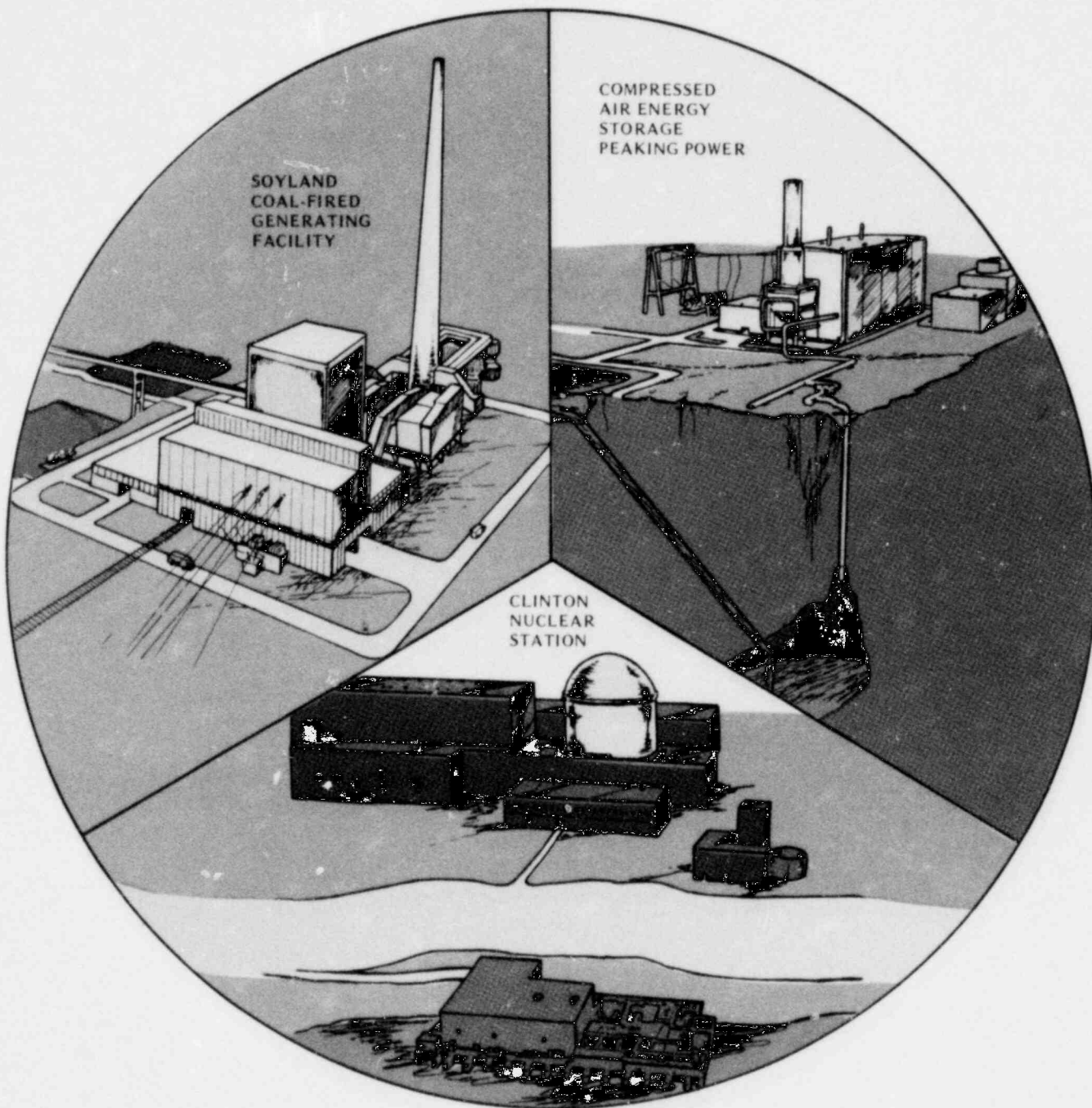




*Soyland Power Cooperative, Inc.*

## 1980 Annual Report

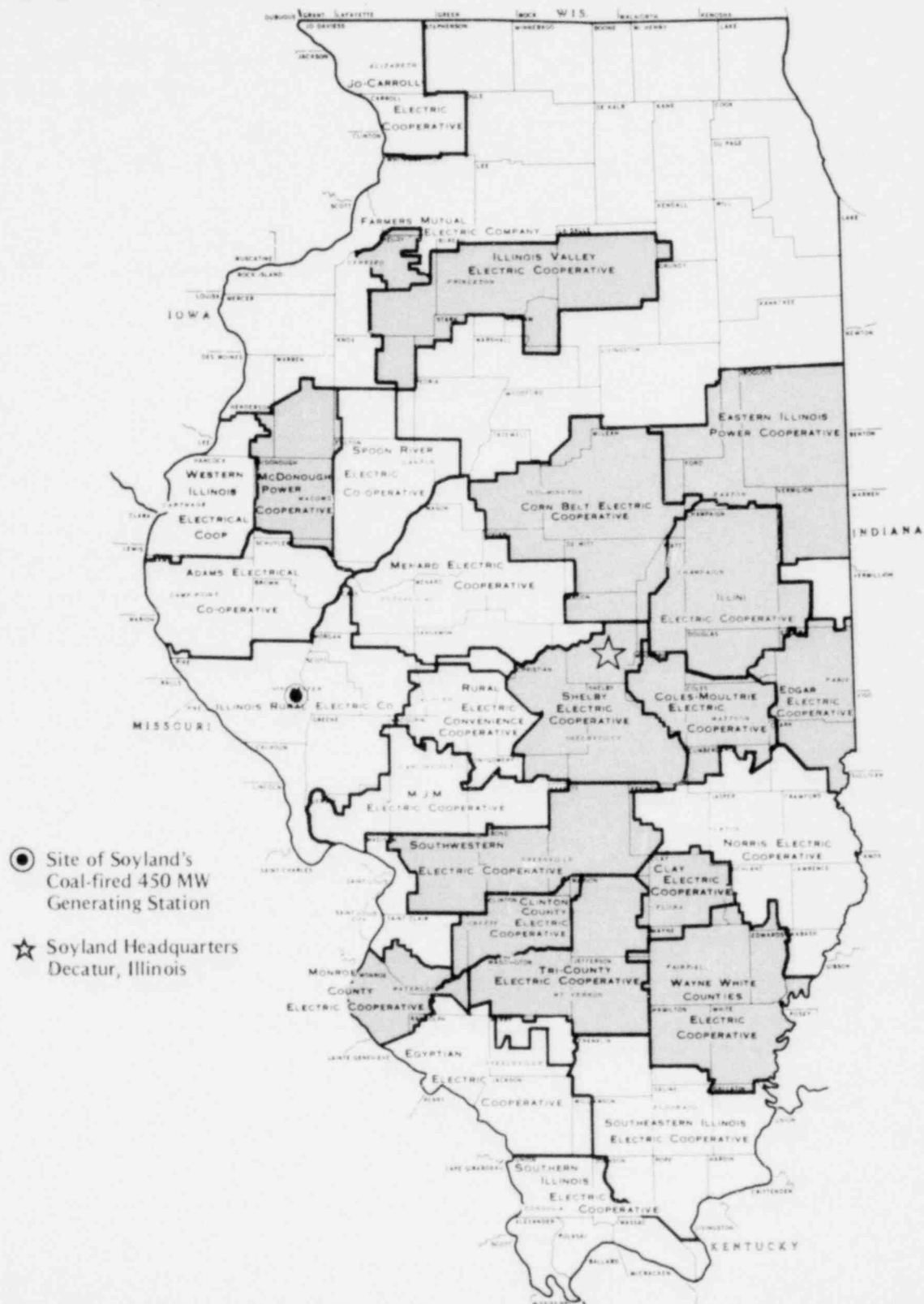


*Planning for Balanced Energy Supply*

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## Service Area





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## Member Cooperatives

Clay Electric Co-operative, Inc.

Flora, Illinois

*Henry L. Gill, Manager*

Clinton County Electric Cooperative, Inc.

Breese, Illinois

*Robert W. Vander Pluym, Manager*

Coles-Moultrie Electric Cooperative

Mattoon, Illinois

*C. E. Ferguson, Manager*

Corn Belt Electric Cooperative, Inc.

Bloomington, Illinois

*Jeffrey D. Reeves, Manager*

Eastern Illinois Power Cooperative

Paxton, Illinois

*Dennis L. Tachick, Manager*

Edgar Electric Co-operative Association

Paris, Illinois

*Maurice C. Johnson, Manager*

Farmers Mutual Electric Company

Geneseo, Illinois

*Edgar G. Arnn, Manager*

Illini Electric Cooperative

Champaign, Illinois

*Walter R. Smith, Manager*

Illinois Valley Electric Cooperative, Inc.

Princeton, Illinois

*Thomas R. McDonald, Manager*

McDonough Power Cooperative

Macomb, Illinois

*Robert E. Pendell, Manager*

Monroe County Electric Co-Operative, Inc.

Waterloo, Illinois

*Joseph J. Fellin, Manager*

Shelby Electric Cooperative

Shelbyville, Illinois

*William E. LeCrone, Manager*

Southwestern Electric Cooperative, Inc.

Greenville, Illinois

*Robert H. Neece, Manager*

Tri-County Electric Cooperative, Inc.

Mt. Vernon, Illinois

*Allen Sisk, Manager*

Wayne-White Counties Electric Cooperative

Fairfield, Illinois

*Bill Endicott, Manager*



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## Board of Directors



Officers and directors seated from left: Walter R. Smith, Allen Sisk, Dennis L. Tachick, William D. Champion, Royal B. Newman, general manager; French L. Fraker, attorney; Lyndall Pigg, Rick Moore, Joseph J. Fellin, Byron G. McCoy, Henry L. Gill and William E. LeCrone. Standing from left: Maurice C. Johnson, Preston A. Mosbacher, Robert E. Pendell, William L. Stanford, Bill Endicott, Jack A. Compton (retired), L. Eugene Boldt, Jeffrey D. Reeves, D. E. Hanes, Thomas R. McDonald, James F. Beatty, John Reed, Jack D. Ludwig, Eugene Dressler, Irvin W. Wessel, Edgar G. Arnn, Paul Mallinson and Robert W. Vander Pluym. C. E. Ferguson, Donald F. Sanders and Robert H. Neece are not pictured.

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**President**  
Walter R. Smith  
1211 W. Healy  
Champaign, Illinois 61820

**Vice President**  
Allen Sisk  
P.O. Drawer 309  
Mt. Vernon, Illinois 62864

**Secretary-Treasurer**  
Dennis L. Tachick  
