Though the expense of passive solar can often be absorbed through construction costs, the high initial expense of installing active solar equipment often makes this source impractical. Without generous tax exemptions, the pay-back period is so slow that solar does not appear to be cost effective when replacing traditional fuels. Developing technology, federal and state tax credits and increasing prices for fossil fuels, however, may eventually make this source more competitive.

Since solar energy provides new possibilities for the future, the electric utility industry is researching and developing passive and active solar design. A number of experimental homes have been built to test new designs and to develop more effective heat storage methods.

Also being researched is solar electric photovoltaics. Through solar cells, sunlight can be directly converted to electricity. An unlimited source of fuel and the low cost have prompted further study in this area, but the initial high expense of the system has prevented extensive experimentation. Photovoltaic electricity costs about $2000 per kilowatt compared to approximately $700 per kilowatt of electricity produced in newer steam generating plants. Since the source is weather dependent, it could not be used for a base load system, but could, however, be used as supplementary power. Industry officials believe a significant breakthrough in photovoltaics must be discovered before research in this area is extended.



The St. Bonifacius Peaking Plant, St. Bonifacius, Minnesota

OIL AND NATURAL GAS