4 Meridian Terrace  
Paxton, Illinois 60957

**Assistant Secretary**  
William D. Champion  
RFD 1, Box 66  
Gays, Illinois 61928

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Edgar G. Arnn  
314 East Palace Row  
Geneseo, Illinois 61254

Maurice C. Johnson  
519 East Wood Street  
Paris, Illinois 61944

Robert H. Neece  
P.O. Box 409  
Greenville, Illinois 62246

James F. Beatty  
RFD 1, Box 120  
Philo, Illinois 61864

William E. LeCrone  
1509 West North First Street  
Shelbyville, Illinois 62565

Robert E. Pendell  
161 Doe Run  
Macomb, Illinois 61455

L. Eugene Boldt  
Stewardson, Illinois 62463

Jack Ludwig  
RFD 1  
Fithian, Illinois 61844

Lyndall Pigg  
RFD 1  
Bushnell, Illinois 61422

Eugene Dressler  
RFD 1  
El Paso, Illinois 61738

Paul Mallinson  
RFD 2  
Geneseo, Illinois 61254

John Reed  
RFD 1  
Cambridge, Illinois 61238

Bill Endicott  
32 Park Lane  
Fairfield 62837

Byron G. McCoy  
RFD 3  
Paris, Illinois 61944

Jeff Reeves  
120 Cheltenham  
Normal, Illinois 61761

Joseph J. Fellin  
424 Sunset Lane  
Waterloo, Illinois 62298

Thomas R. McDonald  
P.O. Box 70  
Princeton, Illinois 61356

Donald F. Sanders  
RFD 2  
Ramsey, Illinois 62080

C. E. Ferguson  
1400 Annis  
Mattoon, Illinois 61938

Rick Moore  
RFD 1  
Fairfield, Illinois 62837

William L. Stanford  
RFD 1  
Flora, Illinois 62839

Henry L. Gill  
P.O. Box 517  
Flora, Illinois 62839

Preston A. Mosbacher  
RFD 1  
Prairie du Rocher, Illinois 62277

Robert W. Vander Pluym  
915 North Main Street  
Breese, Illinois 62230

D. E. Hanes  
RFD 6  
Mt. Vernon, Illinois 62864

Irvin W. Wessel  
RFD 4  
Centralia, Illinois 62801





## President's Report

*Walter R. Smith*

Since Soyland's 1980 Annual Meeting on August 25, many significant events have been made to happen to keep the projects on schedule. Each, and all, of these events have required thousands of man-hours of Soyland's staff personnel, and Soyland's consultants, in planning and design and in hard negotiations for land, fuel supply, major plant hardware items, etc., for the coal-fired facility, together with coordination with Illinois Power Company and WIPCO in expediting the Clinton Nuclear Plant construction and its licensing procedures. Due to design changes required by new regulations, many of which resulted from NRC re-evaluations subsequent to the Three-Mile Island incident, the completion date for fuel loading at the Clinton reactor has been rescheduled from April 1982 to January 1983. Of course, this eight-month delay increases the expense of interest during construction as well as escalation in construction costs due to inflation and high cost replacement power.

As previously reported, Prairie Alliance has petitioned to intervene in the licensing procedure by NRC for an operating license for the Clinton Station. NRC has accepted 12 of Prairie Alliance's 19 contentions and has allowed it to intervene, which means a full-blown public hearing. We all hope the hearing will be scheduled soon, and can be expedited sufficiently to prevent any further delays in obtaining an operating license prior to the scheduled fuel loading date of January 1, 1983. It is the responsibility of all of us to do all within our power to expedite the licensing process. Prairie Alliance does not have to answer to the end-use consumer for the increased costs caused by delays; we do have to be responsible for the end result. So, let us all remain alert, and exert our best efforts to expediting the political processes necessary to accomplish Soyland's goals as an all-requirements supplier of the bulk-power needs of its member-cooperatives. Those requirements are destined to grow as petroleum-based energy supplies become more scarce and higher priced.

In behalf of Soyland's Board of Directors, I am proud to report that all events for the 450-MW coal-fired plant are on schedule and under budget. At the November 3, 1980, meeting of the Board, it declared its commitment in principle to the concept of a Com-

pressed Air Energy Storage (CAES) plant to meet Soyland's peaking and reserve requirements and authorized Royal Newman to negotiate terms with various contractors and vendors to obtain proposals and with Reynolds, Smith & Hills for environmental, economic feasibility and site studies.

The prices initially proposed by the equipment vendors and contractors, including the cavern maker, were so high as to render the CAES project not feasible in relation to Soyland's other alternatives for its peaking and reserve needs. However, Royal Newman and Richard Ruzich, through long and difficult negotiations, have been successful in reducing the proposed costs many millions of dollars to levels that appear to render CAES the best choice for Soyland. Royal was also successful in getting for Soyland an exemption from the Federal Fuel Use Act, which was granted on April 22, 1981. With this major hurdle crossed, Environment Science & Engineering was awarded a contract by Battelle Labs (through a grant from DOE) for technology and site selection study for Soyland's CAES plant. It is gratifying to report that all systems are "go" for the CAES project, which has many pluses for Soyland. This will be the first such facility installed in the United States, although other utilities in the U.S. are working hard to utilize the same concept.

During the fall of 1980 it became apparent that the Soyland Board of Directors could function more effectively if the standing committees (Technical, Finance, and Executive) were expanded so that each Board member would be directly involved in the detailed studies and discussions in which recommendations to the Board are developed. The Board of Directors authorized these enlargements at its November 3, 1980, meeting. The committees were thus expanded and have worked well in that regard. The Board also authorized an oversight committee, consisting of two members from each of the standing committees with no member-cooperative represented by more than one director. The Board chairman is an ex-officio member of each of the committees. This method of developing policy for Soyland appears to be working well and provides the guidance and support to the staff that it needs to accomplish the many-faceted aspects of all the events necessary to

accomplish Soyland's goals and objectives.

During the February 9, 1981, Board meeting, the Pike County site was selected as the preferred site for Soyland's coal-fired power plant. The leadership of Pike County, and all its citizens, together with Congressman Paul Findley were very helpful and supportive in this site selection. If the site studies for the CAES facility should recommend the same site, this would enable Soyland to utilize the waste heat from the CAES unit to either preheat the boiler feed water or to heat the air for boiler combustion. Also, the limestone mined to create the compressed-air cavern could be utilized in the stack-gas scrubber, thus reducing the cost of that necessary ingredient in the scrubbing process.

After many months of hard negotiations by the staff, with the aid and counsel of the standing committees, several important contracts were authorized and signed at the April 3, 1981, Board meeting, to wit:

1. Thirty-year fuel supply with Peabody Coal Company and Mid-America Transportation Company.
2. Turbine-generator contract with Brown Boveri Corporation.
3. Steam generator (boiler and its associated support facilities) with Foster Wheeler Energy Corporation.
4. Authorized Environmental Science and Engineering, Inc. to proceed with the Transmission Line Siting Study.

During this same Board meeting, it was determined that quarterly meetings of the Board of Directors was too infrequent, in view of the high volume of important events under constant consideration and the significance of timely decisions. Thereupon, the Board resolved to meeting the second Wednesday in even-numbered months, beginning June 10, 1981. It is believed that this will result in a more secure future for Soyland, especially during this period of putting together all the many required facets of a project of this magnitude.

From time to time, it has appeared that some of the directors of Soyland's member-cooperatives do not fully realize the magnitude of the projects necessary for Soyland to attain its corporate goals. Many millions of dollars are being invested now by Soyland in its obligation to assure adequate future power supply, under its own control, with full knowledge that the end-use consumer of each and all of its members will ultimately benefit by it. In addition, all of society will benefit by Soyland's fortitude and innovations through many generations of

American citizens.

Soyland submitted its draft Environmental Analysis Report to REA on June 4, 1981, for the coal-fired plant. From this, REA will develop the Environmental Impact Statement which REA is required to do before approving the loan guarantee. Much has been done; much is yet to do. As previously stated, Soyland is on schedule and under-budget and all facets are falling into place through the dedicated efforts of a very competent staff and a Board of Directors which recognizes the future significance of its present actions.

Respectfully,  
Walter R. Smith





# Manager's Report

*Royal B. Newman*

It is with great pleasure that I am able to report that Soyland has taken significant steps forward during the past year in the planning of a balanced energy supply for our member distribution cooperatives. Great strides have been taken in our coal-fired project, in the Clinton Nuclear Station construction, and in the Compressed Air Energy Storage project. I would briefly like to emphasize the major points of each to show how Soyland has planned to ensure successful projects while supplying our members with reliable, economical energy in the years to come. We have unique aspects to the projects and have achieved remarkable progress with our small staff.

With Soyland having successfully negotiated two of the three major packages that form the power block of its coal-fired plant, the turbine-generator and the boiler package, work is underway on the third. This package, consisting of electrostatic precipitator and flue gas scrubber, will be one of the first high sulfur scrubbers to operate under current environmental rules. We are confident that our success in reaching this point will continue.

The Soyland coal-fired generating facility will be the first in the U.S. to be highly automated. Over the years, it has been my opinion that operator error has played a major role in system outages. Today it is a well-documented fact that operator error is responsible for at least 20% of all system outages. Soyland has taken a major step forward in addressing this problem that until now has had an elusive solution. The automation system to be implemented will automatically start up, supervise, and shut down plant equipment, greatly reducing operator error. The system will also incorporate 100% operator manual control with an override. Gibbs & Hill, Inc. has completed both a commercial and technical evaluation and recommends that Soyland purchase the Binary Control and Automation System as furnished by Brown Boveri Corporation. The Board of Directors, myself, and the entire staff hope that all member-cooperatives join in our enthusiasm in accomplishing this milestone in the power industry.

Soyland signed a 30-year coal supply agreement with Peabody Coal Company on April 3, 1981. This agreement has several advantages to Soyland. It utilizes Illinois coal on an F.O.B.-delivered basis and locks Peabody into a reasonable long-term price for its coal. This reasonable price is tied to government indices for escalation and then is reviewed every two years and compared to Peabody's actual costs. This assures Soyland that no "windfall profits" will be made by the supplier. It also locks in our coal price to

the actual cost instead of a "market price" reopener preferred by many coal companies. Our contract ensures that an existing coal mine would continue to produce southern Illinois coal, and allows Soyland to design and build a power plant that can rely on a dependable and proven coal reserve.

Many factors were involved in the decision to choose Pike County as the preferred location for the 1987 coal-fired plant. One of the most obvious advantages was that Soyland had much more success in optioning Pike County site property than land at the other two sites, as well as the fact that Soyland could option this land at over a million dollars less than the second cheapest site. Another major factor in the decision was that with the Pike site it would be easier to obtain the necessary permits in less time than with either of the alternates, which means lower costs. This item was critical in keeping this project on schedule.

Unanimous public support from Pike County residents is an intangible benefit to this project's success. The widespread willingness of residents to pledge their help in making this project a reality should not be underestimated, since public pressure can influence regulatory agencies. In fact, after the Pike County Public Scoping Meeting in October 1980, several REA officials told me that Soyland was in an enviable position because of local support.

As an example of the quality work Soyland and its consultants are doing, Soyland's Site Selection Study, completed in early 1980 by Environmental Science and Engineering, Inc., is being used by the REA as a model study. Another Soyland document, the 600-page Draft Environmental Analysis Report, was submitted to REA in May 1981.

Soyland has made major strides toward a primary goal of securing reliable supplies of self-owned generating capacity for the 15 member-cooperatives. Besides the projected 500 MW (gross) baseload coal-fired generating plant, Soyland owns 10.5% of the Clinton Nuclear Power Station and is investigating the feasibility of constructing a 220-MW (gross) Compressed Air Energy Storage (CAES) system.

You ask, "Why energy storage?" Today, sharply rising prices and threatened shortages are associated with natural gas and petroleum consumption in the United States. These pressures are expected to grow more severe in future years as world demand for petroleum products increases. The solution to this energy problem is to not only establish alternate sources of primary energy but also to develop ways of utilizing these supplies efficiently, conveniently,



and economically as petroleum-based systems. Energy storage can be a major factor in meeting that two-pronged challenge.

The development of new energy storage concepts for use by electric utilities could save a total of more than a million barrels of oil per day. Soyland and other electric utilities are confronted with the problem of meeting fluctuating demands for power at the lowest possible cost. By using energy storage, it is possible to store the output of base-load plants during periods of low demand for use during periods of high demand.

Studies have shown that the CAES concept is technically feasible and economically desirable. CAES plants offer several advantages over conventional systems used for meeting peak-load requirements: energy storage offers a degree of flexibility and control in system operation (e.g., frequency stabilization); it can be considered as a spinning reserve and it can be started rapidly, thus being available as supplemental generation in an emergency; and most importantly, it is economically desirable since it uses modified combustion-turbine technology to produce electricity from about one-third the fuel required by conventional combustion-turbine systems.

Soyland is unique in the sense that we are the only utility to be awarded a permanent fuel mixtures exemption from the Power Plant and Industrial Fuel Use Act by the Economic Regulatory Administration (ERA) of the Department of Energy for a CAES facility. Soyland was granted this exemption following a rigorous review by the ERA due to the innovative nature of this technology.

Also of tremendous benefit to Soyland is a grant that Battelle received from the U.S. Department of Energy to perform a broad range technology assessment on Compressed Air Energy Storage Systems in the United States. Soyland's CAES was selected as the model system for

research; Battelle is also funding a site study again using Soyland as the prime example.

With the support of Soyland's professional staff and consultants, I am convinced that the Compressed Air Energy Storage System will surpass all other conventional systems for meeting our members' peak-load requirements.

With the ever-increasing rates of purchasing wholesale power and the uncertainty as to the availability of an adequate and reliable power source for our member-cooperatives, Soyland's Board of Directors decided in 1977 to proceed with plans for an all-requirement generation program. The merits of this decision will become even more apparent as investor-owned utilities are allowed to increase the rate of return on wholesale power rates that they are going to charge their wholesale power customers. Reliable sources of wholesale power will become scarce since investor-owned utilities will be less willing to supply the demand that cooperatives will be placing on their generation capacity. Many utilities across the country have cancelled or rescheduled plans for future generating units recently in lieu of decreased demand, escalating equipment prices, and the inability of certain investor-owned utilities to finance such projects through the sale of common stocks or market bonds.

Undoubtedly, electric rates as well as other energy sources will continue to rise in the years ahead. Reynolds, Smith and Hills recently completed a Power Supply Study for Soyland which showed that Soyland could generate its own power at a 25% lower rate than we would expect to purchase it from our investor-owned utilities suppliers. This fact also shows that there is no doubt to the long-term benefit to the consumers of our member-cooperatives that our Board of Directors made the right choice to provide a reliable and economically feasible power supply for their future needs.





# Balance Sheet

AS OF DECEMBER 31, 1980  
ASSETS

<b>UTILITY PLANT</b>		
Construction work in progress . . . . .		\$137,478,134.89
General plant . . . . .	\$ 46,285.30	
Less - Accumulated depreciation . . . . .	11,974.48	34,310.82
<b>INVESTMENT</b>		
Investment in associated organization . . .		1,000.00
<b>CURRENT ASSETS</b>		
Cash - general . . . . .	\$ 18,974.47	
Cash - construction funds - trustee . . .	20,000.00	
Temporary cash investments -		
U.S. Treasury Notes . . . . .	435,174.98	
Prepayments . . . . .	3,594.26	477,743.71
Total Assets . . . . .		<u>\$137,991,189.42</u>

## LIABILITIES AND EQUITIES

<b>EQUITIES</b>		
Membership fees . . . . .	\$ 1,500.00	
<b>LONG-TERM DEBT</b>		
Mortgage notes payable - FFB . . . . .		132,290,000.00
<b>CURRENT LIABILITIES</b>		
Notes payable - CFC . . . . .	\$4,114,594.64	
Note payable . . . . .	4,815.92	
Accounts payable . . . . .	310,767.44	
Advances for Associated Cooperatives . . .	1,084,170.00	
Accrued payroll and payroll taxes . . . . .	9,368.44	
Accrued interest . . . . .	175,848.84	
Accrued expenses . . . . .	124.14	5,699,689.42
Total Liabilities and Equities . . . . .		<u>\$137,991,189.42</u>

The accompanying Notes to Financial Statements are an integral part of this statement.

# Statement of Operations

FOR THE PERIOD FROM JUNE 1, 1963, TO DECEMBER 31, 1980

<b>REVENUE</b>		
Proceeds from assessments to Member Cooperative . . . . .		\$32,583.83
<b>OPERATING EXPENSES</b>		
Directors' fees . . . . .	\$ 1,065.00	
Dues and subscriptions . . . . .	4,200.00	
Legal services . . . . .	749.61	
Office supplies and expense . . . . .	658.51	
Power supply studies . . . . .	26,168.21	
Total Operating Expenses . . . . .		32,841.33
NET LOSS FROM OPERATIONS . . . . .		(\$ 257.50)
<b>NON-OPERATING INCOME</b>		
Interest income . . . . .		257.50
NET INCOME . . . . .		<u>-0-</u>

Note: The Cooperative is capitalizing all expenditures during this development and construction stage.  
The accompanying Notes to Financial Statements are an integral part of this statement.



# Statement of Changes in Financial Position

FOR THE YEAR ENDED DECEMBER 31, 1980 AND  
FOR THE PERIOD FROM JUNE 1, 1963, TO DECEMBER 31, 1980

	Year Ended December 31, 1980	June 1, 1963 to December 31, 1980
<b>FUNDS PROVIDED</b>		
Depreciation provision . . . . .	\$ 4,992.19	\$ 11,974.48
Loan advance from CFC . . . . .	-0-	64,504,883.38
Loan advance from FFB . . . . .	35,746,000.00	132,290,000.00
Memberships . . . . .	-0-	1,500.00
Decrease in deferred debits . . . . .	94,002.22	-0-
Decrease in working capital . . . . .	5,368,424.12	5,221,945.71
	<u>\$41,213,418.53</u>	<u>\$202,030,303.57</u>
<b>FUNDS APPLIED</b>		
Plant construction . . . . .	\$41,200,290.88	\$137,478,134.89
General plant . . . . .	13,127.65	46,285.30
Principal payments on CFC debt . . . . .	-0-	64,504,883.38
Investment in associated organization . . . . .	-0-	1,000.00
	<u>\$41,213,418.53</u>	<u>\$202,030,303.57</u>
<b>CHANGES IN WORKING CAPITAL</b>		
<b>Current Assets</b>		
Cash — general . . . . .	(\$ 3,707.76)	\$ 18,974.47
Cash — construction funds — trustees . . . . .	( 40,186.00)	20,000.00
Temporary cash investments —		
U.S. Treasury Notes . . . . .	( 1,067,342.50)	435,174.98
Accounts receivable — other . . . . .	( 1,038.11)	-0-
Prepayments . . . . .	918.38	3,594.26
	<u>(\$ 1,111,355.99)</u>	<u>\$ 477,743.71</u>
<b>Current Liabilities</b>		
Notes payable — CFC . . . . .	\$ 3,415,815.71	\$ 4,114,594.64
Note payable . . . . .	4,815.92	4,815.92
Accounts payable . . . . .	108,366.58	310,767.44
Advance from Associated Cooperatives . . . . .	554,918.00	1,084,170.00
Accrued payroll and payroll taxes . . . . .	5,024.16	9,368.44
Accrued interest . . . . .	168,003.62	175,848.84
Accrued expenses . . . . .	124.14	124.14
	<u>\$ 4,257,068.13</u>	<u>\$ 5,699,689.42</u>
(Decrease) in Working Capital . . . . .	<u>(\$ 5,368,424.12)</u>	<u>(\$ 5,221,945.71)</u>

The accompanying Notes to Financial Statements are an integral part of this statement.

## NOTES TO FINANCIAL STATEMENTS DECEMBER 31, 1980

### 1. SUMMARY OF ACCOUNTING POLICIES

The Cooperative maintains its accounting records in accordance with the Uniform System of Accounts prescribed by the Rural Electrification Administration. As a result, the application of generally accepted accounting principles by the Cooperative differs in certain respects from the application of nonregulated enterprises and also differs due to being a development stage enterprise. The more significant policies of the Cooperative are described below.

#### Property and Plant

The Cooperative has entered into a purchase agreement with Illinois Power Company for the purchase of 10.5% of the Clinton Nuclear Power Plant for a cost estimated at \$173,000,000. This plant is currently under construction and the Cooperative has contributed \$106,570,764 to Illinois Power Company for its 10.5% of the construction cost through December 31, 1980. The Cooperative is capitalizing all expenditures during this development and construction stage.

### 2. LONG-TERM DEBT — FFB

The Federal Financing Bank (FFB) has committed itself to a loan in the amount of \$197,470,000 to Soyland Power Cooperative, Inc., with such loan being guaranteed by the Rural Electrification Administration (REA) for the purchase of 10.5% of the Clinton Nuclear Power Plant. During the current year, advances on this note have been received in the amount of \$35,746,000. The interest rate for each advance is established at the time of such advance and varied from 8.965% to 14.734% on the advances that have been received. These advances are secured by all the assets of the Cooperative. These advances mature in 14 years from the end of the year in which the advances are made. Quarterly payments to service the debt within the next twelve months will aggregate approximately \$15,001,092, all of which will apply to interest.

**BENNETT &  
MIDDENDORF, LTD.**  
Certified Public Accountants  
P.O. Box 807  
Quincy, Illinois 62301



## Power Progress

During the past year, considerable progress has been made on design engineering for Soyland's coal-fired generating facility. With the determination by the Soyland Board of Directors in February 1981 to locate the coal-fired plant at Pike County, site-related design was begun. In mid-March, an aerial survey was taken of the site. This survey allowed Gibbs and Hill to prepare detailed topographic maps of the area which are essential to planning construction activities. Additionally, a detailed plot plan was prepared, which shows how the plant facilities will be laid out on the Pike County property. In early July, bids were received for investigation of subsurface conditions at the site. These soil borings will serve as the basis for foundation design for all plant equipment.

In addition to this site work, progress continues on equipment selection for the plant. On April 3, a contract was signed for purchase of the turbine-generator with Brown Boveri. The boiler contract with Foster Wheeler Energy Corporation was also signed on April 3. Preliminary specifications for the precipitator and SO<sub>2</sub> removal system were received from Gibbs and Hill on July 22. After REA review and Soyland staff comments, these will be issued for bid in September 1981. Soyland is also issuing several smaller specifications during this time. These include the condensate polisher, deaerator, and numerous electrical components.

Drawing work is also progressing. Preliminary general arrangement drawings are being prepared for Soyland's review. These drawings, along with the project design manual, will serve as the basis for continued detail design. During April, the Soyland staff met with REA and Gibbs and Hill to review the design manual and drawings. This review is important for REA support of our project.

All of this work requires manpower. During the past year, Gibbs and Hill has increased its work force in Dallas from 15 to 37 full-time personnel.

### Compressed Air Energy Storage System

Soyland has been investigating the feasibility of using a Compressed Air Energy Storage (CAES) system to provide an economical supply of peaking power for Soyland's member-cooperatives. Some of the advantages of using this CAES system are that it will provide peaking power from baseload power, it reduces the amount of petroleum fuel needed for a conventional peaking unit, and it reduces maintenance costs on baseload units by allowing them to operate more efficiently at a constant, steady rate.

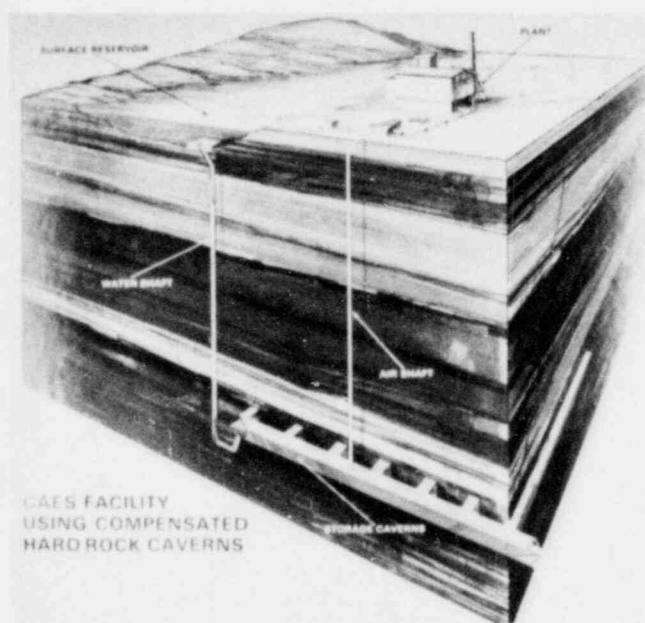
Several key tasks needed to be done by Soyland in order to initiate a Compressed Air Energy Storage system project. One of the major obstacles to building such a peaking

power system was the Power Plant and Industrial Fuel Use Act of 1978, which prohibited the use of petroleum or natural gas in new power plants. Soyland overcame this obstacle by receiving a Permanent Fuel Use Mixtures Exemption from the provisions of this law from the Economic Regulatory Administration (ERA) within the Department of Energy. Soyland initiated work on receiving this exemption, since it would have been futile to do all other preliminary design, environmental and economic research if the fuel-use exemption could not be obtained. Other tasks that Soyland will have to undertake prior to initiating construction of this project include submission of a Site Selection Study and Environmental Analysis Report to the Rural Electrification Administration. Soyland will also obtain all necessary licenses and permits for construction and operation of this facility, and will negotiate contracts with equipment suppliers, plant contractors, and cavern excavators.

Soyland has undertaken a Site Selection Study with the assistance of Environmental Science and Engineering, who also completed the Site Selection Study for the coal-fired power plant. ESE will also be responsible for all licensing activities that are necessary to obtain construction and operational permitting prior to construction of a Compressed Air Energy Storage facility. ESE will consult with the regulatory agencies involved to review existing data, develop a plan of study, identify favorable locations for this facility, gather necessary baseline environmental data, write the environmental analysis report, and prepare permitting forms for submittal to the regulatory agencies involved. The entire environmental process for this CAES system should take approximately 24 to 39 months for completion depending upon the location of the facility. Battelle Pacific Northwest Laboratories granted \$149,000 to Soyland to do the preliminary site study and technology assessment for this CAES system. The award of this grant to Soyland shows Battelle's interest and confidence in this project.

Throughout the previous year Soyland has been discussing the Compressed Air Energy Storage project with various plant equipment suppliers, cavern excavators, and plant construction contractors. Soyland has reviewed budget estimates and draft contracts to ensure that bids on these contracts are in Soyland's best interests. Also included in these meetings with Soyland were civil and structural contractors discussing the construction of all buildings required for this project; several cavern excavating contractors, who would be responsible for the below ground construction; Gibbs & Hill, who would be responsible for design of this facility; and Environmental Science and Engineering, who is responsible for siting and licensing this facility.





Compressed Air Energy Storage offers a peaking power system that is more economical than conventional peaking units.

Soyland is very optimistic about the outcome of this project as are many interested parties who have shown their support through funding, volunteering engineering services, and expressing their desires to speed up all required processes necessary for turning this project into a reality. Soyland received the exemption from the Fuel Use Act, which was a large obstacle that had to be overcome. Other obstacles, such as permitting and securing REA approval of the EIS, lie ahead; however, Soyland feels that it has the optimal conditions necessary to perform all environmental, engineering and economic analyses required for the project.

#### Site Selection and Environmental Analysis and Licensing

On December 28, 1978, Reynolds, Smith and Hills (RS&H) and its two subsidiaries, Environmental Science and Engineering (ESE) and Plantec Corporation, were retained by Soyland Power Cooperative to conduct the Site Selection Study, Fuel Study, and an Environmental Analysis and Licensing Study required before approval could be granted by the regulatory agencies for the construction of the 1987 coal-fired electric generating station.

The Site Selection Study was initiated in January 1979

by RS&H, ESE, and Plantec with the objective of identifying three environmentally acceptable sites that would be favorable to the location of this facility. This study was culminated with the selection of the three approximately 1,000-acre sites in the Illinois counties of Pike, Randolph, and Wabash. This was achieved by detailed, objective and systematic environmental, economic, and engineering analyses. Soyland, RS&H, ESE, and Plantec finished the Site Selection Study early in 1980 and submitted the document to the Rural Electrification Administration for their review.

Each of these three sites has undergone further evaluation during the past year to analyze the baseline data from the areas of aquatic and terrestrial ecology, air and water quality analysis, geotechnical considerations, archeology investigations and socioeconomic impact analysis. This information was used in development of the Environmental Analysis Report that was submitted to the Rural Electrification Administration, and also for developing the permitting documents that will be submitted in the autumn of 1981 to the various regulatory agencies involved in the permitting process.

On February 9, 1981, Soyland's Board of Directors chose Pike County as the preferred location for the 1987 coal-fired plant. At this time, the Pike County site appears to be very favorable for the location of the coal-fired plant. The final determination will not be made, however, until the final Environmental Impact Statement is approved by the Rural Electrification Administration, and other agencies involved have granted approval to the permits required for construction and operation of this facility. However, if a problem would arise with the licensing and permitting of the Pike County site, one of the alternate sites in Randolph or Wabash County could be used, since similar environmental and socioeconomic data have been collected at all sites.

#### Site Acquisition

LEMCO Engineers, Inc., of St. Louis, Mo., has been involved since February 7, 1980, in an intensive effort to acquire the land Soyland needs for the new generating station. LEMCO was originally involved when Soyland had three potential plant sites and researched land titles on more than 60 parcels and descriptions on over 5,000 acres of land. Beginning in April 1980, LEMCO was able to obtain option to purchase real estate agreements with various landowners at the three sites. These options to purchase agreements are good for two years, which means Soyland will have to exercise these options between April and October of 1982.



Now that Soyland's site selection process has identified three sites and the Board of Directors has selected Pike County as the preferred site for Soyland's coal-fired power plant (at the February 9, 1981, board meeting), LEMCO is concentrating on acquiring the final land parcels needed. The original plant site called for 1,217 acres of land, although since that time revised estimates have indicated that less land will be needed.

### Fuel Study

Soyland signed a coal contract with Peabody Coal Company on April 3, 1981, for 1,200,000 tons of Illinois number six seam coal per year for 30 years. The coal is scheduled to come from the River King Underground No. 1 Mine, located in southern Illinois near the Kaskaskia River in St. Clair County. The signing of this coal contract ended a year and a half search for the qualified vendor. Initial contacts were made on November 7, 1979, to more than 29 coal companies. This list was evaluated down to six major companies and then, based on the price and quality, was reduced to two companies for the final site. Peabody was chosen because of its low evaluated price and extensive mining reserves and experience.

The coal contract with Peabody is an FOB-delivered contract to our plant site near Florence, Ill. As a result, Peabody's subsidiary, Mid-America Transportation, Inc., will deliver the coal by barge from the River King Mine to our plant. Soyland holds an option to supply its own barging equipment if it is determined to be more economical.

### Major Equipment Purchases

Soyland has signed two major contracts for the equipment acquisition on the 1987 coal-fired generating plant. The first contract was placed with Brown Boveri Corporation for the turbine-generator unit. This contract was a furnish-only contract and was the first contract document to be prepared by Gibbs & Hill for Soyland. The value of this contract is approximately \$38 million for a turbine-

generator delivered by Sept. 1, 1985. In the negotiations for this contract, Soyland and Brown Boveri Corporation arrived at a firm price not subject to escalation. This benefits Soyland considerably because, rather than estimating what future escalations may be and applying that to the base price, Soyland knows what it will pay for the unit. The unsuccessful bidders on this contract were General Electric, Utility Power Corporation, and Westinghouse Electric Corporation.

The other major equipment purchase by Soyland was the contract for the steam generator with Foster Wheeler Energy Corporation. This contract package involved a furnish-and-erect offering, including boiler structural steel and all auxiliary equipment required. The amount of this package was approximately \$52 million, subject to escalation. The other bidders were Babcock and Wilcox, Combustion Engineering, and Riley Stoker Corporation.

### Clinton Nuclear Unit #1

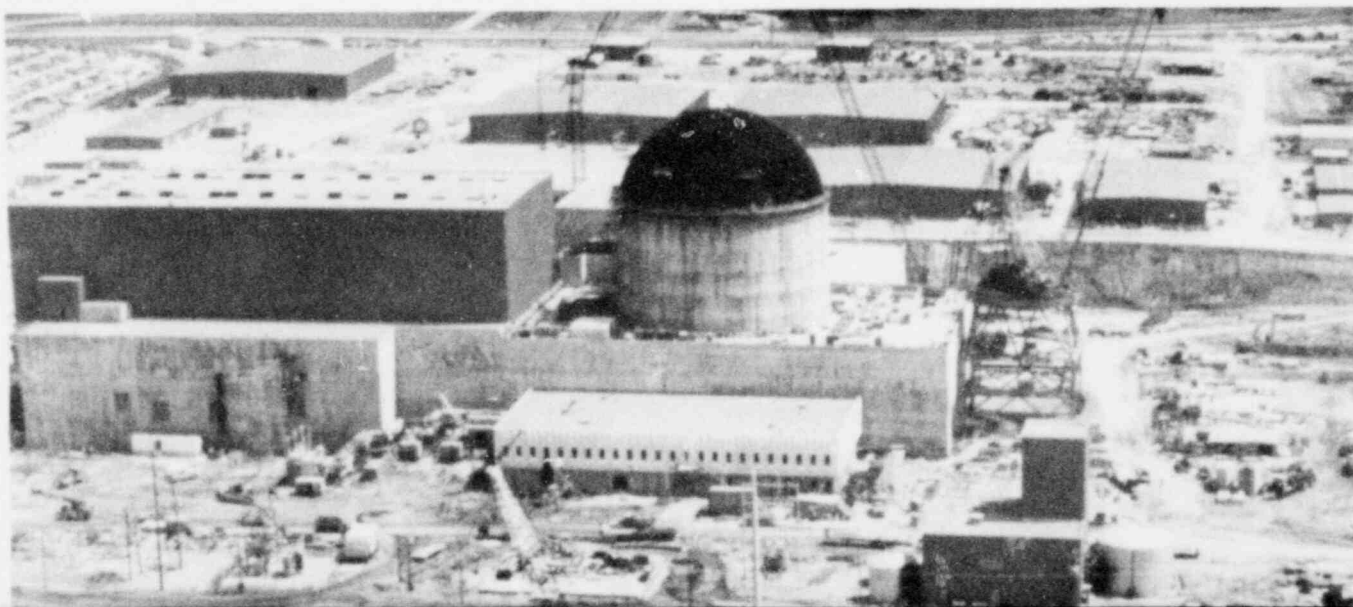
After last year's impressive civil/structural progress, work this year has been less visually dramatic but continues to progress. The remainder of the civil work is largely interior shielding walls and finishing floors. Outside, work on the containment dome continues. Installation of dome rebar was completed April 24, 1981, significantly ahead of schedule. At that time the forming of the dome concrete pours began and placement operations are presently underway. At this rate of placement, dome concrete was estimated to be complete by mid- to late July 1981.

Emphasis this year has been on electrical and control work. The on-site electrical work force has increased from 588 men in July 1980 to 1,040 men as of the end of June 1981. Further, turbine-generator assembly continues essentially on schedule.

An engineering and construction task force has identified remaining problems and is expediting the resolution of the problems now to minimize any possibility of slip in the expected fuel load date of January 1983. The unit is 80 percent complete and is scheduled to be in commercial operation in September 1983.

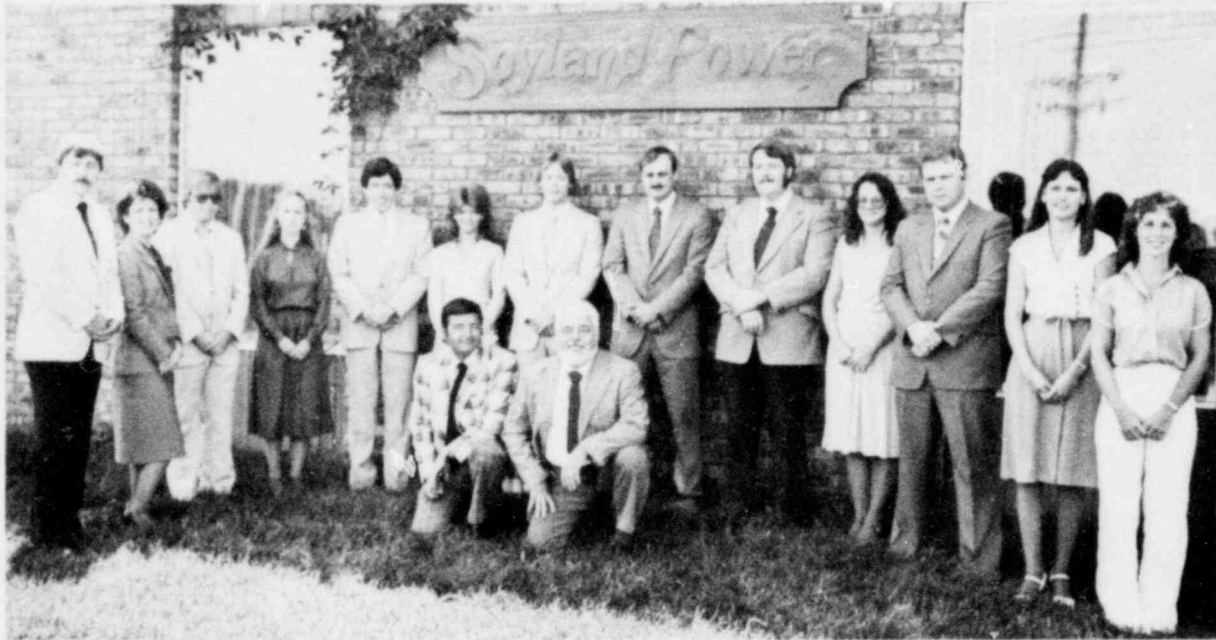
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This April 1981 photo of the Clinton Power Station shows the turbine building and reactor 80 percent completed.

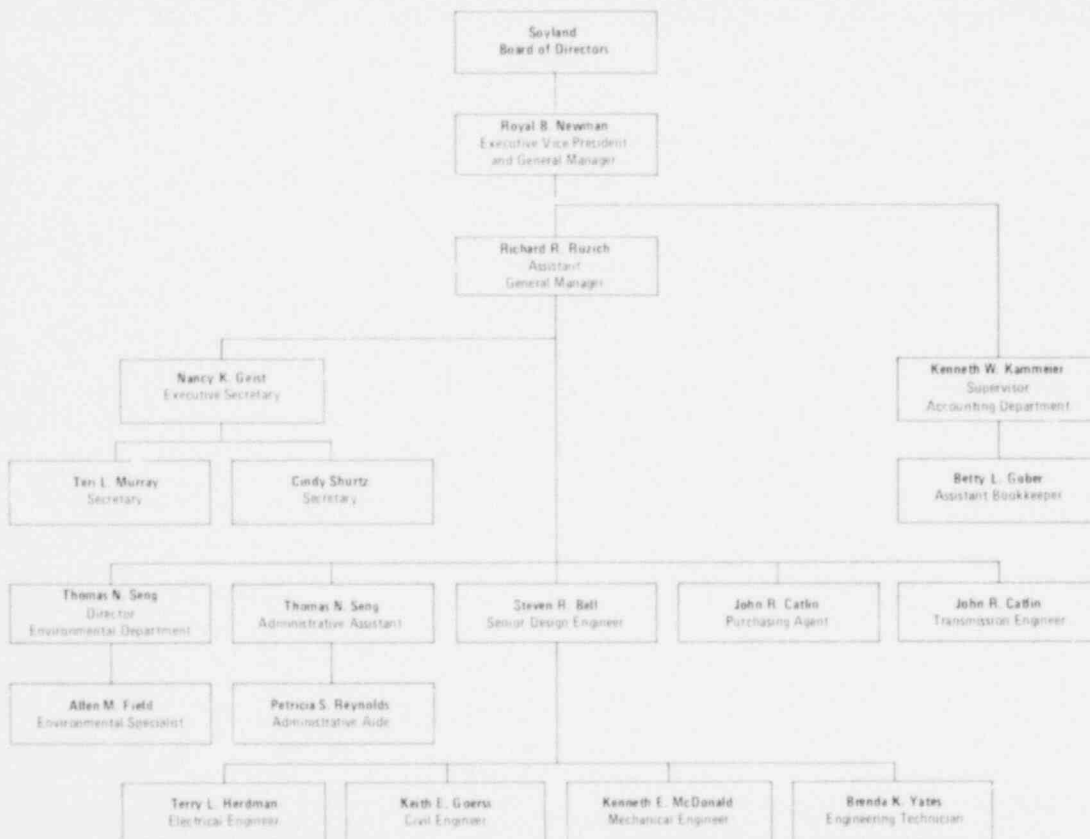




# The Staff



From left: Terry Herdman, Petricia Reynolds, Allen Field, Teri Murray, Steven Bell, Betty Gober, Keith Goerss, Kenneth McDonald, John Catlin, Cindi Shurtz, Thomas Seng, Nancy Geist and Brenda Yates. Kneeling, from left, are: Richard Ruzich and Royal B. Newman. Kenneth Kammeier is not pictured.





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